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Maryna ZAHORULKO,

orcid.org/0000-0002-9677-2130

Candidate of Pedagogical Sciences,

Researcher at the Department of International Relations and Scientific Cooperation

Institute of Pedagogy of the National Academy of Educational Sciences of Ukraine

(Kyiv, Ukraine) zagorul_ko@ukr.net

DIDACTIC MODEL OF FORMATION OF RESEARCH AND DIAGNOSTIC SKILLS OF FUTURE PRIMARY SCHOOL TEACHERS

The main task of Professional Training of students of Higher Pedagogical Education Institutions is the formation of their professional competence, one of the manifestations of which is the degree of formation of professional and pedagogical skills of future teachers. The formation of future Primary school teachers' professional skills includes Social, Humanitarian, Psychological, Pedagogical, Professional And Practical Training, is a complex process that is carried out throughout the entire learning process in institutions of higher pedagogical Education.

In the article considered the models, systems, technologies, methods, forms of organization and methods of forming research and/or diagnostic skills of future teachers available in the scientific and pedagogical literature. The author theoretically substantiated the structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines.

Under the structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines, we consider an idealized representation of the process of forming the studied skills (as a unity of motivational research, cognitive-constructive, activity-project and reflexive-diagnostic components), which unfolds as a consistent implementation of interrelated component blocks: methodological and research; definition of cognitive-constructive basis; implementation of experimental and diagnostic activities; ensuring reflexivity of experimental and diagnostic activities. The implementation of the leading provisions of the competence approach in the training of future Primary school teachers makes it possible to create favorable conditions for the formation of professional and pedagogical competence in them, an integral component of which is research and diagnostic skills.

The theoretical validity of the developed structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines provides sufficient verified grounds for its experimental testing.

Key words: *structural and functional didactic model; future Primary school teachers; formation of research and diagnostic skills; experimental and diagnostic activity.*

Марина ЗАГОРУЛЬКО,

orcid.org/0000-0002-9677-2130

кандидат педагогічних наук,

науковий співробітник відділу міжнародних зв'язків та наукової співпраці

Інституту педагогіки Національної академії педагогічних наук України

(Київ, Україна) zagorul_ko@ukr.net

ДИДАКТИЧНА МОДЕЛЬ ФОРМУВАННЯ ДОСЛІДНИЦЬКО-ДІАГНОСТИЧНИХ УМІНЬ МАЙБУТНІХ УЧИТЕЛІВ ПОЧАТКОВОЇ ШКОЛИ

Головним завданням фахової підготовки студентів закладів вищої педагогічної освіти є формування їх професійної компетентності, одним із виявів якої є ступінь сформованості професійно-педагогічних умінь майбутніх учителів. Формування фахових умінь майбутніх учителів початкової школи містить в собі соціальну, гуманітарну, психолого-педагогічну, фахову та практичну підготовку, є складним процесом, який здійснюється впродовж усього процесу навчання в закладах вищої педагогічної освіти.

У статті розглянуто наявні в науково-педагогічній літературі моделі, системи, технології, методики, форми організації та методи формування дослідницьких та/або діагностичних умінь майбутніх учителів. Авторкою було теоретично обґрунтовано структурно-функційну дидактичну модель формування дослідницько-діагностичних умінь майбутніх учителів початкової школи у процесі навчання психолого-педагогічних дисциплін.

Під структурно-функційною дидактичною моделлю формування дослідницько-діагностичних умінь майбутніх учителів початкової школи у процесі навчання психолого-педагогічних дисциплін розглядаємо ідеалізоване представлення процесу формування досліджуваних умінь (як єдності мотиваційно-дослідницького, когнітивно-

конструктивного, діяльнісно-проектного та рефлексійно-діагностувального компонентів), що розгортається як послідовна реалізація взаємопов'язаних компонентних блоків: методологічно-дослідного; визначення когнітивно-конструктивної основи; реалізації дослідно-діагностувальної діяльності; забезпечення рефлексійності дослідно-діагностувальної діяльності. Реалізація провідних положень компетентнісного підходу в підготовці майбутніх учителів початкової школи уможливило створення сприятливих умов для формування в них професійно-педагогічної компетентності, невіддільним компонентом якої є дослідницько-діагностичні вміння.

