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STRUCTURAL COMPONENTS AND FUNCTIONS OF DESIGNING ACTIVITIES OF FUTURE HIGH SCHOOL TEACHERS

Abstract. L. V. Lebedyk. Structural components and functions of projecting activity of future high school teachers. The article analyzes the basic structural components and functions of the projecting activities of future high school teachers in the context of a competency approach.

Purpose of the article is a analysis of the basic structural components and functions of the design activities of future high school teachers in the context of a competency approach.

Scientific novelty of the research: the author has theoretically substantiated and experimentally tested the scientific and methodological system of high school teachers' preparation for design activities in the conditions of magistracy, which is the orderly unity of interdependent and interconnected integral structural and functional subsystems and components that are joined together by a common purpose.

Research methods: theoretical (generalization, analysis, systematization of philosophical, psychological and pedagogical works of domestic and foreign authors from the affected problem in order to determine structural components and functions of the projecting activity of future high school teachers) and empirical (diagnostic – questionnaires, conversations, interview, testing; observational – retrospective analysis of own pedagogical practice, participant observation).

Research results: structural components system of preparation for the project activity of future high school teachers is highlighted.

Conclusion. Through the analysis of teacher's functions (organizational, communicative, informational, constructive, prognostic, etc.), the requirements for design activity, projecting knowledge, skills and abilities are revealed.

Perspective directions for further researches consist in the analysis of the scientific and methodological system of professional pedagogical preparation of the teachers of the high school for the projecting activity and its effective realization.

Keywords: projecting activity future higher education lecturer, higher education, training for didactic systems designing, design activity, system, components, functions, criteria, indicators.

Relevance of the problem. A peculiar challenge of the information society, confirmed by the entry of the higher education system of Ukraine into the European educational space, is the need to design a new higher education system. Therefore, the problem of preparing future teachers in higher education to fulfill their functions of projecting activity is of great social and scientific importance. Teachers' projective activity and implementation of didactic systems projects of training specialists becomes, because of their importance, the subject of study of professional pedagogy.

The practical tasks of transition of the higher education system in Ukraine from the existing state to another, corresponding to world standards, require a theoretical solution to the problem of future teachers preparation for design activities. The pedagogical theory has been tasked with identifying the structural components and projecting activities functions of future teachers and developing concepts, paths, mechanisms and technologies that will provide a meaningful transition.

The analysis of the last researches and publications showed that the research of structural components and functions of projective activity of future teachers in higher education can be based on theoretical and methodological works

on didactics of higher pedagogical education A. Aleksyuk, S. Goncharenko, R. Gurevich, I. Ziazun, V. Kremenya, O. Savchenko S. Sysoeva, L. Khomich, etc.; works on designing the systems of pedagogical training of specialists O. Bezpalko [1], O. Kobernik [2], I. Konovalchuk [3], O. Naboka [6; 12]), T. Podobedova [7], G. Romanova [8], V. Strelnikov [9-11], I. Trubavina [12] and others.

However, the issues of improving the design activity of future high school teachers in general and the identification of the structural components and functions of this activity in particular stay out of the limelight of the researchers.

Purpose of the article is an analysis of the basic structural components and functions of future high school teachers' design activities in the context of a competency approach.

The organization of future teachers' preparation for design activity in the conditions of magistracy required the decision of tasks to create:

- a system of organizational structures in which all its subjects are focused on achieving the goal of this training;
- a target management system of this training;
- appropriate learning environment;
- behavior pattern of the subjects of this training based on educational space mental characteristics, attraction of motivation, rational use of working time, etc.

Taking into account the structural components and functions of the projecting activities of future high school teachers helps to ensure the project orientation of the specified preparation, logical correctness, optimization, adaptability, functional completeness of implementation, sequence of its stages, stability, flexibility, and flexibility.

Scientific novelty of the research consists in theoretical substantiation and experimental verification of scientific and methodological system of professional pedagogical preparation of future teachers in higher school for design activity in the conditions of magistracy, which consists of ordered unity of interdependent and interrelated integral structural and functional sub-systems schools to design activities.

Research methods:

- *theoretical*: generalization, analysis, systematization of philosophical, psychological and pedagogical works of domestic and foreign authors from the affected problem in order to determine structural components and functions of projecting activity of future high school teachers;
- *empirical*: diagnostic (questionnaires, conversations, interview, testing), observational (retrospective analysis of own pedagogical practice, participant observation).

