

## METHODS OF DEVELOPMENTAL CONTROL IN FORMATION OF STUDENTS' SOCIO-PEDAGOGICAL THINKING

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The article justifies parameters of the implementation of developmental control methodology in the formation of students' socio-pedagogical thinking, on the basis of "complementarity" concept. The leading idea of the students' appropriate training is the development of professional thinking of the future social educators and specialists in social work in the aspect of the developmental education ideas. The model and methodology of applying complementarity method in vocational and educational training of students studying in the field of "Social Work" and "Social Pedagogy" have been presented. Pedagogical conditions of successful implementation of complementarity method elements in the development of students' social and professional pedagogical thinking have been revealed. The algorithm of working out problem-developmental exercises has been presented which is based on the idea of the formation of scientific concepts and programmed exercise of "socialization of the individual", which can be used to determine the level of socio-pedagogical thinking.

**Keywords:** Developmental Control, Social Pedagogy, Social Work, Socio-Pedagogical Thinking

### INTRODUCTION

#### 1.1. Introduce the Problem

Today pedagogical diagnostics and control in higher education system is of particular importance, because every educational program must be accompanied by special evaluative teaching measuring materials or tasks in each discipline of the curriculum, designed to measure the level of mastering these disciplines by students for the purpose of certification. It is relevant to convert control measuring materials in educational and informative – that control and develop not only memory, but also cognitive and reflective skills. This is especially relevant now – in a context of continuous online, part-time and open education which is actively implemented throughout.

Advanced creative personality, which is being formed today, has a special creative mission. Thus, V.G. Lankin, characterizing the contemporary processes in education says that at the beginning of the third millennium mankind is facing a new emerging era, and it is by no means the epoch indifferently translating current post-industrial technologism into the future. It is rather the epoch of searching and

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finding the lost integrity – integrity of consciousness, spilled into hundreds of specialized fields of knowledge, integrity of a well-equipped house that has been ruptured because of closing and overheating of technological expansion and has been completely broken by winds of environmental disasters; the integrity of the individual, lost in the society of the alienation, its moral and spiritual completeness. It is a time to gather stones (Burilkina *et al.*, 2015).

It is a time of ideological and moral search of image and human paradigm, a time of development of a thinking personality, moreover, a professionally thinking personality: “If we continue to teach knowledge, disciplines and subjects – it is a dead end” (V.M. Rozin). As far back as in the 19<sup>th</sup> century a well-known methodist V. Latyshev said that we should not teach knowledge but thinking; we would add “a professional pedagogical thinking”, and this is much more important than to give certain knowledge.

This problem is also topical in training specialists in social work and social educators, i.e., along with possession of professional knowledge and skills, a specialist in social work (and social educator) should have the integrative qualities of a professional to perform certain functions: educational, diagnostic, organizational, prognostic and others (Bezenkova, 2009).

Among the general requirements for professional’s education are as follows:

- to be able to revise one’s own positions, to select new forms and methods of work in the conditions of development of science and changing social practice;
- to possess organizational and activity-based skills necessary for self-examination, development of one’s creative abilities and advanced training. As a mediator in the relationship between the individual, family, society, a social work specialist (social educator) affects the formation of parenting, humane, morally and physically healthy relationships in society, in the family, among children and adults (Potrikeeve and Mustaeve, 2013). In this mechanism, forms of social support are not defined “from outside” and do not have the character of charity. They are based on the needs of a particular community of people and implemented with their direct participation.

The social educator, social worker not only teaches and directs, but inspires and motivates people to action, initiative and creativity. At the same time, an expert task is to “wake up” the client’s social reflection through the development of his/her social and pedagogical thinking. Here we can quote the words of K.D. Ushinskiy that “only the personality can influence on the development and determination of a personality, only the character can form a character”. And, as a continuation of this idea, we can add that the specialist who has developed his/her socio-pedagogical thinking will be able to carry out the task of its formation and development in a client.

The hypothesis of the study is as follows: the development of students' social and professional pedagogical thinking will be effective if the following set of conditions is met:

1. The general orientation of the integration of ideological and conceptual, reflexive and contextual and personal approaches in the development of professional socio-pedagogical thinking of students.
2. The implementation of systematic interdisciplinary connections to integrate professional-pedagogical and special, private and substantive knowledge.
3. Usage of the model of developed technique as the main reference point in the forming pedagogical experiment.
4. Using a system of special developmental controlling exercises of reflexive and additional plan facilitating merging of knowledge of the essence of other objects with self-knowledge.

In accordance with the stated hypothesis, the following objectives have been set in the study:

- to analyze the development and to assess the current state of pedagogical control in the higher education system and, based on this analysis, to consider the scientific aspects of its organization and content;
- to develop a model of technique of developmental control in the process of formation of students' socio-pedagogical thinking in the study of basic professional and professional-pedagogical disciplines with elements of complementarity method;
- to develop an appropriate methodology of using developing diagnostic materials in the formation of professional socio-pedagogical thinking of students and to identify necessary and sufficient pedagogical conditions to facilitate their implementation;
- to carry out pedagogical experiment and evaluate the results with the use of modern diagnostic methods and statistical analysis.

## **1.2. Explore Importance of the Problem**

In the current educational situation, there is a contradiction between the relatively high elaboration of methodological foundations of modern developmental education and the insufficient number of scientific and methodical work of the corresponding level, revealing the mechanism and practice of implementation and diagnostics of advanced methodologies and technologies in the work of professional and educational institutions. In other words, there has been a sharp contradiction between the large number of new methodologies, theories and technologies and the insufficient number of appropriate vocational training methods. This contradiction has defined our research problem: what are the conditions for enforcement of

developing function of pedagogical control that ensures the formation of professional socio-pedagogical thinking in social work specialists and social educators.

