

**ORGANIZATION AND METHODS OF EXPERIMENTAL TESTING THE
MODEL OF MANAGEMENT OF FORMING A PROFESSIONAL
COMPETENCE OF THE MASTERS OF PEDAGOGIC OF HIGH
SCHOOL**

Summary. *The article deals with the organization and methodology of experimental research of testing the model of management of forming a professional competence of the masters of pedagogic of high school. The key objectives and stages of experimental work are characterized.*

Keywords: *professional competence, competency-oriented management, a model, the official examiner, molding, control experiment.*

Formulation of the problem. The analysis of modern higher education shows a growing need for the implementation of competency-oriented training of future professionals. Such preparation is important for the masters in "Pedagogics of Higher School", as the university's lectures should be providers of a competence-based approach.

Analysis of recent studies and publications. About the introduction of competence-based approach [1, 3, 4, 5, 7, 9, 12 and 13], managing higher education institutions, including vocational training of future professionals [2, 8, 10, 11, 14; 15] made it possible to develop and scientifically justified methodology of management formation of professional competence of the masters in pedagogy of high school, to develop a model and define the conditions and means for its effective implementation [6].

The aim of the article is to outline the methodology of experimental research of testing a model for managing the formation of professional competence of the masters in pedagogy of high school.

The main material. The purpose of the experimental work consisted in testing the model of competence-oriented management of professional training of the masters in pedagogy of high school with the identified conditions for its effective functioning. The object of the pilot study was the process of formation of professional competence of the masters in pedagogy of high school, the subject - a model of competence-oriented management of professional training of the masters in pedagogy of high school.

The hypothesis of experimental work consisted in the fact that the implementation of a model of competency-oriented management of professional training of the masters in pedagogy of high school with the pedagogical conditions for its effective functioning will lead to a positive impact on the dynamics of forming the professional competence of the masters in pedagogy of high school.

The theoretical and methodological basis of the research was the basic concept of educational philosophy and the modern management paradigm of educational institutions; the provisions of personal-centered and system approaches to human development as a subject of activity; regularities of social systems development; a theory of general and pedagogical management; a theory of universities' management as social systems; a provision of objective relationship of higher education with the socio-economic changes taking place in society; the principle of unity of theory and practice that ensures the objectivity of theoretical, empirical and experimental study of objects and phenomena; the Law of Ukraine "On Education", "On Higher Education", "On scientific and technical activities", National Doctrine for development of Education in Ukraine in the twentieth century; Conceptual Foundations of education in Ukraine and its integration into the European educational space; the Regulation on the implementation of innovative educational activities; regulations that reflect the requirements for accreditation of higher education institutions.

The tasks of the experimental work of implementation of a model of competence-oriented management of professional training of the masters in pedagogy of high school were identified as follows:

1. To develop and to implement a model of forming the professional competence of the masters in pedagogy of high school.

2. To substantiate the methods that were used in the experiment.

3. To examine the effectiveness of a model of competency-oriented management of professional training of the masters in pedagogy of high school.

4. Highlight the problems and contradictions that need to be resolved using the further development the system of management of competency-oriented training of the masters in pedagogy of high school.

5. To develop the academic and methodical recommendations for the implementation of a management model of forming the professional competence of the masters in pedagogy of high school in the practice of professional training of future professionals in higher education.

The development of methodology for experimental testing the management model of forming the professional competence of the masters in pedagogy of high school carried out according to defined goals, object, subject, theoretical and methodological principles and tasks of the study.

Teaching experiment took place during the 2005-2013. The main stages of the experiment were: search and analytical modeling, experimental, evaluative, reflective.

During the search-analytical stage of the experimental work the theoretical analysis of philosophical, sociological, psychological and educational literature was made to examine and determine the level of the problem. Theoretical material of the features of forming masters' professional competence of pedagogics of high school was analyzed, a high school experience in organization a management of teachers' professional training was studied, the main objectives of the study was defined. The results of this stage are reflected in the development of teaching aids, educational programs, the tasks for independent work of students for the disciplines "Forming the professional competence of future high school teachers", "Academic regulations on the basis of competence-based approach", "Scientific

basis of educational technology" for the masters of 8.18010020 "Management of educational establishment" and 8.18010021 "Pedagogy of high school."

