

Artículo de investigación

Development of content of educational programs of additional education for professor-teaching composition in organization of educational services of training with disability

Desarrollo de contenidos de programas educativos de formación complementaria para composición docente en organización de servicios educativos de formación con discapacidad
Desenvolvimento de conteúdos de programas educativos de formação complementar para composição de professores na organização de serviços educativos de formação com deficiência

Recibido: 16 de enero de 2019. Aceptado: 06 de febrero de 2019

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Abstract

Guided by the results of the experimental work, the authors came to the conclusion that the use of the electronic educational and methodical complex in mathematics on the basis of modular qualification training technology is essential. The current stage in the development of educational systems is characterized by the emergence and practical introduction of inclusive education for children with disabilities in general education organizations. Inclusion in the educational process of children with disabilities is dictated not only by modern normative documents, but also by the social need for inclusive education. One of the conditions for the preparation of children with disabilities in the educational environment is the quality and special training of teachers who must possess certain knowledge and skills to work with children with disabilities. Therefore, this study aimed to address the problem of training teachers in additional vocational education to work with children with disabilities. We conducted a training experiment, in which the professors of the university participated. The purpose of the pilot work was to improve the quality of teacher training in additional professional education to create an inclusive

Resumen

Guiados por los resultados del trabajo experimental, los autores llegaron a la conclusión de que el uso del complejo educativo y metódico electrónico en matemáticas sobre la base de la tecnología de capacitación de calificación modular es esencial. La etapa actual en el desarrollo de los sistemas educativos se caracteriza por el surgimiento y la introducción en la práctica de la educación inclusiva de los niños con discapacidades en las organizaciones de educación general. La inclusión en el proceso educativo de los niños con discapacidades está dictada no solo por los documentos normativos modernos, sino también por la necesidad social de una educación inclusiva. Una de las condiciones para la preparación de niños con discapacidades en el entorno educativo es la calidad y la capacitación especial de los maestros que deben poseer ciertos conocimientos y habilidades para trabajar con niños con discapacidades. Por lo tanto, este estudio tuvo como objetivo abordar el problema de la capacitación de maestros en educación vocacional adicional para trabajar con niños discapacitados. Realizamos un experimento formativo, en el que participaron los profesores

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educational environment in the university. The legislative concepts of the Russian Federation are justified. One of the priority directions for the education of children with mental retardation (intellectual disabilities) along with general education is to give them a real opportunity to obtain a profession. The requirements for the results of the development of the complementary education program for children reflect the set of individual, public and state needs. The article gives an example of the developed program of additional professional education for the teaching staff and gives an example of the subject matter of the taught modules. Applying the teacher's professional skills training technology in additional education, additional education courses have been developed for the teaching staff of the university. An example is given of the opening of a resource center at the K. Minin University, which allows solving the main tasks of vocational training for children with disabilities.

Keywords: students with disabilities, complementary professional training, people with disabilities.

de la universidad. El propósito del trabajo piloto fue mejorar la calidad de la capacitación de los maestros en la educación profesional adicional para crear un ambiente educativo inclusivo en la universidad. Los conceptos a nivel legislativo de la Federación de Rusia están justificados. Una de las direcciones prioritarias para la educación de los niños con retraso mental (discapacidades intelectuales) junto con la educación general es brindarles una oportunidad real de obtener una profesión. Los requisitos para los resultados del desarrollo del programa de educación complementaria para niños reflejan el conjunto de necesidades individuales, públicas y estatales. El artículo da un ejemplo del programa desarrollado de educación profesional adicional para el personal docente y se da un ejemplo de la materia de los módulos enseñados. Aplicando la tecnología de formación de competencias profesionales del docente en la educación adicional, se han desarrollado cursos de educación adicionales para el personal docente de la universidad. Se da un ejemplo de la apertura de un centro de recursos en la Universidad K. Minin, que permite resolver las tareas principales de la formación profesional para niños con discapacidades.

Palabras claves: alumnos con discapacidad, formación profesional complementaria, personas con discapacidad.