The object of research is professional-pedagogical training of future experts in social work and social educators at the university.

The subject of research is the method of implementation of developmental pedagogical control in training of social work specialists and social educators.

The objective of the investigation is: to reveal and substantiate pedagogical conditions for enforcement of developing function in the formation of students' socio-pedagogical thinking through using elements of the complementarity method and the corresponding assignments system of reflective-additional plan.

### **1.3. Describe Relevant Scholarship**

To justify the urgency of the problem and research topic we analyzed the works of scholars – education methodologists (B.S. Gershunsky, S.I. Hessen, V.V. Krayevskiy, N.D. Nikandrov et al.), teachers and psychologists. Of these, the most important for us were studies dedicated to the development of activity-based approach (Yu.K. Babanskiy, V.A. Belikov, V.V. Davydov, L.V. Zankov, I.I. Ilyasov, P.I. Pidkasiy et al.), the ideological and conceptual approach, as a form of a more general systemic approach (V.P. Bepalko, G.G. Granatov, I.G. Pustilnik, G.N. Serikov, V.P. Simonov, A.V. Usov *et al.*).

In addition, we took into consideration professional and pedagogical aspects of a learner-centered approach (K.A. Abulkhanova-Slavskaya, B.G. Ananyev, L.I. Bozhovich, A.N. Leontyev, S.L. Rubinstein, V.A. Slastenin, etc.), professional and activity-based (G.A. Bokarev, G.A. Petrov, etc.) and attuned to it contextual (A.A. Verbitsky, etc.) approaches; research on the theory of pedagogical reflection (Yu.N. Kulyutkin, G.S. Sukhobskaya, G.P. Shchedrovitskii, N.Ya. Saygushev *et al.*).

In our study, we relied on the psychological and theoretical foundations of professional pedagogical thinking considered in the works of K.A. Abulkhanova-Slavskaya, O.S. Anisimov, A.V. Bruschlinskiy, V.V. Dokuchayev, T.V. Kudryavtsev, L.M. Mitin, Ye.K. Osipov, S.L. Rubinstein; on studies on teaching diagnostics in Russia (V.P. Bepalko, L.S. Vygotsky, P.Ya. Galperin, I.Yu. Gutnik, K. Ingenkamp, N.F. Talyzina, L.M. Friedman et al.) and abroad (T. Guskey, Y.S. Linkoln, M. Scriven); on research on essence, structure and specific of socio-educational activities and training of students for it (M.A. Belyaeva, B.Z. Vulfov, M.A. Galaguzova, V.N. Gurov, R.A. Litvak, V.D. Semenov, G.N. Filonov *et al.*).

The study is essentially based also on the works revealing genesis, structure, and functions of communication and relationships of interpersonal (professional) interaction (A.A. Bodalev, M.M. Bakhtin, M.S. Kagan, G.A. Kudryavtseva, L.A.

Petrovskaya). In social pedagogy and social work, the ideas of which are actively developed by V.G. Bocharova, B.Z. Vulfov, M.A. Galaguzova, R.A. Litvak, A.V. Mudrik, F.A. Mustayeva, V.D. Semenov, G.N. Filonov, N.B. Shmeleva, T.F. Yarkina and others, communication is regarded as a basic, professionally significant category.

Methodological and organizational and technological aspects of the study were based on scientific works by: B.S. Gershunskiy, V.I. Zagvyazinskiy, A.I. Kochetov, V.V. Krayevskiy, A.Ya. Nayn and others.

#### **1.4. State Hypotheses and Their Correspondence to Research Design**

Pedagogical conditions of improvement of students' vocational training to develop their professional and socio-pedagogical thinking are the main basis of its success. We note in this regard that in the light of complementarity ideas, the important criteria to us (except content and procedural ones) have been their continuity in the classification of pedagogical conditions (compliance with certain traditions or known research) and novelty. We considered that continuity should dominate in necessary conditions and novelty – in sufficient conditions. Therefore, in our case, the necessary conditions are the first and the second conditions and sufficient – the third and the fourth conditions.

1. The general orientation of merging of ideological and conceptual, reflexive and contextual and personal approaches to the development of professional socio-pedagogical thinking of students. The ideological and conceptual aspect (systemacity) includes a theoretical component – understanding the essence of the main categories: “socialization of the individual”, “social nature of the individual”, “socio-pedagogical thinking” and stages of their dialectical cognition. Reflective and contextual principle is manifested in the use of discussion of the subject and social context of students' future professional activity, modeling and analysis of the action of students – future specialists; and also the development of communicative reflection (as a social core of reflection) during a lecture or a seminar because the context of professional activities of the social worker is mainly communication. Emotional and-personal component includes subjectively significant components of this activity, the attitude for the personality-oriented education, self-knowledge and self-improvement (Potrikeeveva, 2001).
2. The second necessary condition is aimed at the realization of interdisciplinary connections. As part of our research, succession, continuity, integrity and responsiveness are realized through the implementation and interdisciplinary connections in the study of the following disciplines: “Social pedagogy”, “Education”, “Research methods in social work”.

3. We have created a model of implementation of methodology for development of a professional socio-pedagogical thinking in students based on three interrelated main features: simplicity, clarity and information capacity in revealing the essential features of the research subject and design. In it, we reflected: substantial, organizational, technological and procedural aspects of techniques developed by us. The model of the technique developed by us for undertaking vocational and diagnostic training in the process development of socio-pedagogical thinking of students consists of four main components: design and organization chart, a graph (Figure 1), logical structure of the concept of “socialization of the individual” and the category of “socio-pedagogical thinking”.
4. The fourth condition is aimed directly at developing reflection and socio-pedagogical thinking in students with the help of special activities, and exercises of reflexive and additional character.