Presenting basic material. *Structural components* of the projecting activity of future high school teachers, based on their interconnectedness, the nature of the interaction of its subjects, continuity and sequence, are: psychological and pedagogical diagnostics of its initial state; social and psychological diagnostics of psychological and pedagogical situation of its functioning; identification and justification of pedagogical ways of influencing the process of achieving its desired state; forecasting the dynamics of the specified training; determination stages of control diagnostics; modeling, planning and organization of this training; monitoring its dynamics; regulation and correction the ways of its management; final diagnostics the level of preparation of future teachers for design activity in the conditions of magistracy, comparison with predicted; development the project for a new stage of development of the specified preparation (by O. Kobernik [2]).

In addition to the given sequence of teacher's preparation for designing, the scientific researches offer various phases, designing stages, which are important for the projecting activities organization of future teachers in higher education [5, p. 183-184]:

- divergence (providing a wide range of solutions by expanding the boundaries of the project situation), transformation (creating concepts and principles of design), convergence (based on the set of alternative solutions the choice of its optimal option) (N. Yakovleva);
- modeling, design and construction (V. Bezrukov);
- theoretical (creation of the project in theory), reflection, experiment

(approbation, partial implementation), correction (refinement of the theoretical project), final (implementation of the project) (N. Nikchalo);

- ascertaining and evaluating the results of educational activities, hypothesizing the influence of factors of the educational process on its result, building a pedagogical system for a specific HEI, constructing a special project of the pedagogical system, selecting methods for measuring their parameters, comparing the results of measuring the functioning of these systems, constructing the optimal system (V. Ginetsinsky);

- invention, creation of prototype unit, experimental study of its efficiency, final design of the project (N. Yakovlev);

- prediction of the model of teacher's preparation for designing and its structural and semantic components, determination of approaches to its designing and realization in given external conditions, creation of a set of documentation, project variants proposals, purpose designing, tasks and content of training, teachers' professional development and professional competence, improvement of educational and material base, selection of training technologies, choice of management and control system for the functioning of this training, correction (V. Harabet);

- goal setting, input diagnostics, forecasting and modeling, programming and planning, correction and regulation (O. Kobernik);

- analysis of the initial data (conditions of teaching a certain discipline, the system of knowledge, skills and qualities of the individual, which are formed and developed in the training module, initial and resultant levels of preparation, the general outline and nature of the content of the discipline), goal setting didactic system in the form of predicted outcomes, selection and construction of content and optimal forms of its presentation, determination of structure and sequence of learning technologies as educational activity of the undergraduate in mastering the content of educational discipline, the selection of appropriate technologies aim and content of training, development the criteria and parameters of evaluation the training results, development control instruments (V. Strelnikov).

These stages of design are present in the process of preparing future high school teachers for design activities in terms of magistracy. They are characterized by unity, interdependence, interconnection and continuity.

Mastering master's stages of design activity required a technological mechanism for their practical implementation. The main components of this mechanism are: psychological and pedagogical diagnostics the input state of the projecting skills; social and psychological diagnostics of psychological and pedagogical functioning conditions of the specified training; identification and substantiation of pedagogical means of influence on the state of projecting skills and specification of tasks for projecting activity preparation; determination of control diagnostics stages and prognosis of activity dynamics of the undergraduate in higher education pedagogy under the influence of applied teaching technologies; planning, modeling, implementation of the undergraduate teaching technologies; monitoring the dynamics of design skills; current regulation and correction the ways of managing preparation for project activity; final diagnostics the projecting skills and comparing them with predicted ones; project development for a new stage of development. The peculiarity of the mechanism structure was that each previous component was the basis for the next one.

International ISO standards have helped to refine the algorithm for preparing future high school teachers for design activities by: identifying target consumer groups for specific training and identifying their requirements; identify processes; to form a distribution of powers and responsibilities matrix for the quality of preparation the future high school teachers for design activities; describe processes according to these requirements and the like.

Requirements for design activities, projective knowledge, skills and abilities are revealed through the analysis of the teacher's functions (organizational, communicative, informational, constructive, prognostic, etc.). Researchers emphasize on the goal projection of the teacher's activity, its gradual achievement, the operating system of influences, sufficient controllability and predictability of the educational process (I. Beh); pedagogical activity projecting as construction of

a model of subjects interaction of the didactic system, the correction of which is due to pedagogical foresight, forecasting of the interaction process of these subjects and its results (O. Kobernyk) [5, p. 187].