The analysis of search and analytical work led to the conclusion that the introduction of competence-based approach in higher education requires the development of a competency model of the future teacher of high school, update the management mechanisms in the implementation of its training. All this things led to the relevance of modeling stage of the study.

A modeling stage of experimental work served for developing a model of management of forming the professional competence of masters in pedagogics of high school, for distinguishing criterion indicators of the effectiveness of competency-based management of training the masters in pedagogics of high school, the qualimetric evaluation model of management efficiency was developed. At this stage of the pilot study a categorical apparatus was clarified, the definitions of research was comparing, the conceptual approaches were identified, the laws and management principles of forming the professional competence of the masters in pedagogy of high school, the technology for its implementation was developed; the conditions and means of competency-based management implementing were allocated.

During the experiment an updated curricula in specialty 8.0010021 "Pedagogy of high school" was testing and implementing. The level of forming the professional competence of graduates and the level of student satisfaction of training process was monitored systematically. A quantitative and qualitative analysis was used to correct research methodology.

Experimental stage of the study had an ascertain experiment aimed at studying educational phenomena in terms of the existing structure factors; a forming experiment which determines the dynamics of the studied pedagogical phenomena in the active influence of the researcher on the conditions of reality; summarizing the results of experimental work.

An ascertain experiment was conducted for elucidation the level of management of the masters professional training in pedagogy of higher school with the help of research methods of higher educational institutions.

According to research problems on stage of an ascertaining experiment, the following procedures were carried out:

- studying the process of preparing the masters in pedagogics of higher school and the opportunities of competency-based management of this process;
- creation a plan of the experiment which is adequate with the conditions of the studying;
- development of basic procedures of experimental work in accordance with the selected plan: 1) identification the criteria and indicators of effectiveness of management of forming the professional competence of the masters in education of high school; 2) determination the methods of diagnosis; 3) determination the level of forming the students' professional competence on the basis of identified criteria and indicators.

The basis of the experimental work was the National Technical University "NTU" and University of Educational Management of NAPS of Ukraine. During the studying in the primary survey 209 leaders of higher educational institutions, the students of training courses of CIPPE (rectors, vice-rectors of academic work, vice -rector of scientific and technical work, vice-rector of research work and international cooperation, directors of the institutions (deans of faculties), vice-directors of the institutions (deans of faculties)), 38 heads of the departments, 460 students from different universities of the country were involved.

An ascertaining part of the experimental work consisted of two phases: the first stage was carried out the analysis of documentation of work and education with the training the masters in pedagogy of high school, the standards of higher educational institutions (variable component of qualification characteristics and educational and vocational programs, curricula), the activities and a content of higher educational institutions to improve the effectiveness of training the masters in pedagogy of high school. The interviews with university's leaders, the heads of

the departments and teaching staff to improve the effectiveness of training the masters in pedagogy of high school were conducted; a real condition of preparing the students for future scientific and educational activities was studied; on the second stage the condition of teachers' and masters' mindfulness the features of university's professors professional activity, the nature of his professional competence was identified, a satisfaction level of the masters in pedagogy of high school with the process of training was assessed.

The results of the ascertaining experiment caused to features of forming experiment which was directed to implementation the developed model of the formation of professional competence of the masters in pedagogics of high school. The essence of forming experiment was the creation the conditions in the experimental universities to form the professional competence of the students and to determine the effectiveness of the proposed model in comparing with the control university.

