STRUCTURAL-FUNCTIONAL MODEL OF A TEACHER-DEFECTOLOGIST’S PROFESSIONAL COMPETENCE FORMING IN CONDITIONS OF POSTGRADUATE EDUCATION

Abstract. In the article a structural and functional model of the system of formation of professional competence of special education teachers in postgraduate education was worked out.

Peculiarities of the structural-functional model of formation of professional competence of special education teachers in postgraduate education are: 1) by scope – research, 2) by form – informational, 3) by structure – network, 4) by level of detail – detailed, 5) according to the object of research – the model of the specialist, 6) according to the development over time – dynamic, 7) according to the degree of reproduction of the main features – functional, 8) according to the breadth of specialists’ training issues – nationwide. The interconnected structural blocks of the model of the system of formation of professional competence of special education teachers are singled out: target, semantic, result.

The content of the model is subordinated to the leading, strategic idea – the order of society for the professional competence of a specialist who works with children with SEN and their families, as well as the organization of correctional and educational process in inclusive resource centers as a new structure and preschool, general secondary, professional (vocational-technical), higher education of professionally competent specialists who have good knowledge, skills, abilities, personal qualities during training, education and development of children with SEN in educational institutions.
According to the results of scientific research, the structural blocks of the model of the system of formation of professional competence of teachers-defectologists are singled out: target, semantic, effective. These blocks are interconnected, each of them affects the next through the solution of its inherent tasks that mark the content of the next block, ie the relationship between them is manifested at the semantic and functional levels, which helps to implement the function of the whole model positive dynamics of formation of professional competence of special education teachers.

Keywords: model, pedagogical model, professional competence, special education teacher, inclusive education, postgraduate education

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СТРУКТУРНО-ФУНКЦІОНАЛЬНА МОДЕЛЬ ФОРМУВАННЯ ПРОФЕСІЙНОЇ КОМПЕТЕНТНОСТІ ВЧИТЕЛЯ-ДЕФЕКТОЛОГА В УМОВАХ ПІСЛЯДИПЛОМНОЇ ОСВІТИ

Зміст моделі підпорядкований провідній, стратегічній ідеї – замовленню суспільства на професійну компетентність фахівця, який здійснює роботу з дітьми з ООП та їх родинами, а також на організацію корекційно-освітнього процесу в інклюзивно-ресурсних центрах як нової структури, а також закладах дошкільної, загальної середньої, професійної (професійно-технічної), вищої освіти професійно компетентних фахівців, які добре володіють знаннями, уміннями, навичками, особистісними якостями під час навчання, виховання та розвитку дітей з ООП в умовах закладів освіти.

За результатами наукового пошуку виокремлено структурні блоки моделі системи формування професійної компетентності вчителів-дефектологів: цільовий, змістовий, результативний. Ці блоки взаємопов’язані, кожен із них впливає на наступний через розв’язання властивих йому завдань, які маркують зміст наступного блоку, тобто взаємозв’язок між ними виявляється на змістовому й функціональному рівнях, що допомагає реалізувати функцію всієї моделі – позитивну динаміку формування професійної компетентності вчителів-дефектологів.

Ключові слова: модель, педагогічна модель, професійна компетентність, учител-дефектолог, інклюзивна освіта, післядипломна освіта

Formulation of the problem. Today our country is in a situation of inclusive education development, which requires further solution not only of organizational and legal issues, but also the definition and implementation of scientific and methodological tasks in institutions of postgraduate pedagogical education. Inclusive education as a social and educational phenomenon is an integral part of the educational space of Ukraine and poses a number of complex and new challenges to the system of postgraduate pedagogical education.

The formation and development of professional competence of special education teachers is currently an important area of postgraduate pedagogical education. Therefore, it is necessary to develop an appropriate pedagogical model of the system of formation of professional competence of special education teachers in postgraduate education.

It is modeling, the use of which allows to “predict the development of the pedagogical process, orients teachers to achieve the end results of teaching and education, ensures the assimilation and effective use of new technologies, develops a systematic vision of problem solving, serves as an effective factor [6, P. 9]. The model of adult education provides the acquisition and improvement of knowledge throughout life.