In the time graph developed by us (the main component of the model) the relationship of methodological, general pedagogical and methodical components is graphically shown which ensure the development of professional socio-pedagogical thinking: elements of reflective- complementary methodological approach, the elements and features of professional socio-pedagogical thinking, the elements of the concept of “socialization of the individual”, interdisciplinary relations ensuring the development of the basic concepts, forms of teaching and students’ professional activity (Fig. 1). Besides, the Figure presents realization of teaching conditions singled out by us in a contracted form.

In this graph, the first (upper) line contains general logical stages of cognition of the essence of an object or a phenomenon – in our case, the process of socialization of the individuality. Since this concept is central in the course of “Social pedagogy”, in creating the model we have focused on the simultaneous development of the related concepts (second line) and professional pedagogical thinking of future specialists in social work (Mameteva, 2016).

The third line of the graph illustrates the elements of the “complementarity principle”, which are represented at different levels of methodology.

Here for the convenience of presentation of the graph we interpret the elements that we used in connection with the specifics of our research problems in a concise way: 1) scientific concepts (and ideas); 2) taking into consideration and awareness of a four-stage structure of any concept (base, core, consequence, total critical interpretation); 3) generalized treatment of the “concept” category; 4) singling out of three laws: natural conformity, complementarity and cultural conformity; 5) distinguishing six pedagogical thinking styles with varying degrees of dialecticity and optimistic hypothesis of merging of all these styles in each person’s thinking of (in the norm); 6) focus on the selection and formation of four levels of professional

Steps of knowledge of the phenomenon of "socialization of the individual" essence		1 Base	2 Core		3 Consequence	4 General critical interpretation			
The structure of the concept of "socialization of the individual"		Status of a problem in various sciences	Characteristics of the concept itself		Individual and his/her development as a result of socialization	Developed professional and pedagogical thinking in expert in social work, effectively operating with this concept.			
Elements of "the concept of complementarity", used in the experimental and theoretical study		Scientific concepts (and ideas)	Four-step structure of the concept	Generalized interpretation of the category of "concept"	Patterns and the relevant principles	Styles and optimistic "hypothesis"	Levels of development of thinking	Actual and future styles	The overall picture of the world, society and individuality thinking
The elements and features of a professional socio-pedagogical thinking	1.Types		*	x		+	•	•	*
	2. Generic relations	•	•	*		+	•		•
	3. Regularities			•	*	+	x	*	*
	4.Styles					-	*	*	*
	5.Levels	+	*	*	•	+	*	*	*
The content of the educational material "Social pedagogy" (theoretical foundations)		Social pedagogy as an academic subject, branch of science and of public activities	The emergence and formation of socio-pedagogical theory and practice		Pedagogical competence of social work expert	Socialization is the key problem of social pedagogy. Definition of socialization factors, properties, contradictions, the relationship with other phenomena, stages, role and place of the concept of socialization in the knowledge of the essence of the central objects in social pedagogy			
Programmed exercises and activities of reflective and supplementary character		Exercise 1	Exercise 2		Exercise 3, 4	Exercise 5			
Forms of training sessions		Lecture, workshop, independent work	Independent work, workshop		Lecture, workshop, independent work	Lecture, workshop, independent work			
Interdisciplinary communication	Pedagogy	PR			PR	PR			
	Research methods in social work		PRO		PRO	PRO			

Figure 1: A graph of method for development of students' professional socio-pedagogical thinking and the basic concept of "socialization of the individual"

pedagogical thinking in all students; 7) focus on the diagnosis and development of current and future styles and types of professional-pedagogical thinking 8) the development of the concept of the picture of society and models of socio-pedagogical thinking of the individuality (Granatov and Mameteva, 2014).

In the fourth line there are elements and features of the socio-pedagogical thinking: 1) this way of thinking is typical of any normal person – it is only necessary to distinguish its types: professional and non-professional; 2) its closest genus is professional-pedagogical thinking; 3) the nature of professional socio-pedagogical thinking is based on three main principles – natural conformity, cultural conformity and complementarity; 4) styles of socio-pedagogical thinking (rigid, formal logical, empirical, theoretical, rational, dialectical-generalizing ones are introduced) that objectively merge into the each person's thinking; 6) depending on the dominance freedom or discipline (coercion) in the activity four levels of socio-pedagogical thinking are distinguished: student's, methodological or technological, search, teacher's or methodological.

In the fifth line the content of the discipline of "Social pedagogy" (theoretical aspect) is reflected. In the above five lines of the graph, we presented implementation of the first necessary condition – focus on the integration of three methodological approaches in the development of professional socio-pedagogical thinking of future professionals in the formation of the corresponding concepts.

In the sixth line of the presented graph we have shown which exercises or assignments are used at that. These diagnostic educational materials make up the system, which is a kind of school of education for students – the school of self-knowledge, self-improvement – self-education school. With the help of these exercises of reflective and additional character we have implemented the second sufficient condition – strengthening of developing function of pedagogical diagnostics. This very condition is reflected in the seventh line as well. Here it is shown at what training sessions the method is implemented – the content of the educational material of the discipline under study is introduced – at lectures, practical classes or during independent work. Implementing a fruitful idea of merging knowledge with self-knowledge is possible not creating abstract arbitrarily made-up situations, but directly during educational work – at lectures, seminars – in the study of a particular discipline, in the formation of professional and pedagogical concepts (Potrikeeveva, 2001).

The eighth line consists of names of other professional-pedagogical and special disciplines; when studying them in parallel with the basic concepts, the concepts of pedagogical thinking, the socialization of the individual and social nature of the person are given ("Education", "Research methods in social work"). It reflects the implementation of the second necessary condition – interdisciplinary connections. In the same line, we have specified the type of interdisciplinary connections: "PR" – previous, "PRO" – promising. This is due to the fact that the study of these disciplines by students is not parallel, but takes place at different years of study.