The program of the pilot studying included:

- the distribution the functions of competency-based management according to the balanced matrix structure, identification of subjects of management;
- update the content of graduate training in pedagogy of higher school (curriculum, educational and job description, educational and vocational programs, curricula guidelines for courses);
- lecture and seminars, workshops in subjects: "Formation of professional competence of future teachers of high school", "Academic Regulations on the basis of competence-based approach";
- developing and conducting training for the masters in pedagogy of high school using innovative technology and interactive teaching methods aimed at professional and personal development of the students;
- developing and conducting methodological seminars for teaching staff on topics UMO "Conceptual principles of a competency approach in education", "Professional competence of teacher of high school", "The features of professional teacher's activity of high school", "Management of educational innovations in public

transformation”, “Fundamentals competence-oriented management of masters’ professional training in pedagogy of high school”;

- management of students’ research work on the issue of implementation of competence-based approach to education and management of competency-oriented training of future professionals in high school;
- the organization attract of the masters to the project activity during the studying at high school;
- active interaction with the student government to improve the quality of vocational training;
- providing facilitative support of the process of training the future university’s teachers, including regular online counseling of the masters by the instructors using the Internet;
- monitoring the level of formation of professional competence of the graduates, developing the professional important personal qualities of students, the level of students’ satisfaction in professional training;
- organization and management of the research laboratory control of forming the professional competence of the future teachers of high school.

Evaluative, reflective stage served as a research analysis of the pedagogical experiment of hypotheses about the feasibility of developing a management model the formation of professional competence of the masters in pedagogy of high school to formulate the general conclusions of the research and to develop the research and methodical guidelines of implementation of the proposed model in management activity of higher educational institutions.

For the pilot study we have chosen the following methods: theoretical, empirical and statistical.

Using the theoretical methods helped to determine the external manifestations of psychological and educational effects of their substance, to find general and special in a single, to reveal the internal connections and regularities of management of forming the professional competence of the masters in pedagogy of

high school. Among them: analysis and synthesis, abstraction and concretization, generalization, comparison, modeling.

The analysis was the initial stage of the experimental work, which resulted in a transition from a general description of the object and process of competence-oriented management of the masters' professional training in pedagogy of high school to identify its specific, internal structure, parts and components. The correctness of the analysis was tested in the synthesis and comparison of the features, properties, characteristics of the newly created object and the object to the original hypothesis. The study used the following forms of analysis: classification, analysis of the relationship, casual and dialectical.

The classification analysis served as the initial descriptive stage of research to compile and systematize information, facts, knowledge about the management of professional training of future teachers of high school based on similarity, compatibility, repeatability.

The deep understanding of the phenomena, the study of the process of development by decomposition into separate subject of study and research of the relationship between them, the detection of functional dependency was analyzed.

The casual analysis provided establishing of a causal link between the studied phenomena, the discovery of significant relationships that are their causes, knowledge of the laws and regularities.

The dialectical analysis involved consideration of the phenomenon of universal relationships and development that comes from the understanding of reality as a whole made up of interdependent parts.

The synthesis was using because of the necessity of rational combination of different parties, a part of the studied phenomena selected by analysis. The synthesis enabled to reproduce the phenomenon in general, the system of his most important relationships. The use of synthesis formulated a new vision of the nature of competence-oriented management of masters' professional training in pedagogy of high school, which marked its main characteristics.

During the experimental work the analytical and synthetic activity was carried out during the collection and processing of data obtained in the study, revealing connections between them. The method of analysis and synthesis has allowed isolating the objective content of subjective educational activities of the participants - managers, teaching staff, the students, identifies inconsistencies and contradictions in the process of training and management, to predict the development of educational systems.

The method of analysis and synthesis is closely linked with the methods of abstraction and detail. The abstraction implies that the insights of pedagogical phenomena, identifying invariant features of the process under study to identify the subject matter of a "pure" dissociate themselves from all the side effects, aside from all the numerous connections and relations that impede see the point. Given that the training of the masters in pedagogy of high school is characterized by complexity and multiplicity of factors that determine the course of the educational process, abstraction leads to the creation and use in experimental models of ideal, allowing correlate the image with reality, to identify and further investigate the factors from which in this case abstracted.

Using the detail in the experimental work as a process of ascent from the abstract to the concrete made it possible to more accurately describe the object of study, to take into account structural and functional relationships of its components.