Теоретична обґрунтованість розробленої структурно-функційної дидактичної моделі формування дослідницько-діагностичних умінь майбутніх учителів початкової школи у процесі навчання психолого-педагогічних дисциплін надає достатні верифіковані підстави для її експериментальної апробації.

Ключові слова: структурно-функційна дидактична модель; майбутні учителі початкової школи; формування дослідницько-діагностичних умінь; дослідно-діагностувальна діяльність.

Problem statement. Ukrainian society seeks to build a system of higher Education that would create favorable conditions for the personal professional development of future teachers, their adaptation to life in a dynamic information society, the development of creative abilities, and involvement in culture. The Education System must meet the challenges of the time and the needs of the individual. An important asset of Education should not be individual knowledge, skills and abilities, but the ability and readiness of future Primary school teachers for effective and productive professional activities in general and during experimental and diagnostic activities in particular.

The main task of professional training of students of Higher Pedagogical Education Institutions is the formation of their Professional Competence, one of the manifestations of which is the degree of formation of professional and pedagogical skills of future teachers. The formation of Professional Skills of future Primary school teachers includes Social, Humanitarian, Psychological, Pedagogical, Professional and Practical Training, is a complex process that is carried out throughout the entire learning process in Institutions of Higher Pedagogical Education.

Research analysis. Justification of the structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers required consideration of the models, systems, technologies, methods, forms of organization and methods of forming research and/or diagnostic skills of future teachers available in the scientific and pedagogical literature (O. Andriushchenko, N. Delikatna, T. Hurtkova, A. Kilichenko, N. Liubchak, O. Melnyk, O. Semenoh, K. Stepaniuk, O. Zemka).

The purpose of the article is to theoretically substantiate the structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines.

Presentation of the main material. Of great interest for our research is the structural and

functional model of the development of reflexive skills of Primary school teachers in the system of postgraduate pedagogical Education, developed by O. Andriushchenko (Andriushchenko, 2020). The scientist justifies the need to turn to the modeling method by saying that it involves the study of pedagogical objects by developing and studying their models. Under the structural and functional model of development of reflexive skills of Primary school teachers in the system of postgraduate pedagogical Education, O. Andriushchenko understands an integral system that is characterized by a schematic and descriptive character (Andriushchenko, 2020: 116). The author's model developed by the scientist consists of four interrelated blocks: social-target, content, technological and effective. In the social target block, the researcher defined the goals and objectives of developing reflexive skills of Primary school teachers. The content block is based on methodological approaches that determine the development of the studied skills, principles and pedagogical conditions. The set of methodological approaches of the scientist includes activity-based, system-based; andragogical, personality-oriented acmeological approaches. Among the principles, the scientist identifies general, andragogical and special. The general scientific principles of development of reflexive skills of Primary school teachers are defined as the principle of consistency; the principle of consciousness; the principle of systematization; the principle of consistency; the principle of Science and the principle of accessibility (Andriushchenko, 2020: 117). O. Andriushchenko refers the principle of activity and cooperation to the andragogical principles of developing reflexive skills of Primary school teachers; the principle of relying on the professional experience of teachers; the principle of contextual learning and the principle of self – Educational activity; and to special ones – the principle of reliance on the information basis of actions; the principle of dialogic learning; the principle of applying collective forms of thought activity and thought communication (Andriushchenko, 2020: 117). Within

the framework of the technological block, three stages of development of reflexive skills of Primary school teachers in the system of postgraduate teacher Education, forms of organization and methods of reflexive skills of Primary school teachers are defined. For the effective development of the studied pedagogical phenomenon, the scientist proposed to use motivational trainings, problem lectures. In addition, the scientist notes the need to create a reflexive environment and introduce a special course during advanced training courses. In the inter-course period, an important role in the development of reflexive skills of Primary school teachers is played by reflex practice, participation of Primary school teachers in trainings, seminars, webinars, master classes, consulting, online communities, as well as the implementation of self-Educational activities by Primary school teachers (Andriushchenko, 2020: 117). The performance Block takes into account the criteria, indicators and levels of development of reflexive skills of Primary school teachers in the system of postgraduate teacher Education. The main criteria for the development of reflexive skills of Primary school teachers are motivational-value, cognitive and operational-activity. The scientist identified three levels of development of reflexive skills of Primary school teachers, in particular, primary, middle and high.