The search for a system of criteria for students' readiness for design activities was carried out taking into account the basic concepts of a research thesaurus. Design activities are carried out by undergraduates through the mechanisms of self-organization, self-knowledge, self-education as an aspiration for professional and creative self-realization, therefore the emphasis is placed on the concepts: "personality orientation for projecting activity", "personal motivation of the undergraduate to project activity", "didactic systems", "professionally important character traits for design activity", "psychophysiological qualities for design activity" and "creative skills for design activity", where creativity is a way of intensifying the design process.

The systematic approach offers the following criteria and indicators of teacher's readiness for design activities: 1) independence, which is a prerequisite for the teacher's preparation in terms of the magistracy for design activities, provides the following indicators: the ability of the future teacher to adequately assess the level of their own design skills, professional motivation and learning, satisfaction with the results of their activities; the ability to rationally organize and plan its design activities, to carry out its self-regulation, organizational and communicative abilities during collective projecting activities; independent mastering of knowledge, abilities and skills of projecting activity, expansion and deepening of professionally significant abilities and qualities to projecting activity, readiness for professional restoration; 2) professionally oriented thinking, the ability to use the techniques of projective activity, to develop tactics and strategy of projective actions, provides indicators: rational-logical thinking (the ability to identify patterns and rules of projective activity; holistic vision, system analysis and prediction of didactic system); meaningful professional memory (developed mnemonic abilities that perform the functions of preserving information that is important for projective actions, active mental processing, establishing logical and

associative connections in projecting actions); verbal abilities (professional and semantic understanding of the problem of projective activity, verbal thinking and ability to present the projected didactic system in professional dialogue); 3) creative attitude to design activity, developed ability to innovate in designing didactic systems, provides indicators: intuitive thinking and creative imagination; figurative memory; acting (the art of reincarnation, language improvisation, influence on one's personality through communication, ability to empathize); 4) value orientation on projecting activity, provides indicators: setting for self-improvement; aspiration for creative self-realization; motivational focus on subject-subject interaction in the didactic system; 5) development level of professional abilities and qualities necessary for designing activity, provides indicators: civic maturity, high moral standard; developed ability to innovate in designing didactic systems; readiness for equal communication with students; reflexive self-regulation; improvisation in actions, will, organizational flexibility; algorithms of information search possession and methods of analytical and synthetic information processing; technologies of preparation possession and registration of results of projecting activity; information literacy; ability to master software products; 6) ability to design didactic systems with the use of innovative and information technologies of training, provides indicators: knowledge of the possibilities of new information technologies of training; the ability to adapt and apply software to the specific features of the didactic system [11, p. 307-309].

For successful preparation of future teachers for design activities in the conditions of the magistracy, the criteria and indicators are applied to the maximum extent in the preparation programs of masters of direction 01 "Education", specialty 011 "Educational, pedagogical sciences", educational program "Pedagogy of higher school", reflecting the levels and the skill required for design activities.

The training of high school teachers in the magistracy was directed not only to the knowledge of the components of the design activity, but also to the creation of projects of these systems that can be implemented in practice. The complexity

of projecting in the activity of a future teacher is to combine knowledge about the student's activities with knowledge about the possibilities of the didactic system for the formation of complex compositions of different types of knowledge, their unification and differentiation according to the schemes of reflexive activity, and not according to the schemes of the object (G. Shchedrovitsky) .

Conclusion. Therefore, the system of functions of projecting activity of future teachers in higher education consists of: analysis of the existing educational situation, identification of problems, contradictions, formulation of the purpose and motivation of his and his students' projecting activity, finding ways to achieve the goal, in accordance with the new goal of designing his own didactic system in accordance with the new didactic system, realization of examination and reflection of his and his students' work results.

In the future professional work of the undergraduate design is important for the substantiation and implementation in practice of theoretical developments. Only on the basis of a critical analysis of the current didactic systems, their results, students and the teacher's activities, will the undergraduate be able to develop his own project of the didactic system. The future teacher of the high school, relying on the experimental prediction of the result of his didactic system, completes his research, embodies the object of his projection.

Perspective directions for further researches the ways of preparation of the future teacher for designing in the conditions of the real educational process in the magistracy, stages and mechanisms of designing and introduction of didactic systems require the analysis of the scientific and methodological system of professional pedagogical preparation of teachers in higher school for designing activity and its effective realization.

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