## **METHOD**

### **1.1. Identify Subsections**

In the context of our study the purpose of experimental work has been formulated by us as follows: to test experimentally the model of method and the influence of the complex of highlighted pedagogical conditions on the effectiveness of the developing pedagogical control and the formation of socio-pedagogical thinking of the future social educators and social work specialists. The following objectives have been set during the organization of the experiment:

1. To justify the conduct of experimental work theoretically.
2. To identify initial levels of knowledge and socio-pedagogical thinking, as well as the level of formedness of the basic socio-pedagogical concepts existing prior to the experiment.
3. To check the effectiveness of teaching of vocational and teacher training courses in terms of interdisciplinary connections.
4. To assess the possibility of using exercise set of reflexive and additional character for the implementation of research plans and identifying optimal variant of sequences and methods of their performance in terms of interdisciplinary connections.
5. Using the developed model of the method for achieving the vision, to check its efficiency with the implementation of all the necessary and sufficient conditions.
6. To carry out the processing of the experimental results with the use of various types of analysis. During the experimental work the following methods have been used: the study of teaching experience, observation, questioning, testing, individual and group interviews with teachers and students, test sample surveys, modeling, ranking, methods of mathematical statistics.

In our experimental study, we tried to maintain the conditions of ensuring the similarities and immutability of educational processes in the experimental and control teams; to vary and measure controlled conditions and the intensity of the factors that influence the final results; to systematically assess, measure, classify and record the frequency and intensity of the current events of the experimental process, particularly such cases when the object of study acquires sustainable planned characteristics (Rashchikulina, 2011).

### **2.2. Participant (Subject) Characteristics**

We characterize the research base. Students of the Faculty of Social Sciences and Psychology Faculty at Magnitogorsk State University were involved at different

stages of the experimental work. At the first stage of the experiment (ascertaining), we involved students of the first and the second years of studies in the specialty of “Social Work”. Search developmental stage of the experiment was carried out in the practice of educational activity of students of the second, third and fourth years of the Faculty of Social Sciences and the fifth year students at the Psychology Faculty.

The formation of experimental and control groups was carried out in accordance with the approximate parity enrollment, teachers’ educational qualification, approximately the same working conditions. The forming (the third) stage of the experiment was carried out with the participation of third-year students of the Faculty of Social Sciences.

As noted, the experimental work was carried out in three stages.

In the first stage, students of the first and second years of studies in “Social Work” specialty were involved in an experiment. The levels of knowledge on the subject of “Pedagogy” were checked through the input test (this discipline is studied in the second and third semesters). At this stage of the experiment initial testing of students was conducted using the same tasks. We used multiple-choice questions relating to “the socialization of the individual” and “personality structure” as a test; a questionnaire was also held to assess the content and properties of pedagogical thinking. Ascertaining and pilot experiments carried out at this time revealed the following: students of all groups (the first and the second year of studies) had a low understanding of the concepts, their characteristics and functions (although there was a slight divergence); vague notion of the content, patterns and properties of pedagogical thinking.

At the second stage of the study search developing experiment was carried out, pedagogical conditions were specified, and methods of their implementation were developed. Designing a model for development of professional socio-pedagogical thinking of future specialists in social work was initiated; its testing in the practice of educational activity of students of Social Faculty and Psychology Faculty at Magnitogorsk State University was organized. At this stage of the experiment we were able to implement the second educational condition for the effectiveness of the pedagogical method under consideration (see Fig. 1) – interdisciplinary links at the courses of “Social pedagogy”, “Pedagogy” and “Methods of research in social work”. We conducted four student knowledge assessments on the programmed exercise on “Socialization of the individual” and the same number of assessments on the programmed exercise “The social essence of the person”: at the fourth, third and second years of studies at the Social Faculty and at the fifth year at the Psychology Faculty.

Since we have checked both the level of formedness of these concepts and the level of reflection, then the results of these skills formedness will be listed separately. We have obtained the following results (Table 1).

TABLE 1: SUMMARY TABLE OF THE ASSESSMENT OF THE LEVEL OF REFLECTION AND FORMEDNESS OF THE CONCEPTS IN STUDENTS AT THE SOCIAL FACULTY AND THE PSYCHOLOGY FACULTY

<i>Indicators</i>		<i>Faculty of Social Sciences</i>			<i>Psychology Faculty</i>
		<i>2 year</i>	<i>3 year</i>	<i>4th year</i>	<i>5 year</i>
“Socialization of the individual”	Ratio of formation of concepts	0.35	0.39	0.48	0.51
	Level of reflection	0.21	0.22	0.33	0.35
“Social essence of the person”	Ratio of formation of concepts	0.37	0.41	0.53	0.62
	Level of reflection	0.20	0.21	0.27	0.33

As can be seen from the table, these are relatively poor results, especially if we take into account that at the third-year students study Social Pedagogy, using the basic concepts of which the student knowledge assessments were conducted. The coefficients of formedness of concepts here vary in the range of 0.35 to 0.53 at the Social Faculty. Hence it is important for us to conclude that the conceptual approach to presenting the material was not used in teaching this course. We learned this at the third stage of our study, when we conducted this course and the formative experiment was performed.

At the third stage of the study the formative experiment, analysis and synthesis of its results were carried out, the elaboration of the model of method for development of students’ professional socio-pedagogical thinking was completed, findings were summarized, conclusions were made, and also logic of the material presentation was determined, theoretical and practical findings were specified, presentation of the results and the article as a whole were carried out.

We conducted the formative experiment when third-year students at the Social Faculty were studying basic training course of Social Pedagogy. Two groups of students were selected for the experiment: one control group– numbering 25 persons, and the experimental group which included 25 persons as well. Education in the control group was out according to traditional methods by another teacher. The experimental group was trained with a specially developed complex of pedagogical conditions conducive to the implementation of the conception of our study.