Resumo

Guiados pelos resultados do trabalho experimental, os autores chegaram à conclusão de que o uso do complexo educacional e metódico eletrônico em matemática com base na tecnologia de treinamento modular de qualificação é essencial. O estágio atual no desenvolvimento de sistemas educacionais é caracterizado pelo surgimento e introdução prática da educação inclusiva para crianças com deficiência em organizações de educação geral. A inclusão no processo educacional das crianças com deficiência é ditada não apenas pelos documentos normativos modernos, mas também pela necessidade social de educação inclusiva. Uma das condições para a preparação de crianças com deficiência no ambiente educacional é a qualidade e treinamento especial de professores que devem possuir certos conhecimentos e habilidades para trabalhar com crianças com deficiência. Portanto, este estudo teve como objetivo abordar o problema da formação de professores em educação profissional adicional para trabalhar com crianças com deficiência. Realizamos um experimento de treinamento, no qual participaram os professores da universidade. O objetivo do trabalho piloto foi melhorar a qualidade da formação de professores em educação profissional adicional para criar um ambiente educacional inclusivo na universidade. Os conceitos legislativos da Federação Russa são justificados. Uma das direções prioritárias para a educação de crianças com retardo mental (deficiência intelectual), juntamente com a educação geral, é dar-lhes uma oportunidade real de obter uma profissão. Os requisitos para os resultados do desenvolvimento do programa de educação complementar para crianças refletem o conjunto de necessidades individuais, públicas e estatais. O artigo dá um exemplo do programa desenvolvido de formação profissional adicional para o corpo docente e dá um exemplo do assunto dos módulos ensinados. Aplicando a tecnologia de treinamento de habilidades profissionais do professor em educação adicional, foram desenvolvidos cursos de educação adicionais para o corpo docente da universidade. Um exemplo é dado da abertura de um centro de recursos na Universidade K. Minin, que permite resolver as principais tarefas de formação profissional para crianças com deficiência.

Palabras-clave: alumnos con deficiencia, formación profesional complementaria, personas con deficiencia.

Introduction

Today in Russia people with individuality in development are increasing. In society there is a problem of relations and development of people with an individual in development. This raises the problem of finding ways to prepare and train such a category of people.

At the moment, it will be absolutely topical to perfect the development of the content of educational programs for vocational training not only for children with disabilities, but also to train teachers for such activities.

Such a change in educational content leads to increased requirements for the activity of the teacher, the expansion of the possibilities for special requirements to the content part of the educational process.

The Law on Education in the Russian Federation Federal Law No. 273 of December 29, 2012, for the first time at the federal level, established the following concepts:

- the process of education is carried out by the purposefulness of the process of educational and learning activity, and also aims at the acquisition of knowledge, skills, skills;
- the process of learning is a process that is aimed at organizing the activities of educators in the formation of knowledge, skills and habits (Ajeenkya & Patil, 2014).

These concepts are supported by part 2 of Article 10 of the same law: "Education is divided into general education, vocational education, additional education and vocational training, providing the opportunity to realize the right to education throughout life (continuous education)."

Changes in the legislation speak about the importance of solving the problem of preparing children with individual characteristics, as well as the need to develop new professional educational programs (Arkhipova et al, 2017).

At present, professional experience has accumulated a certain experience of working with disabled children and retraining of teachers for the educational environment of educational institutions.

However, in the domestic educational system the situation has developed in such a way that the issues of determining the psychological and pedagogical conditions for organizing an integrated and inclusive education have been thoroughly studied (S.V. Alekhin, O.G. Gilyazov, E.A. Ekzhanov, A.N. Konoplev, N.N. Malofeev, M.I. Nikitina, E.V. Reznikova, L.E. Shevchuk), the need for psychological and pedagogical support for children with disabilities in conditions of an inclusive educational environment (T.L. Leschinskaya, V. Khvoynitskaya), it is proved necessary be special training of teachers working with children with disabilities in general education institutions (Barber et al, 2013).