Analysis of the latest research and publications. The problem of the pedagogical model has become the subject of scientific research by such scientists as
O. Abdullina, S. Budas, O. Goncharova, L. Kozak, Ye. Lodatko, V. Slastyonin, O. Stolyarenko, L. Podymova, G. Shtelmakh and others.

Thus, V. Slastyonin and L. Podymova model the innovative activity of future specialists. The model includes structural (motivational, creative, technological, reflective) and functional (personally motivated processing of educational programs, work planning, decision-making on the use of innovations, forecasting difficulties, setting goals, introducing innovations in the pedagogical process, correction and evaluation of innovation) components [5].

According to O. Abdullina, the model includes basic functions, requirements for a specialist, a range of theoretical knowledge, a list of pedagogical skills, integrative professional and personal qualities, modeling the result to be achieved in higher education and independent practice [1].

The essence of the model proposed by O. Honcharova [2] is to create an organic, internally connected whole (goals, objectives, content, pedagogical conditions, forms, methods and results of the process of preparing students for innovation), the main structural components of which are content, procedural and evaluation.

In system modeling (according to N. Nychkalo) [4] it should be borne in mind that it is based on the unity of purpose, objectives, various activities, organizational forms, criteria for the functioning of the system as a whole and its individual subsystems.

We are impressed by the classification of models in pedagogical research, proposed by O. Yezhova [3, P. 204–206].

Learning models are used for studying. Research models are used to conduct research in professional pedagogy. They, in turn, can be ascertaining, research, imitation ones.

Ascertaining or conceptual models reflect the state of the system, make it possible to establish its components and explore the relationships between its elements. Such models are needed to understand the state of the problem, setting the research task. Experimental models allow conducting experimental research - both real and imaginary experiments. Simulation models reproduce the essential features of system behavior and allow us to study the influence of external factors on system behavior, ie to answer questions such as 1) what will happen if ... ?; 2) what was the reason ... ?; 3) what should be done to get ... ?; 4) is the hypothesis correct ... ?

In terms of form, research uses mostly ideal models or close to ideal cybernetic (according to Stoff’s classification), or informational (according to Glushkov’s classification). As material both material and information models are used. At the same time, material models (toys, models, etc.) predominate in the early stages of child development, while the importance of information models increases in adolescence.
According to the structure, hierarchical, tabular, network models are used. In hierarchical models, objects are located on certain levels, and lower-level objects are included as components of one of the higher-level objects. Different classifications are often created according to the hierarchical principle. Network models are used to describe systems with a complex structure of connections between elements. In tabular models, the main objects or properties are listed and located in the side of the table, and their quantitative values or qualitative characteristics are located in the corresponding cells of the table. Curriculum models, comparison models, etc. are drawn up in tabular form.

According to the degree of detailization, enlarged, detailed, fully detailed models are created. The level of detail should be agreed for the purpose of the study at a particular stage, depending on what decision needs to be made based on the analysis of the model. The individual parts of the model and the relationship between them should be presented so that the model is understood as a whole.

According to the object of research, a wide range of models is created, in accordance with the objectives of a particular study, such as: models of teaching aids (plans, programs, textbooks, visual aids, technical teaching aids, laboratory equipment, etc.); models of educational tasks; qualification models; specialist models.

According to the development in time, models can be static and dynamic ones. Static models reflect the state of the studied system at a certain fixed point in time; dynamic ones model the development of the system in the studied period of time.

Dynamic models, in turn, can be discrete or continuous. Discrete models reflect the state of the system over a number of fixed intervals or points in time, such as school or calendar years. Continuous models reproduce the constant changes in the state of the system depending on time.

Models can be: historical, relevant, promising, predictive, historical and comparative ones. Historical models reflect the state of the system in the past. Historical-comparative models allow comparing the state of the system during a certain period in the past and its current state. Current simulate the current state of the system. Perspectives reflect the state of the system over a period of time, taking into account events and processes that have taken place in the present and will have an impact on the system in the future.

According to the degree of reproduction of the main features of the model system can be basic, structural, functional, parametric ones. The basic model of the system reflects its most fundamental connections and properties. Graphical representation of such models is block diagrams that depict the order of actions, aimed at achieving the goal, or the process of transforming the object of study under the influence of control actions. Structural models give a general idea of the shape, location and number of the most important parts of the system, as well as the
relationships between them. Because most objects in pedagogical research are not studied in terms of their geometric properties, we can recommend such a kind of structural model as a topological model. It allows establishing relationships between objects without regard to their geometric structure. Functional models are designed to study the features of the system in accordance with its purpose. Graphically functional models can be presented in the form of block diagrams that reflect the order of actions aimed at achieving the result. A parametric model is a mathematical model that allows quantifying the parameters of a system.