During the academic year, we formed the students’ concept of “socialization of the individual” and professional socio-pedagogical thinking with a parallel study of the basic educational information and with the compliance of the whole complex of pedagogical conditions, using the proven system of the above-mentioned special activities and exercises. The overall objective in this case remains the same – it is to strengthen the educational function of pedagogical diagnostics and bring students to a certain (rather high) level of professional socio-pedagogical thinking. Here

TABLE 2: THE RESULTS OF THE IMPLEMENTATION OF PEDAGOGICAL CONDITIONS IN FORMATION OF THE CONCEPT OF "SOCIALIZATION OF THE INDIVIDUAL" IN STUDENTS

Groups	Number of students	Numerical values of completeness of concepts acquisition coefficients	
		1 <sup>st</sup> assessment	2 <sup>nd</sup> assessment
EG	25	0.38	0.85
CG	25	0.38	0.51
Methods of analysis	Comparative analysis of methodologies		
	$\alpha = \frac{k_3}{k_K}$	1	1.67
	"Student for dependent samples"	Step-by-step (and pixel-by-pixel) analysis For the number of degrees of freedom n 25-1=24 when p<0.05 0.05 t (obs)=16.21>1.71 = 0.05 t (crit) - indubitably	

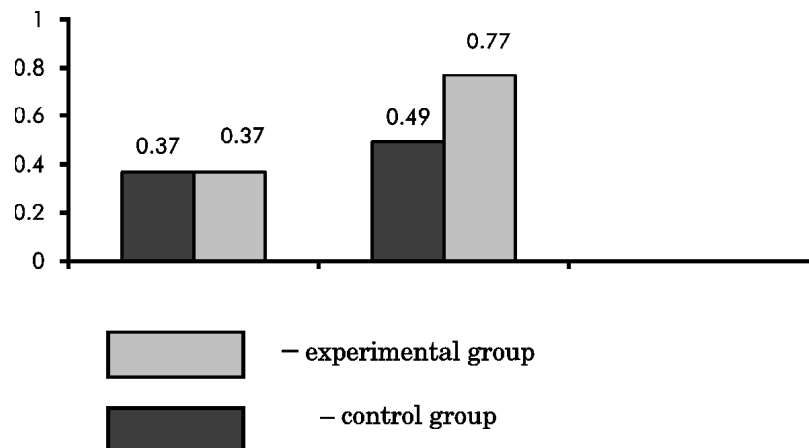
we, in contrast to the first and second phases of the experiment, used a worldview questionnaire and programmed exercise on the concept of "professional socio-pedagogical thinking" as well, which helps us control the degree of its formedness and correct technique in a more precise way.

It should be noted one more time that the study of the concept about the method of complementarity and professional socio-pedagogical thinking took place in the study of the basic, mandatory teaching information at lectures and seminars. Therefore, we were able to fully implement special training sessions and exercises in curriculum, which not only contribute to the "fusion of knowledge with self-knowledge", but also give them an immediate "practical" value.

As can be seen from the analysis of Table 2, traditional training also contributes to the development of socio-pedagogical thinking to some extent. But the coefficients of the formedness of the concept of "socialization of the individual" ( $k = 0.85$ ) and the effectiveness of methods in the experimental group were significantly (1.67) larger. This is graphically represented in the histogram (Fig. 2).

We also note that the coefficient of efficiency of formedness of the concept of "socio-pedagogical thinking" in students of the experimental group was quite high -  $\alpha = 0.77 / 0.49 = 1.57$ .

Analysis and synthesis derived from experimental data as a whole support the hypothesis of study and allowed speaking about the successful achievement of experiment purposes, and about that this technique can be used in high school-taking into account the specifics of the contingent and specific teaching and learning



**Figure 2:** Changes of the coefficients of formedness of the concept of “socialization of the individual”, two assessments in the pilot study

conditions; and its results compared with the traditional way of teaching are much higher.

This conclusion is confirmed by the statistical methods used by us – “Chi-square” (using the formula and by a comparative evaluation) and “Student test” (for dependent samples) – Table 2 and Figure 2.

Thus, we can say that our hypothesis is correct, i.e., recent changes in the levels of development of professional socio-pedagogical thinking of students of the Social Faculty are not caused accidentally, and are a consequence of the implementation of the selected pedagogical conditions in the complex.

## RESULTS

Developing the above ideas in our study, we made an algorithm for drawing up the programmed exercise (Rashchikulina, 2013):

1. Identify the main ideas, goals, tasks of programmed exercise.
2. Make a sequence of questions of programmed exercise, having denoted actions that are dominant at each stage of knowledge (stages of knowledge: 1 – base, 2 – core, 3 – consequence, 4 – the total critical interpretation):
  - perception of the properties, attributes of objects, phenomena;
  - generalization of ideas (their abstraction);
  - highlighting essential and non-essential properties;
  - definition of the concept;
  - identification of connections and relationships with other concepts;
  - clarifying the scope, the extension of the notion content.

3. What are the signs and symbols and figurative means that you use in the formulation of questions and answers of programmed exercise?
4. Adjust created questions based on different types of mental feelings prevailing at each stage of the development of this concept: similarities and differences, mental stress, surprise, expectation, amazement, doubt, confidence, irreconcilable contrast, mental success. It is important to use the mechanism of change, switch of emotions.
5. Check the contents of each issue of programmed exercise, taking into account the properties of concepts: generality, irreversibility, convolution, stage-by-stage approach, consistency, reflexivity.
6. Consider answer options (3-4 variants) in the responses to individual questions leave space for the child's creativity, based on the recommendations of M.N. Tushev:  
Programmable options of responses:
  - define the boundaries of the field of mental action;
  - indicate objects or certain aspects of the same object, on which thought should be concentrated;
  - set the sequence of thoughts from one object to another at the initial stage;
  - contribute to the penetration of ideas in the essence of the object.
7. What pedagogical functions does each of the questions implement?
8. What degree of autonomy, creativity is in the answer to each question?