At the same time, the training of teachers to work with children with disabilities in the educational environment has not been studied enough. The thematic content of refresher courses for faculty members of educational institutions is not sufficiently developed. The need to develop courses for the additional education of teachers in vocational education for the formation of an inclusive educational environment is also conditioned by the following shortcomings: the absence of specially trained teachers to work with children with disabilities in higher education institutions; the theoretical and methodological base for training teachers for the formation of an inclusive educational environment in universities is insufficiently developed; absence of specially developed pedagogical technologies aimed at training teachers in additional professional education to form an inclusive educational environment (Bicheva & Filatova, 2017).

The effectiveness of the program of additional training courses for the faculty will be higher if, first of all, the peculiarities of training teachers for work in inclusive education are revealed, the level of professional competence improvement should be determined, taking into account the work with children with disabilities, determining the pedagogical conditions of the process of training teachers in additional vocational education for formation of an inclusive educational environment in the university, which provides for the development of a software-based method social support of the educational process, intensification of the learning process,

differentiated approach to teaching (Bogorodskaya et al, 2017).

As for Russia, the development of the education system for children with disabilities at the current stage of educational policy has acquired new outlines. One of the priority tasks of Russia's social policy is the modernization of education in the direction of increasing accessibility and quality for all categories of citizens. In accordance with the Constitution of the Russian Federation and the Law "On Education in the Russian Federation," children with disabilities have equal rights with everyone to education. The concept of reforming the system of special education reflects directions, including the creation and development of special conditions in the general education system (Ilaltdinova et al, 2017).

Thus, the relevance of scientific research in the development of additional courses for teaching staff for working with children with disabilities is due primarily to the developed supplementary education program and introduced into the learning process (Ilyashenko, 2018).

The revealed contradiction and urgency of the research allowed to consider the theoretical provisions for the development and improvement of the program of additional education courses in the university and to analyze the new improved program of courses (Kashtanova & Kudryavtsev, 2017).

Methods

At the first stage, the choice and actualization of the research topic was carried out, its problem was justified; an analysis of the theory and practice in the field of training teachers in

additional professional education for the formation of an inclusive educational environment in higher education institutions, with the purpose of revealing the degree of problem development; the hypothesis of research is put forward, the purpose and problems are put; the main theoretical conclusions are formulated. At the second stage, the ascertaining and forming stages of the experiment were carried out. The introduction and approbation of the author's modular program of training specialists for the formation of an inclusive educational environment in the university in the system of additional professional education was carried out.

The third section summarizes and analyzes the results of the study, and outlines the main conclusions (Kutepov et al, 2017).

To assess the effectiveness of the work carried out at the formative stage of the study, we organized a control phase.

At the control stage, the same methods were used as in the ascertaining: the questioning of teachers, observations in the lesson activity.

In the pilot study at the control stage, the teachers of Nizhny Novgorod State Pedagogical University named after KozmaMinin took part.

Only 25 participants were involved. To test the effectiveness of the forming stage of the experiment, a questionnaire was conducted by the teachers.

The results of this questionnaire are provided in Table I and in Figure 1.

Table I - Results of studies on the readiness of teachers to form an inclusive educational environment

Preparedness components	quantity of teachers	Readiness levels							
		optimal		sufficient		admissible		critical	
		quantity	%	quantity	%	quantity	%	quantity	%
Motivational and personal	25	1	4	5	20	14	56	7	28
Cognitive	25	2	8	3	12	5	20	12	48
Socio-legal	25	5	20	4	16	6	24	6	24