Let us consider the author's structural and functional model of training Primary school teachers in the system of postgraduate Education for the implementation of dialog forms of Education, which was developed by T. Hurtkova (Hurtkova, 2021). The author's model proposed by the researcher, which is distinguished by the main features of consistency, takes into account the features of postgraduate Education of Primary school teachers and includes four interrelated blocks, in particular, target, methodological, content-technological and effective-reflexive. The target block defines the overall goal of postgraduate training of Primary school teachers, taking into account the current regulatory framework. The methodological block of the model is based on certain methodological approaches and principles of training. Among the methodological approaches, the scientist distinguishes systemic, acmeological, andragogical, innovative, competence-based, contextual, activity-based and reflexive. Following O. Andriushchenko (Andriushchenko, 2020), T. Hurtkova notes that postgraduate training of Primary school teachers should be based on general scientific, andragogical and special principles (Hurtkova, 2021). In the content and technological block of the model, the main forms, types of work and

means of training are defined in the course and inter-course periods, as well as during the implementation of self-Educational activities; organizational and pedagogical conditions for the formation of readiness of Primary school teachers to implement dialog forms of training. Important forms and types of work in the inter-course period include trainings, master classes, group projects, creative groups, competitions, creation of laboratory classes (Hurtkova, 2021: 9). During self-Educational activities, teachers were invited to participate in webinars, group consultations, and online communication. The effective-reflexive block of the model reflects the criteria, indicators, and levels of development of Primary school teachers' readiness to implement dialog forms of learning.

Studying the issues related to the improvement of training of students of pedagogical specialties, O. Semenoh and O. Zemka come to the conclusion that research skills are formed during training in a pedagogical institution of higher Education and it is on them that the readiness of future teachers of Ukrainian language and literature to conduct research activities depends. Scientists note that the basis for the formation of research skills of future word teachers should rely on the leading ideas of certain methodological approaches, namely: personal activity, synergetic, competence, contextual, cultural, axiological and textocentric. Thus, the implementation of the basic principles of a personality-oriented approach in the formation of research skills among future word teachers provides, firstly, the possibility of creating an individual Educational learning trajectory for each individual student, and, secondly, the choice of effective innovative and traditional learning technologies that contribute to the development of their creativity and individuality. The application of a synergistic approach makes it possible to study the achievements of cooperation between all subjects of the Educational process and predict the patterns of further formation and development of the studied skills. Taking into account the fundamental provisions of the competence approach in the formation of research skills of future word teachers ensures their acquisition of a certain set of knowledge, skills and abilities, which provides an opportunity for creative performance of professional activities at the level of world standards. The theoretical and methodological block, which provides for taking into account the social order for the training of future teachers of Ukrainian language and literature, defines the purpose, methodological approaches and principles of training that effectively contribute to the formation of research skills. Among the principles of teaching, scientists distinguish general didactic, general methodological and specific ones.

The operational-reflexive block provides for stages in the formation of research skills of future word teachers: actualization, search-creative and research-reflexive stages, and determines the forms of Organization of Educational activities, methods and means of forming the phenomenon under study. The actualization stage, which contributes to the formation of emotional and personal interest of students in research activities, is based on the implementation of multi-level tasks, preparation of essays-reviews in certain academic disciplines, participation in the work of scientific circles, student conferences, Olympiads. During the search and creative stage, students perform course research, research tasks; prepare research papers-reviews, annotations; participate in the preparation of research projects, the work of circles; study advanced pedagogical experience, etc. The research and reflexive stage is aimed at future teachers-word teachers performing research tasks, theses; preparing scientific articles; passing pedagogical practice; participating in student scientific and practical conferences and competitions of scientific papers, etc. An effective block aimed at developing criteria and diagnostic support for the formation of research skills in future word teachers. Scientists have identified three levels of manifestation of the formation of research skills: low, medium and high (O. Semenoh, O. Zemka, 2014).