According to the breadth of specialists’ training issues, the model can contain elements of international, national, regional and unique for a particular institution

According to the scope, educational and research pedagogical models are created.

Purpose of the article is to work out a structural and functional model of the system of formation special education teachers’ professional competence in the conditions of postgraduate education institutions.

Presentation of the main material of the study. Based on a retrospective analysis of approaches to the classification of models in pedagogy (M. Anisimov, Y. Boychuk, V. Venikov, O. Yezhova, V Zabolotsky, O. Kazachiner, Z. Karimov, V. Shtoff, etc.) [3], we clarified the features of the structural and functional model of the system of formation special education teachers’ professional competence in postgraduate education:

1) according to the field of application – research one, as it is designed for a pedagogical experiment, and if a positive result - for implementation in institutions of postgraduate pedagogical education; this model is declarative, because it reflects the state of development of professional competence, allows you to describe its components, to explore the relationship between the stages of implementation and structural units;

2) according to the form – informational one, as it provides information on the content of the process of formation of professional competence of special education teachers in postgraduate education;

3) by structure – network one, because the model has a complex structure, it is necessary to outline the identified relationships between its structural elements;

4) by the degree of detailization – detailed one, as the content of structural blocks is presented in each of them in order to make the content of the model as a whole clear, explain how to implement it in postgraduate education;

5) according to the object of research - the model of the specialist (the model is intended for persons who are specialists in the field of special and inclusive education, as well as for teachers of postgraduate pedagogical education who work with this category of teachers);
6) according to development in time – dynamic one, because the effectiveness of the model is tested in a certain period, it is possible to make changes, adjust the content of the model depending on the results obtained;

7) according to the degree of reproduction of the main features – functional one, as the model is designed to study the peculiarities of the formation of professional competence of special education teachers in accordance with its functions;

8) according to the breadth of specialists’ training issues – nationwide one, as currently the organization of inclusive education in educational institutions is recognized as necessary for implementation at the national level.

The most general requirement for the pedagogical model is its innovative orientation.

Thus, the structural and functional model of the system of formation special education teachers’ professional competence allows the identification and theoretical description, justification of the structural components of this process, the objective relationships between them, and the logic of its implementation.

The purpose of the model is the theoretical substantiation of the organizational and functional structure and content of the formation of professional competence of special education teachers, empirical description of components, clarification on a theoretical basis of its place in postgraduate education of teachers in this category.

The content of the model is subordinated to the leading, strategic idea – the order of society for the professional competence of a specialist who works with children with SEN and their families, as well as the organization of correctional and educational process in inclusive resource centers as a new structure and preschool, general secondary, professional (vocational-technical), higher education of professionally competent specialists who have good knowledge, skills, abilities, personal qualities during training, education and development of children with SEN in educational institutions.

According to the results of scientific research, the structural blocks of the model of the system of formation of professional competence of special education teachers are singled out: target, content, result ones. These blocks are interconnected, each of them affects the next through the solution of its inherent tasks that mark the content of the next block, and the relationship between them is manifested at the semantic and functional levels, which helps to implement the function of the whole model – to ensure the positive dynamics of the formation of professional competence of special education teachers.

The target block envisages the main goal of the model implementation - to ensure the positive dynamics of the formation of professional competence of special education teachers in postgraduate education.
Formulation of the purpose of the process of formation of professional competence of special education teachers – one of the key components of the model, which involves the formation of special education teachers conscious motivational and value attitude, active position in education, upbringing and development of children with disabilities psychological and pedagogical support of a child with SEN in the inclusive-resource centre (IRC) and other educational institutions, ability to conduct correctional and developmental classes, to conduct a comprehensive assessment of the development of a child with SEN, to formulate a conclusion, to keep documentation of the IRC within its functional responsibilities, development and acquisition of creative professional experience, as well as building a system of professional and personal goals related to the introduction of the model.