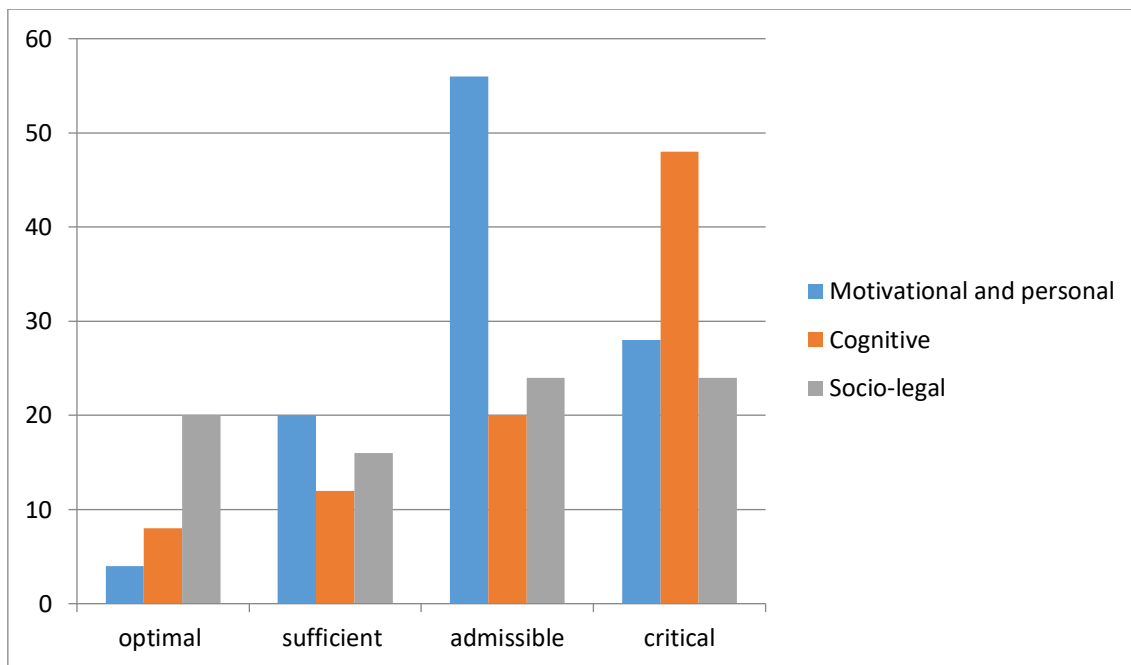


Figure 1. Levels of readiness of teachers of general education organizations to form an inclusive educational environment at the stage of the ascertaining experiment

From Table I it follows that 10 teachers (which amounted to 54% of the number of all respondents) showed an acceptable level of motivational and personal readiness. At them the weak motivation of acceptance of children with the limited possibilities of health in the conditions of high school prevails. The teachers of this group do not have enough expressed desire to form a tolerant attitude of society to children with disabilities. This is due to their shallow knowledge in the processes of inclusive education and ways of forming a positive attitude. In this connection, they pointed to the necessity and importance of constant professional pedagogical improvement, without special training it is impossible to achieve the effectiveness of inclusive education of children. A critical level of motivational and personal readiness for the formation of an inclusive educational environment was shown by 7 teachers, which accounted for 25% of the total number of respondents. Teachers of this group have a very weak motivation for accepting children regardless of their level of psychophysical development. They do not realize the social importance of working with children of this category in the conditions of the university.

Teachers do not always show empathy, they have a weakly expressed desire to form a

tolerant attitude of society to people with disabilities. Sufficient level of motivational and personal readiness was noted in 5 people, which amounted to 120% of the number of all respondents. Teachers are dominated by individual motives for accepting children with disabilities. The optimal level of motivational and personal readiness was shown by 1 person, which was 5% of the total number of subjects.

Teachers of this group are able to receive and provide assistance to different categories of children. They are deeply aware of the social importance of working with children with disabilities, as evidenced by the answers to the questionnaire. They strive to form a tolerant attitude of society to children of this category and have a need for constant professional and pedagogical improvement.

Thus, the results of studying the motivational and personal readiness of teachers of general education organizations to form an inclusive educational environment have shown that they are not always ready to receive and provide assistance to children with disabilities, they do not understand the social significance of working with children of this category in the conditions of a general education school.

Most teachers need advice and guidance. The results of studying the social and legal readiness of teachers to form an inclusive educational environment have shown certain gaps in the knowledge of the legal system and legislation, as well as in the issues of interaction between society and the individual (Ilyashenko, 2018).