This algorithm directs students to reflect on program ideas, allows connecting the independence and creativity in the process of the formation of scientific concepts.

On the basis of the algorithm we have developed a programmed exercise that can be used to determine the level of socio-pedagogical thinking (and reflection) on the example of the concept of "socialization of the individual" – one of the basic concepts in the course of Social Pedagogy.

The use and awareness by students of four common stages of knowledge contributes to activation of reflexive function of concepts: base (1), core (2), consequence (3), total critical interpretation (the 4<sup>th</sup> stage, as a special and important part of the consequences for the philosophical and pedagogical reflection). By controlling the process of development of this concept in students' brainwork (by creating it), we manage their reflection – form their reflexive skills.

### **Programmed exercise "Socialization of the individual"**

1. Socialization occurs:
  - a) during spontaneous interaction of person with society and spontaneous influence of different, sometimes divergent, circumstances of life on it;

- b) in the process of targeting creation of conditions for human development in the process of state influence on certain categories of people;
  - c) in the process of individual's self-development and self-education;
  - g) due to all of the above.
2. Functions of teaching a person of cultural norms and patterns of behavior, as well as control how strongly, deeply and properly internalized social norms and their role are performed:
- a) institutions of socialization;
  - b) agents of socialization;
  - c) mechanisms of socialization;
  - d) factors of socialization.
3. In the "troubled times" associated with an abrupt change of power, many citizens experience stressful conditions associated with complexes or fears. What are (some) of these complexes or fears which are distressed by macro factors (or macrosociety)?
- a) lack of understanding and inferiority;
  - b) isolation;
  - c) hopelessness and insecurity;
  - d) all of the above.
4. For which reason an individual can be regarded as an object of socialization?
- a) the person takes possession of the role of men or women (sex-role socialization) and creates a family, acquires family roles;
  - b) the person experiences socio conditional need to follow generally accepted regulatory standards and be socially relevant at work, during his/her studies and in his/her spare time;
  - c) regulatory requirements in society limit the freedom of man, but the man himself always reproduces the system of social relations;
  - d) all of the above.
5. In the process of socialization of the individual the following interactions with the social environment are highlighted:
- a) adaptation;
  - b) de-socialization;
  - c) re-socialization;
  - d) internalization.

Relate these concepts with their definitions:

- 1) formation of the internal structure of the human psyche with the assimilation of social norms, values, and other components of the social environment through social activities;
- 2) cure of the old values, norms, roles, and rules of conduct;
- 3) the process and the result of the active adaptation of individual relating to a layer or a group to the conditions of new social media, to changing or already changed social conditions of life;
- 4) learning new values, norms, roles and rules to replace the old one.
6. How the concepts of “social education” and “socialization” are associated with each other in social pedagogy?
  - a) social education is an integral part of the socialization process, which includes self-education;
  - b) social pedagogy studies the social education as a purposeful and systematic process in general in the context of socialization;
  - c) social education and socialization are the object of study of social pedagogy;
  - d) all of the above.
7. On the basis of generic relations between categories of universal, general, special and individual, determine by analogy which of the following categories is the closest class to the definition of “the individual”:
  - a) society;
  - b) civilization;
  - c) person;
  - g) identity.
8. What reflection is carried out in the process of socialization of the individuality?
  - a) intellectual (such as “thinking about thinking”);
  - b) moral and spiritual (e.g., religious – for the believers);
  - c) civil (defining, for example, law-abiding citizen);
  - d) integrative, – individually personal, socially significant, which combines all of the above (the backbone core of which is a communicative reflection).
9. Relate concepts, their definitions (compare them) and find out which of them is the narrower in scope? (If you can, imagine their generic relationship using the Euler circles)
  - a) socialization;
  - b) education;
  - c) upbringing;



- g) formation.
- 1) the focused process of training and education for the benefit of individuals, society and the state, accompanied by a statement of achieving to certain educational levels by a citizen.
  - 2) process of formation of the human person as a result of the objective influence of heredity, environment and own socially significant activity of the person;
  - 3) process of assimilation of human values, moral norms, attitudes, patterns of behavior inherent in a given society, group at a given time, and reproduction of social ties and social experience by him/her;
  - 4) deliberate and systematic process of identity formation in the conditions of specially organized public education system.
10. What approach do you think reflects the leading role of the person in the process of socialization?
- a) subject-subjective (socialization is a process of development and self-change of the human in the process of assimilation and reproduction of culture);
  - b) subject-objective (socialization is a process of human adaptation to a society that forms each of its members in accordance with its inherent culture);
  - c) reflective- complementary (knowledge and self-knowledge, education and self-education are complementary in the socialization);
  - d) all of the above.
11. Socialization of the human is:
- a) process (formation of the individual in society);
  - b) result (assimilation of social experience);
  - c) mechanism (transmission of culture);
  - d) all of the above.
12. Due to which a person becomes a subject of socialization?
- a) a person is a law-abiding citizen (political socialization associated with the civil reflection);
  - b) a person knowingly and interestedly decides a variety of tasks;
  - c) a person acquires the common values in the process of communication with others;
  - g) due to all of the above.