Under the goal we will understand the ideal model of the desired result: the special education teacher has reached the optimal level of professional competence.

Methodological principles of the process of formation of professional competence of special education teachers provide the basis of structural-functional model on methodological approaches (systemic, humanistic, personality-oriented, andragogical, competence, subject, team), legal support, as well as principles of professional competence defectologists in the conditions of postgraduate education (education, upbringing and development of children with SEN of different nosologies, education of children in the conditions of inclusive educational environment, education of adults in postgraduate education).

The content block of the structural-functional model is motivated by the unity of motivational-value, correctional-pedagogical, diagnostic-analytical components of the special education teachers’ professional competence.

Organizational and technological support for the formation of professional competence of special education teachers is represented by the presence of criteria for the formation of professional competence of special education teachers (personal, activity, monitoring) and their indicators; forms of organization of training (training according to the programs of advanced training courses, participation in special courses, temporary creative teams, Specialist schools, seminars, webinars, workshops, trainings, exhibitions, etc.); availability of diagnostic tools (tests, questionnaires, questionnaires), which allows to identify the current levels of professional competence of special education teachers (high, medium, low).

In addition, the implementation of the unit is a number of tools:

1) audiovisual means, Internet resources, presentation materials (educational videos, examples of pedagogical situations) (motivational and value component of professional competence);

2) materials of lectures, practical, seminar classes, thematic special courses, audiovisual means, Internet resources, author’s educational and methodical support (programs of advanced training courses, special courses, scientific articles,
educational videos, educational manuals and presentation materials in pdf-format, schemes, drawings “Categories of difficulties”, “Levels of support for children with SEN”, “Features of support at the level of preschool educational institution”, “Levels of support”, “Adapted and modified schedules”, etc.); (correctional and pedagogical component of professional competence);

3) diagnostic materials (diagnostic tests used in the practice of IRC, questionnaires, questionnaires for parents, examples of pedagogical situations, IRC, etc.) (diagnostic and analytical component of professional competence).

The leading condition for its implementation is the focus on close cooperation between teachers of postgraduate pedagogical education and special education teachers.

The result of the introduction and implementation of the experimental model, in accordance with the goal, should be a positive dynamics of professional competence of special education teachers in postgraduate education – the acquisition of knowledge, skills, personal qualities in working with children with special educational needs through the study of socio-humanitarian and professional modules of the working educational program of postgraduate training courses. In our opinion, in the process of mastering the topics of social-humanitarian and professional modules of the working educational program of advanced training courses it is necessary to lay the foundation for further acquisition of inclusive knowledge, skills, personal qualities when working with children with special educational needs. This result is displayed during the implementation, respectively, of the result block of the model. This block predicts a combination of criteria, indicators and levels of professional competence of special education teachers, as well as diagnostic tools based on them. In addition, this block provides for the analysis of results, their generalization, working out recommendations for the implementation of the model in the practice of postgraduate pedagogical education.

The set of monitoring procedures makes it possible to carry out corrective actions in a timely manner and positively influence the effectiveness of design in the process of forming the professional competence of special education teachers at any stage.

Thus, the structure of the model of the system of formation of professional competence of special education teachers in postgraduate education is presented in Fig. 1.
Fig. 1. Structural and functional model of the system of formation special education teachers’ professional competence in postgraduate education.
Conclusions. The structural-functional model of the system of special education teachers’ professional competence formation in the conditions of postgraduate education institutions is worked out.

Peculiarities of the structural-functional model of special education teachers’ professional competence formation in postgraduate education are: 1) by scope – research, 2) by form – informational, 3) by structure – network, 4) by level of detail – detailed, 5) according to the object of research – the model of the specialist, 6) according to the development over time – dynamic, 7) according to the degree of reproduction of the main features – functional, 8) according to the breadth of specialists’ training issues – nationwide. The interconnected structural blocks of the model of the system of special education teachers’ professional competence formation are singled out: target, content, result ones.

The content of the model is subordinated to the leading, strategic idea – the order of society for the professional competence of a specialist who works with children with SEN and their families, as well as the organization of correctional and educational process in inclusive resource centers as a new structure and preschool, general secondary, professional (vocational-technical), higher education of professionally competent specialists who have good knowledge, skills, abilities, personal qualities during training, education and development of children with SEN in educational institutions.

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