In our experiment, a pedagogical study was conducted, which was conducted on the basis of the Nizhny Novgorod Pedagogical University named after KozmaMinin, the university has the opportunity to conduct refresher courses for faculty members in the conditions of a resource educational and methodological center for the education of disabled children.

Thus, an analysis of the need to organize additional training courses for teaching staff with disabled children at the beginning of the experiment made it possible to identify the percentage of teachers who are ready to participate in the educational activities of additional education (Markova et al, 2017).

Further work was carried out on the development of the program of additional education courses.

For the preparation and implementation of the supplementary education program, distance education technologies are used to train specialists in working with children with disabilities, which enable them to learn through the electronic network of interaction.

Such programs are developed and implemented by educational organizations independently, taking into account the material and technical and educational-methodological base (Markova et al, 2018).

In the system of preparation of the implementation of an additional educational program for teachers of vocational education and educational services, as well as for children with disabilities and students with disabilities, the following tasks are set:

1. To inform the listeners about the general issues of organization of professional educational services for training persons with disabilities at the level of higher professional education.
2. To bring information to the listeners on supporting the successful integration of students with disabilities and limited health opportunities into the

educational process in the conditions of higher education.

3. To form the competence of the students in the ability to organize the process of teaching children with disabilities by the programs of higher professional education.
4. To develop the competence of the students in the use of adaptive educational technologies, using e-learning and distance educational technologies for children with disabilities and limited health opportunities (Mooney & Laubach, 2002)

The following program introduces students to the main features of training and socialization of blind and visually impaired students, students with hearing impairment, students with child cerebral paralysis (Nemova et al, 2016).

The program reveals the main aspects of the process of teaching higher professional education to students with disabilities.

The developed program of additional education reveals aspects of the legal value of students with disabilities and limited health opportunities (Rylands&Shearman, 2018).

In the given program all necessary methodical questions of training and support of higher professional education of students with disabilities and limited health possibilities are considered.

With this development of the supplementary education program, it becomes obvious that as a result of the development of the professional retraining program, students receive knowledge in the field of special pedagogy, correctional psychology of development of children with disabilities; to be able to apply methods of psychological and pedagogical diagnostics and correction, directions and content of correctional-developing work; be able to interact with other participants of the correctional and educational process in the context of general education organizations (Shklyar, 2014).

To assess the quality of training, we have developed levels of development of teachers' readiness for the implementation of inclusive education for children with disabilities.

Results and Discussion

Based on the analysis of the literature of additional education in higher education institutions, we developed a program of additional education courses Table 2.

By volume, the total complexity of the discipline of the provided supplementary education program for training teachers for students with

disabilities and students with disabilities is 72 hours, including classroom and independent work of students.

The program consists of 2 modules for 36 hours, implemented both in full-time and in remote forms. The authors assume independent work of the listeners in a free schedule in the remote mode.

Table 2. Curriculum of the modular program of refresher courses

Nº	Name of modules	Total hours	Including					form of control
			Lectures	Seminars	Practical work	Consultations	Independent work	
1	Module 1. General issues of teaching students with disabilities and limited health opportunities in the university	36	14	14	-	-	8	credit
2	Module 2 Variative part	36	2	2	21	1	10	credit
	Total	72	16	16	21	1	18	credit

Table 3. The module "Training of employees for training disabled people on the basis of educational organizations of higher professional education"

Nº	Name of modules	Total hours	Including					Form of control
			Lectures	Seminars	Practical work	Consultations	Independent work	
1	Principles of constructing an individual curriculum for students with disabilities and disabilities	9	2		4	1	2	Current control

2	Principles of the organization of the educational process for students with disabilities and limited health opportunities, including using distance education technologies	9	2	5	2	Current control		
3	Technologies for teaching students with disabilities and disabilities	6		4	2	Current control		
4	Methods and methods of forming individual tasks for independent work	6		4	2	Current control		
5	Methods and techniques for monitoring the development of professional competencies in higher education programs	6		4	2	Current control		
	Total	36	2	2	21	1	10	Credit

Table 4. The module "Training of specialists in the organization of educational services for students with disabilities at the level of secondary vocational education"

№	Name of modules	Total hours	Including					form of control
			Lectures	Seminars	Practical work	Consultations	Independent work	
1	Mechanisms of professional interaction of teachers in the process of training students with disabilities, including using distance education technologies	19	2		11		6	Current control
2	Features of the work of the coordinator for the organization and support of training for students with disabilities in the university	17		2	10	1	4	Current control
	Total	36	2	2	21	1	10	credit

As a result of the development of this supplementary education program, the students develop certain knowledge of skills and skills, and the teacher's competence approach to his professional activity is increased.