The method of generalization during the studying provide a logical transition from the individual to the universal, from the less to the more general knowledge, the establishment of common properties and characteristics of objects. Using this method made it possible to obtain the conclusions on the experimental work, developing the research guidance of the implementation of models of management the formation of masters' professional competence in pedagogy of high school.

Comparison - a method which is the comparison of the studied subjects and establish their similarities or differences. This method was carried out comparing the experimental data obtained at the beginning and end of the experiment to

identify the effectiveness of the developed model of competence management of masters' professional training in pedagogy of high school.

The method of simulation in the pilot studying used for fixation the main features of the studied species of management. Using this method involved the construction the model of management of formation of masters' professional competence in pedagogy of high school as a systemic interaction of its methodological, semantic and technological components.

As an empirical pedagogical research methods were defined as follows: the study of scientific and technical literature, the documents and the results of activity, observation, survey, interview, educational experiment.

The study of scientific and technical literature, the documents and the results of activity used to obtain initial information on the early stages of research for a demonstration object. Using this method served to analyze the history and current state of the problem made it possible to separate the known and unknown, to explore controversial provisions, a primary understanding of the problem and how to solve it, identify gaps and ambiguities in the handling of the issue. With this method at baseline was studied a modern state formation control of the problems of masters' professional competence in pedagogy of high school, formulated , tested and refined the basic concept study by comparing different views on problems of management training of future professionals in high school, found inconsistencies in the examined problem. On the next stages of the study using this method served to clarify and adjust hypotheses of the research, its objectives and logic separation of unknown problems in the study. It led to scientific novelty solving actual problems of management training of future teachers of high school.

Actual source material for the study served the regulations that provide activities of higher education, the universities' documentation (Higher Education industry standards, and divergent components of masters' professional training in pedagogy of high school, the curriculum, the protocol of meetings of scientific councils, faculty meetings, engaged in direct preparation of future teachers of high

school, credits, exam information, the protocol of meetings of the State Examination Committee).

During the experimental study of using the method of observation made it possible to obtain data required for the further construction of the theoretical and methodological principles of management of formation the masters' professional competence in pedagogy of high school and their subsequent testing in practice, provided a theoretical study of empirical data, verification of the adequacy and validity of the theory in practice; made it possible to study objects in their entirety, in its natural functioning. This method was carried out a detailed study of masters' training in pedagogy of high school and its management to obtain a holistic understanding of these processes. The focus of the study was paid to monitoring the professional and personal development of the masters in the course of training. These results served as the basis for the synthesis and interpretation of theoretical and practical data.

Conversation as a method of teaching research used to obtain the information about the phenomenon or process to know the psychological characteristics of the student's personality, the character and the level of their knowledge, interests, beliefs, aspirations, attitudes to reality.

The polls during the experimental work involved raising the questions about certain aspects of the problem of increasing the efficiency of formation of masters' professional competence in pedagogy of high school. The sources of required information using this method were leaders, scholars, educators and students. The survey gives the information about as the events and facts and opinions and estimates of respondents.

Questioning the leaders, teaching staff and students provided the collection of primary information of their understanding of the nature of professional competence of a high school teacher, having to update management mechanisms in high school, to implementation of the competence-based approach in education and clarification the students' level of satisfaction of professional training.

The expert assessment was used for the separation and determination of the degree of importance of factors that affect the educational process being studied. This research method associated with attraction to the evaluation of the studied phenomena, the most competent people, whom thought, check and complementing each other, make it possible to objectively characterize the phenomenon that is studied. In our research by peer review determined the weight of parameters, factors and criteria when developing qualimetric models of evaluating the effectiveness of competency-based management.

Given that the qualitative characteristics of pedagogical phenomena obtained by theoretical methods of the research will be more complete and profound if the empirical material subjected to proper quantitative treatment, the study of the management of forming the future teachers' professional competence of high school used statistical methods. The applied computer program SPSS for Windows 16.0 was used for calculation of statistical indicators and charting.

Conclusions. The experimental testing of the management model of forming the masters' professional competence in pedagogy of high school, which demonstrated the effectiveness of the developed model, was conducted due to present organization and methods of teaching experiment.

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