13. Personality development is due to the interaction of many factors. Which of them cannot be attributed to the process of socialization?
  - a) environment;
  - b) education;
  - c) heredity;
  - g) activities and communication.
14. What is the source and the “driving force” of the individual in society?
  - a) biological instincts or needs;
  - b) the unity, the “struggle” or the interaction of opposites (in the society, thinking, nature);
  - c) personal interests, as well as the desire for harmony, truth, beauty and goodness;
  - d) all of the above.
15. Select the most capacious and right, in your opinion, definition of socialization of a person:
  - a) Socialization is the process and the result of the assimilation of historically developed social norms, values, attitudes, modes of communication with the spiritual and material culture by a person.
  - b) Socialization is the process of identity formation, training and assimilation of the individual values, norms, attitudes, behavior patterns specific to the society, social community group.
  - c) Socialization is the process and the result of the formation of the personality in his/her interaction with the social environment in which, on the one hand, psychobiological inclinations inherent in human nature are realized, and on the other – the society transforms them into socially significant qualities of human person by familiarizing the individual to the culture with the active participation of the person himself/herself;
  - d) Socialization is the active involvement of people in the life of the community with the democratic principles of joint activities, the process of granting them all the more rules and increased responsibilities, in which the reproduction of socio-cultural images and norms of public life and their improvement takes place.
16. Which of the contradictions of the process of socialization can turn a person into a victim?
  - a) between spontaneity and purposefulness of this process;
  - b) between a person’s ability to adapt (to the norms, rules and way of life) in society and his/her inner desire or ability to resist it (e.g., in an effort to get rid of its excessive constraints and limitations);

- c) between the facts that a person is both a subject and an object of socialization;
  - d) all of the above.
17. The process of socialization occurs in certain conditions which are called factors. Which of the four groups of factors directly affects the personal development through the so-called “agents of socialization”?
- a) mega-factors (planet, world, space);
  - b) macro-factors (country, society, state);
  - c) meso-factors (ethnicity, type of settlement, means of mass communication);
  - g) micro factors (family micro society, peer group, school, kindergarten).
18. Which of the provisions of complementarity method with a minimum length (short form) has the maximum amount of information for teaching logic, and social pedagogy, and, therefore, for the concept of “socialization of the individual”?
- a) evolutionary-revolutionary (continuously-discrete) process of socialization of the person is described in the pedagogical logic with the laws or principles of integrative human-dimension of social and subjectively meaningful dialectic;
  - b) in the socialization of the individual, as well as in the historical development of mankind, regular changes of world view occur with their consistent integration and change of the dominant in different age periods (here ontogeny follows phylogeny as well);
  - c) the concept of individual is a process and the result of awareness and intuitive feeling of the essence of the person associated with emotional experiences (here we note that the essence of any study of the subject is a system of its properties, characteristics, features and qualities in their natural organic connection);
  - d) pairs of complementary and, in particular, opposite properties, attributes or traits, simultaneous and equally clear manifestation of which is impossible or unlikely, are combined and relatively steadily asymmetrically blend in the system of properties of any object or subject..
- Sample (key) of performance (test) of programmed exercise “Socialization of the individual”

Assignments to assess students’ reflective abilities:

19. Relate each of these 18 questions to the relevant basic stages of development of the concept of “socialization of the individual” (1. Base. 2. Core. 3. Consequence. 4. Total critical interpretation), put down relevant Arabic numerals in the first (left) column the “main stages of development of concepts”.

The main stages of development of the concept	Necessary signs of concept	Didactic functions of concept	No. of question	Possible answers				The content and purpose of the questions
				a	b	c	d	
1	1	2	1				*	The generic nature of socialization
3	1	4	2	*				Where inspection and training takes place
2	2	3	3			*		One of the functions of macro society
1	2	3	4		*			Individual is the object of socialization
3	4	4	5	3	2	4	1	Forms of interaction of the individual with society
4	5	4	6		*			Communication concepts of "socialization of the individual" and "social education"
1	1	3	7			*		The closest genus for the concept of "identity"
3	4	3	8				*	Types of reflection
3	4	4	9	3	1	4	2	Relationships and Definitions
1	1	4	10	*				Personally-notional approach to socialization
3	3	1	11				*	Form of manifestations of socialization of the individual
1	1	4	12		*			Individual is the subject of socialization
1	1	4	13			*		"Bio"- and sociofactors of development of the individual
2	2	4	14				*	Sources of personality development in society
3	3	4	15			*		Genus-species definition of socialization
2	2	4	16		*			Negative conflicts of socialization
1	1	4	17				*	Factors and agents of socialization
4	3	3	18				*	Complementarity method in the logic of socialization

Figure 3

20. This concept shows and has all its necessary attributes: 1. Generalization; 2. Irreversibility; 3. Convolution; 4. Stage-by-stage approach; 5. Systemacity; 6. Reflexivity. Each of the questions of that exercise is directed (successively) at the formation of any of these signs. In other words, which of these signs dominates, i.e., "works" to the greatest extent during the analysis of the responses to each of these questions. Put down the corresponding Arabic numerals in the column (second from left) "essential features of the concept".
21. Any examination of knowledge bears some didactic functions: 1. Cognitive (training); 2. Educative; 3. Developmental (thinking, for example); 4. Controlling (estimating); 5. Corrective. However, in any verification there is one dominant function. Which of these five test functions dominated at every item of this exercise? Put down the corresponding Arabic numerals in the column "teaching functions".