The modern level of education opens up new opportunities for educational and methodological support of the learning process. One of the means of accessible education, retraining of the staff of educational institutions is the courses of additional education in universities.

Further education courses in inclusive education are a program to improve the level of training of faculty, to improve the skills of mastering new professional competencies of disabled people working with children (Smirnova et al, 2017).

The Russian Higher School believes that one of the most common ways of professional development is to improve the qualification, the purpose of which is the optimization of the pedagogical process, the professional growth and self-improvement of teachers (Tsyplakova, 2016).

So, the development of additional education courses is an integral part of the educational process, which is designed to provide timely retraining of staff.

However, in order to improve the process of retraining faculty for working with children with disabilities, it is necessary to ensure the different content of retraining programs at different levels of development (Tsyplakova, 2016).

It is important to note that although the results presented in this article, which expand the limited amount of work related to the development and implementation of additional education courses for inclusive education, they are based on the study of only one institution and a limited number of participants. It would be useful to see if the results presented in this article can be extended to participants from other educational institutions (Vaganova et al, 2017).

During the research stages, questionnaires were given to teachers participating in supplementary education courses. A comparative analysis of the results of the questionnaire aimed at revealing the attitude of teachers towards the processes of inclusive education of children with disabilities showed an increase in positive responses (90%) on the nature of the process of inclusive education for children with disabilities. The work carried out influenced the change in the attitude of teachers towards the organization of inclusive education.

To check the effectiveness of the work done with teachers to study the readiness for the formation of an inclusive educational environment, we proposed to fill in the "Self-assessment questionnaire of teachers' readiness for the formation of an inclusive educational environment". Comparative results of the study of the motivational and personal component of teachers' readiness for the formation of an inclusive educational environment are presented in Table 5.

Table 5. Comparative results of the study of teachers' readiness for the formation of an inclusive educational environment

Group	Stages of the experiment					
	The ascertaining stage			The control stage		
teachers of the control and experimental group	experimental group			control group		
	Levels	quantity	%	quantity	%	quantity

optimal	2	8	3	12	1	4
sufficient	3	12	16	64	7	28
available	15	60	4	16	12	48
critical	5	20	2	8	5	20

The data presented in Table 5 show that the results of measurements at the ascertaining stage of the experiment in the control and experimental groups coincide. The data obtained at the control stage of the experiment showed that the results of measurements in the control group were lower than in the experimental group. So in the control group, the results of the levels of the motivational and personal component of teachers' readiness were distributed as follows: 20% - critical, 48% - acceptable, 28% - sufficient, 4% - optimal. In the experimental group, the following results were obtained: 20% - critical, 60% - acceptable, 12% - sufficient, 8% - optimal. In the experimental group, the level of readiness increased in comparison with the control group (Vaganova et al, 2017).

Thus, the development of the content of additional education educational programs for the teaching staff for the organization of educational services for students with disabilities makes it possible to increase the effectiveness of the teacher's knowledge by working with children with disabilities. In addition to all this, the efficiency of certain methods of the teacher's activity is increased, the need for training of teachers for the formation of an inclusive educational environment in higher education is confirmed.

Conclusions

The theoretical and applied research devoted to the substantiation of the possibility of training teachers in additional vocational education for the formation of an inclusive educational environment in educational institutions allowed us to formulate the following conclusions: the system of indicators and criteria for the effectiveness of training professorial staff through the courses of additional education for the education of children with disabilities. An assessment of the effectiveness of the work carried out with teachers to study the readiness

for the formation of an inclusive educational environment was held, the students completed the "Self-assessment questionnaire of teachers' readiness for the formation of an inclusive educational environment". Comparative results of the study of the motivational and personal component of teachers' readiness for inclusive education educational environment showed that most are ready for retraining of professional activities. Thus, the positive results obtained during our study allow us to conclude that the developed supplementary education program is an effective tool for improving the quality of educators' education for working with disabled children.