K. Stepaniuk proposed the model of formation of research skills of future Primary school teachers in the process of project activity includes three interrelated blocks, in particular, theoretical, operational-activity and criterion-evaluation. The theoretical block defines the purpose, methodological approaches, principles and organizational and pedagogical conditions for the formation of research skills of future Primary school teachers in the process of project activities. The methodological approaches that form the basis for the development of the model, the scientist refers to a set of leading ideas of activity, technological and competence approaches. The scientist also notes that the training of future Primary school teachers in Pedagogical Institutions of Higher Education should be based on the principles of scientific, systematic, Educational interaction, Educational reflection and intersubject (Stepaniuk, 2012: 9). The components of the operational and activity block of the model of formation of research skills of future Primary school teachers in the process of project activities are defined stages, methods, forms and means of training, Educational and content resource of training, pedagogical practice, implementation of research work, as well as participation in the work of the scientific circle. For the formation of various types of research skills, the implementation of the proposed

model provided for passing three consecutive stages: preparatory, project-search and Educational-professional. The preparatory stage was aimed at developing organizational and search skills. During the design and search stage, cognitive-operational and technological-design skills were formed. During the Educational and professional stage, attention was focused on the formation of technological design and communicative-reflexive research skills in future Primary school teachers. Criteria, levels, monitoring and predicted result of the formation of research skills of future Primary school teachers in the course of project activities are assigned to the criterion-evaluation block of the author's model.

N. Delikatna is also engaged in improving the training of future Primary school teachers in the conditions of a Pedagogical Institution of Higher Education. The researcher has developed a model for the formation of constructive and constructive skills in future Primary school teachers. In the structure of the didactic model proposed by the author, four functional and structural components are distinguished.

The first component – methodological and attractive-includes four sub-components that are manifested in the strategic goal and specified goals; methodological approaches, principles of formation of constructive and constructive skills in future Primary school teachers and didactic conditions. The scientist believes that the determinant in the formation of constructive and projective skills of future Primary school teachers is a set of the following methodological approaches: competence (as a guide), personality-oriented, activity-based and axiological (as subordinate) (Delikatna, 2021: 119–120). N. Delikatna refers to the principles of forming constructive and constructive skills in future Primary school teachers “the principle of learning based on a problem situation, the principle of connecting learning with life, the principle of using the achievements of modern science and technology, the principle of optimizing learning, the principle of interactive interaction of learning subjects, the principle of motivation of Educational activities, the principle of individualization and differentiation of learning, the principle of functionality” (Delikatna, 2021: 125). Within the framework of the second functional and structural component of the developed didactic model, innovative forms of organization, methods, techniques and means of forming constructive and constructive skills in future Primary school teachers are determined. The essence of the third functional and structural component of the model was the introduction of certain forms of organization, methods, techniques and tools. Thus, among the effective

forms of organizing constructive and constructive activities, N. Delikatna identifies problem lectures, lectures-visualizations, lectures-discussions, lectures-conferences, seminars-discussions and seminars, conferences (Delikatna, 2021: 127-128); teaching methods of SWOT-analysis, simulation and situational games, brainstorming, project method (Delikatna, 2021: 130). The scientist also notes the need to conduct such extracurricular activities as “competitions of scientific papers, student scientific and practical conferences (Delikatna, 2021: 133–134). Moreover, independent work is important in the preparation of future Primary school teachers, according to N. Delikatna. The fourth functional and structural component of the model, which is aimed at ensuring the reflexivity of constructive and constructive activities of future Primary school teachers, provides for the determination of the necessary diagnostic tools, criteria, indicators and levels of manifestation of the formation of the studied didactic phenomenon.

The Ukrainian scientist N. Liubchak also deals with the formation of research skills and research competence of higher Education applicants. In her opinion, effective methods of forming research skills among higher Education applicants are methods of individual and group work. Thus, among the methods of individual work, the scientist distinguishes the analysis of texts; preparation of reports, scientific articles, term papers; selection of scientific sources, application of methods of Mathematical Statistics, and so on. Methods of group work that effectively affect the formation of research skills among applicants for Higher Education, N. Liubchak includes modeling, business games, working on projects, making presentations, etc. (Liubchak, 2020). Among the effective methods and technologies of forming research competence, the applicant of higher Education institutions N. Liubchak refers to lectures, seminars and practical classes, discussions, conversations, trainings, solving professionally oriented tasks, Business games, writing term papers, etc. (Liubchak, 2020).

To form the readiness of future Primary school teachers for diagnostic activities, O. Melnyk proposed a system-target algorithm for their step-by-step training. The specified system-target algorithm, which covered the integral Educational Process In A Pedagogical Institution of Higher Education, was aimed at applying certain types of activities (Melnyk, 2002). Such activities have become electives “Learn to learn. Know yourself”, a special system of Educational work, an experimental program on Pedagogy and Pedagogical Practice (Melnyk, 2002).

A. Kilichenko claims that professional and pedagogical trainings and various pedagogical games

play a significant role in the formation of diagnostic skills of Primary school teachers (Kilichenko, 2016).