## DISCUSSION

1. Relevance of the research problem is determined by:

- the absence of practically significant landmarks that define the very “mechanism” of the introduction of new methods of diagnosis and pedagogical technologies in the practice of vocational training of students in high schools;
  - rearrange of actual conditions and traditional methods from progressive changes, and new forces shaping the modern information and educational process in high school.
2. Analysis of the problem of formation of students’ professional and socio-pedagogical thinking in psychological and pedagogical literature has allowed us to make a conclusion that the problem of the formation of professional socio-pedagogical thinking has not been developed. The solution to this problem with the use of complementarity method can be a major landmark and a key factor in the creation of new methods for learning professional and diagnostic training of social workers and social work specialists.
  3. We consider that the effectiveness of training specialists and implementation of the plan of our research depends greatly on the level of their socio-pedagogical thinking. We believe that the professional and socio-pedagogical thinking is a form of professional-pedagogical thinking, aimed at the development of relevant concepts and skills for the knowledge and the transformation of social and educational objects, phenomena, processes and actions. Its basic laws are natural conformity, cultural conformity and complementarity, and the main features are: subjective, emotional, reflective, communicative and interpersonal character.
  4. Social pedagogy is one of the key disciplines in training future experts in social work, so the formation of socio-pedagogical concepts (such as “socialization of the individual”) and reflective abilities is one of the main tasks of solving the problem relating to students’ learning developmental diagnostics and formation of social and professional pedagogical thinking as “thinking ... almost always moves in a pyramid of concepts” (L.S. Vygotsky).
  6. Strengthening of developmental function of pedagogical control in the process of formation of socio-pedagogical thinking of students is realized through a set of necessary and sufficient teaching conditions:
    - 1) a general orientation on the merger of ideological and conceptual, reflexive and contextual and personal approaches to the development of professional socio-pedagogical thinking of students;
    - 2) implementation of systematic interdisciplinary connections to integrate professional-pedagogical and special, certain domain knowledge;
    - 3) using a model of the developed method as a main reference point in the forming pedagogical experiment;

- 4) the use of the system of developmental control exercises of reflexive complementarity character for the purpose of merging the knowledge of the essence of other objects with self-knowledge and of strengthening developmental function of pedagogical control.
7. We present the method of implementation of pedagogical conditions claimed in the study hypothesis as a model. The model of method implementation to develop professional and diagnostic training in the formation of students' professional and socio-pedagogical thinking is clearly and information-intensively presented in the form of design and organizational scheme, time graph, as well as schemes that reflect the structure of the concept of "socialization of the individual" and the category of "socio-pedagogical thinking". In this model, all pedagogical conditions that determine the success of our method have been reflected in a contracted form. Time graph, mentioned schemes and developmental diagnostic materials relatively easily answering the "what? where? and how?" questions should be introduced and changed in the course of its implementation.
8. Our experimental and theoretical research has confirmed the high efficiency and prospects of realization of the proposed method. The results do not exhaust the fullness of the research problem. In particular, it seems promising to further improve techniques and methods activating developmental function of pedagogical control based on reflexive monitoring the training process of students with active use of information and computer technology education.

#### ***Acknowledgements***

The authors express their thanks to Valeriy Mikhailovich Kolokoltsev, Rector at the Nosov Magnitogorsk State Technical University; Georgy Georgiyevich Granatov, Professor, PhD in Pedagogical Sciences, for the scientific supervision of experimental and research work; Flura Altafonova Mustaeva, Dean of the Social Faculty, Magnitogorsk State University, for the opportunity to conduct an investigational study with the participation of students of the faculty, as well as Elena Dmitriyevna Petrova, Dean of the Psychology Faculty, Magnitogorsk State University.

The authors are also grateful to the Office of Social Welfare Administration in Magnitogorsk in the person of Irina Nikolaevna Mikhaylenko; Irina Fedorovna Kulikova, Head of the Municipal Institution "Center for Social Assistance to Families and Children in Magnitogorsk" in Chelyabinsk region; and to Magnitogorsk Charity Foundation "Metallurg" in the person of its director Valentin Aleksandrovich Vladimirtsev.

#### ***References***

- Bezenkova, T.A. (2009). *Professional orientation of the development of speech culture of students of high school in the course of studying disciplines of cultural cycle*. Candidate thesis for the degree of candidate of pedagogical sciences. Magnitogorsk State University. Magnitogorsk.

- Bezenkova, T.A. (2012). *The developmental model of speech culture of future social teachers in the course of training*: the collective monograph. Center for Social and Political Studies, Premier. Modernization of Russian education: trends and prospects. Krasnodar, 3.
- Burilkina, S.A., Kaminskiy, A.S., Suprun, N.G. (2016). The study of values and value orientations of students in a transforming society. *Humanities Socio-Economic and Social Sciences*, 10(10): 37-39.
- Burilkina, S.A., Oleynik, E.V., Suprun, N.G. (2015). Methodological approaches to the problem of value-semantic determination of scientific social knowledge. *Historical, Social and Educational Thought*, 7 (6), 2: 241-245.
- Granatov, G.G., Mameteva, O.S. (2014). The concept of complementarity in the programming problem-developmental control in the students' formation of scientific concepts (for example, socialization). *European Journal of Social*, 7(1), pp. 278-289.
- Mameteva, O.S. (2016). *Theory and practice of development of professional thinking in the study of the course "Social Pedagogy"*: monograph. Magnitogorsk.
- Potrikeeveva, O.L. (2001). *The development of professional-pedagogical culture of students at the Faculty of Social Pedagogy*. Candidate thesis for the degree of candidate of pedagogical sciences. Magnitogorsk.
- Potrikeeveva, O.L., Mustaeva, F.A. (Eds.). (2013). *Social well-being of the family. Modern Russian family: the contradictions of functioning and development*: monograph . Magnitogorsk: Magnitogorsk State University. 292 p.
- Rashchikulina, E. N. (2011). Complementarity of knowledge and self-knowledge in the development of professional pedagogical thinking of students. *Higher Education Today*, 11: 57-59.
- Rashchikulina, E. N., Stepanova, N.A., Kondrashova, E.N., Tuguleva, G.V., Ilyina, G.V. (2013). *Continuing education during childhood* . Col. monograph. Magnitogorsk: MAGU Press.