In the course of the study, the criteria for the readiness of teachers to form an inclusive educational environment in educational organizations are defined, they are the criterion of the motivational and personal component (the ability to receive and help different children, regardless of the characteristics of psychophysical development, a deep awareness of the social importance of working with children with disabilities in the conditions of general education organizations, the desire to form a tolerant attitude of society to children of this category and i), the criterion of the cognitive component (the presence of complete, solid and systematic professional knowledge that allows psychological and pedagogical support of children with various variants of deviant development and to carry out correctional and developing work using modern special technologies and methods) and the criterion of the socio-legal component (possession the foundations of the legal system and legislation, a constant desire for professional and pedagogical improvement).

The following are the pedagogical conditions of the process of training teachers: the development of program and methodological support of the educational process, the modularity of the process of teaching teachers in

conditions of additional vocational education, the linearly concentric method of positioning the material; intensification of the learning process, a differentiated approach to teaching.

With a view to improving, the hypothesis was confirmed that the professional training of teachers in supplementary education to model an inclusive educational environment in general education organizations will be effective if:

- The essence of the inclusive educational environment in educational organizations is described;
- The process of training teachers in additional professional education is organized on the basis of the revealed essence of the inclusive educational environment;
- substantive and methodical aspects are presented in the author's modular program of training teachers in additional professional education to create an inclusive educational environment in educational organizations;
- the criteria, indicators and levels of the professional readiness of teachers of educational organizations to form an inclusive educational environment have been defined and formulated;
- a diagnostic tool was developed to determine the levels of professional readiness of teachers to form an inclusive educational environment in educational institutions;
- the organizational and pedagogical conditions (program and methodical support of the educational process, the modularity of the process of teaching teachers in the conditions of additional professional education, the linear-concentric method of material location, the intensification of the learning process, the differentiated approach in teaching), the training of teachers for the formation of an inclusive educational environment in educational institutions.

References

- Ajeenkya, D., & Patil, Y. (2014). Dr. Gagandeep Nagra and Dr. Gopal R. A Study on Total Quality Management in Higher Education. *International Journal of Management*, 5(5), 1-6.
- Arkhipova, M. V., Belova, E. E., Gavrikova, Y. A., Lyulyaeva, N. A., & Shapiro, E. D. (2017, July). Blended Learning in Teaching EFL to Different Age Groups. In *International conference on Humans as an Object of Study by Modern Science* (pp. 380-386). Springer, Cham.
- Barber, M., Donnelly, K., Rizvi, S., & Summers, L. (2013). An avalanche is coming. *Higher Education and the revolution ahead*, 73.
- Bicheva, I. B., & Filatova, O. M. (2017). Formation of the teacher-leader in the educational process of the university. *Bulletin of the University of Minin*, (3), 20.
- Bogorodskaya, O. V., Golubeva, O. V., Gruzdeva, M. L., Tolsteneva, A. A., & Smirnova, Z. V. (2017, July). Experience of Approbation and Introduction of the Model of Management of Students' Independent Work in the University. In *International conference on Humans as an Object of Study by Modern Science* (pp. 387-397). Springer, Cham.
- Ilaiddinova E.Yu., Filchenkova I.F., Frolova S.V. (2017). Peculiarities of the organization of postgraduate support of graduates of the targeted training program in the context of supporting the life cycle of the teacher's profession // *Vesnik of Minin University*. No. 3 (20). C. 2.
- Ilyashenko, L.K. (2018). Pedagogical Conditions of Formation of Communicative Competence of Future Engineers in the Process of Studying Humanitarian Disciplines, *International Journal of Civil Engineering and Technology*, 9(3).
- Ilyashenko, L.K., Vaganova, O.I., Smirnova, Z.V., Prokhorova, M.P., Gladkova, M.N. (2018). Forming the competence of future engineers in the conditions of context training. *International Journal of Mechanical Engineering and Technology*, 9 (4).
- Kashtanova S. N., Kudryavtsev V. A. (2017). Career Routing as a Strategic Line for the Professional and Personal Development of Persons with Disabilities and Disabilities // *Vesnik of Minin University*. No. 6 (2). C. 3
- Kutepov, M.M., Vaganova, OI, & Trutanova, A.V. (2017). Possibilities of health-saving technologies in the formation of a healthy lifestyle. *Baltic Humanitarian Journal*, 6(3), 210-213. <https://elibrary.ru/item.asp?id=30381912>
- Markova, S. M., Sedykh, E. P., Tsyplakova, S. A., & Polunin, V. Y. (2017, July). Perspective Trends of Development of Professional Pedagogics as a Science. In *International conference on Humans as an Object of Study by Modern Science* (pp. 129-135). Springer, Cham.
- Markova, S. M., Sedykh, E. P., Tsyplakova, S. A., & Polunin, V. Y. (2017, July). Perspective Trends of Development of Professional Pedagogics as a Science. In *International conference on Humans as an Object of Study by Modern Science* (pp. 129-135). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-75383-6_17