So, under the structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines, we consider an idealized representation of the process of forming the studied skills (as a unity of motivational research, cognitive-constructive, activity-project and reflexive-diagnostic components), which unfolds as a consistent implementation of interrelated component blocks: methodological and research; definition of cognitive-constructive basis; implementation of experimental and diagnostic activities; ensuring reflexivity of experimental and diagnostic activities.

The first component block of the author's model is Methodological and Research. Within the framework of determining the content of the Methodological and Research block of the developed model, the strategic goal and specified goals of training future Primary school teachers in Pedagogical Institutions of Higher Education are defined; the methodological basis for the process of forming research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines; principles and a set of didactic conditions (leading and subordinate) for the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines. The strategic goal is to develop the Professional and Pedagogical Competence of future Primary school teachers. The specified goals provide for: the formation of research and diagnostic skills as a basic basis for the development of Professional Competence of a future Primary school teacher; development of didactic and methodological support for the process of systematic formation of research and diagnostic skills of future Primary school teachers; activation of research and diagnosis of Pedagogical (didactic) Processes in the Psychological and Pedagogical Training of future Primary school teachers. The methodological basis of the process of forming research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines is a set of competence-based, personality-oriented, activity-based and axiological approaches. The implementation of the leading provisions of the Competence Approach in the training of future Primary school teachers makes it possible to create favourable conditions for the formation of Professional and Pedagogical Competence in them, an integral component of which is research and diagnostic skills. Compliance with the basic ideas

of a personality-oriented approach contributes to the comprehensive development and self-development of future Primary school teachers, the formation of a thorough system of theoretical knowledge, practical skills and abilities that ensure the effective implementation of their experimental and diagnostic activities in practice. The activity-based approach is reflected in the active involvement of future Primary school teachers in research and diagnostic activities, as well as the creation of favourable conditions necessary to ensure the formation of a high level of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines. The axiological approach provides for the formation of positive motivation and value attitude of future Primary school teachers to Professional and Pedagogical activities aimed at effective and effective training and Education of the young generation of Ukrainian citizens at the stage of Primary Education. Based on the analysis of approaches of Ukrainian scientists to improve the training of future Primary school teachers, a set of didactic conditions for the formation of research and diagnostic skills in them in the process of teaching Psychological and Pedagogical disciplines is determined and justified, namely: the leading didactic condition is the integration of self-Educational and academic activities of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines on the basis of increasing the research component; subordinate didactic conditions: individualization of the learning process of Psychological and Pedagogical disciplines as a means of providing a need-motivational basis for the formation of research and diagnostic skills of future Primary school teachers; creation of an IT-didactic environment for the formation of research competence of future Primary school teachers; strategization of the learning process of Psychological and Pedagogical disciplines; activation of experimental and reflexive activity of students-future Primary school teachers.

Conclusions. The main principles of the formation of research and diagnostic skills of future

Primary school teachers in the process of teaching Psychological and Pedagogical disciplines include: learning based on a problem situation; the connection of learning with life; the use of achievements of modern science and technology; optimization of learning; interactive interaction of learning subjects; motivation of Educational activities; individualization and differentiation of learning; functionality. The second component block of the presented author's model is the definition of the cognitive – constructive basis for the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines. The definition of the cognitive-constructive basis provides for the modernization of the content of Professional training of future Primary school teachers; the definition of an innovative range of forms, methods, techniques and means of forming research and diagnostic skills; the expansion and deepening of the cognitive-knowledge basis of research and diagnosis processes as didactic phenomena. The implementation of experimental and diagnostic activities of future Primary school teachers – the third component block of the structural and functional model – provides for the definition of skills in formulating the goals and objectives of experimental and diagnostic activities, forms, methods and means of experimental and diagnostic activities in the process of teaching Psychological and Pedagogical disciplines. The essence of the fourth component block of the author's model is to ensure the reflexivity of experimental and diagnostic activities, which determines the definition of diagnostic tools necessary for measuring the levels of manifestation of the formation of research and diagnostic skills in future Primary school teachers and verifying the correctness of the results of experimental work obtained

The theoretical validity of the developed structural and functional didactic model of the formation of research and diagnostic skills of future Primary school teachers in the process of teaching Psychological and Pedagogical disciplines provides sufficient verified grounds for its experimental testing.

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