- Mooney, M. A., & Laubach, T. A. (2002). Adventure engineering: A design centered, inquiry based approach to middle grade science and mathematics education. *Journal of Engineering Education*, 91(3), 309-318.
- Nemova O.A., Retivina V.V., Kutepova L.I., Vinnikova I.S., Kuznetsova E.A. (2016). Sociocultural Mechanisms of Intergenerational Values and Mindset Translation in Modern Family Development and Generational Change//*International Journal of Environmental and Science Education*. T. 11. №13. P. 6226-6237.
- Puspitasari, L., In'am, A., & Syaifuddin, M. (2018). Analysis of Students' Creative Thinking in Solving Arithmetic Problems. *International Electronic Journal of Mathematics Education*, 14(1), 49-60.
- Rylands, L. J., & Shearman, D. (2018). Mathematics learning support and engagement in first year engineering. *International Journal of Mathematical Education in Science and Technology*, 1-15.
- Shklyar, N.V. (2014). Training and retraining of psycho-pedagogical personnel in a competence-based approach / N.V. Shklyar, I. A. Emelyanova, E.A. Borisova, O. V. Karynbaeva, E.S. Dunaeva // *Life Science Journal*; 11(12s), P. 501-505.
- Smirnova, ZH. V., Vaganova, O. I., & Trutanova, A. V. (2017). Itogovayagosudarstvennayaattestatsiyakakspobkompleksnoyotsenkikompetentsiy. *Karelian Scientific Journal*, 6(3), 74-77. <https://elibrary.ru/item.asp?id=30453035>
- Tsyplakova S.A., Grishanova M.N., Korovina E.A., Somova N.M. (2016). Theoretical bases of designing of educational systems // *Azimuth of Scientific Research: Pedagogy and Psychology*. Vol. 5. No. 1 (14). Pp. 131-133(in Russian).
- Tsyplakova S.A., Grishanova M.N., Korovina E.A., Somova N.M. (2016). Theoretical bases of designing of educational systems // *Azimuth of Scientific Research: Pedagogy and Psychology*. Vol. 5. No. 1 (14). Pp. 131-133(in Russian).
- Vaganova O.I., Koldina M.I., Trutanova A.V. (2017). Development content of professional pedagogical education in the conditions of realization of competence approach. *Baltic Humanitarian Journal*, t. 6, no. 2 (19), pp. 97-99 (in Russian).
- Vaganova, O. I., Smirnova, ZH. V., & Trutanova, A. V. (2017). Organizatsiyanauchnoissledovatel'skoydeyatelnostibakalavraprofessional'nogoobucheniya v elektronnoysrede. *Azimuth of Scientific Research: Pedagogy and Psychology*, 6(3), 239-241.