

Developing The Readiness of Future Defectologist-Teachers to Improve Their Professional Activities

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ABSTRACT: The field of special education requires special competence from defectologist-teachers and readiness to apply individualized teaching and support methods, which represents an important topic for scientific research. The aim of this research is to analyse the characteristics of future professional activities and the process of competence development in future defectologist-teachers. The following research methods were used: observation, questionnaires, surveys, as well as an experiment, which included tasks for developing individualized educational programs, creating adapted educational materials, and developing correctional work methods. As a result of this research, it was established that the idea of inclusive education lies in providing equal opportunities for all students, including those with special needs and individual requirements. This includes creating supportive environments and communities where every student feels accepted and included. Teachers, especially defectologist-teachers, play a key role in implementing this concept. This research introduces a novel approach to preparing defectologist-teachers by integrating real-world simulations and targeted interventions aimed at enhancing their readiness for pedagogical activities in inclusive educational settings. The study is particularly relevant in the context of evolving educational policies and the growing demand for skilled professionals capable of addressing the diverse needs of children with special educational needs. To enhance the applicability and actionability of the findings, the study could adopt a more focused approach by concentrating on specific factors influencing defectologist-teacher readiness.

Keywords: special pedagogy, professional activity, defectologist-teacher, psychological process, inclusion, innovative technology, pedagogical activity, special education.

I. INTRODUCTION

Modern education faces challenges associated with the diversity of special educational needs of students, including children with autism, speech impairments, visual and hearing impairments, developmental delays, and other conditions. The effective integration of defectologist-teachers into the educational process is a key element in creating an inclusive educational environment where every student has equal opportunities for

learning and development. Developing the readiness of future defectologist-teachers to improve their professional activities contributes to the improvement of education quality. Therefore, researching this topic is not only important for enhancing the professional competence of future defectologist-teachers, but also significant for the development of inclusive education and ensuring equal opportunities for all students.

Defectologist-teachers work with children with various special educational needs, and understanding and accommodating this diversity poses a challenge in determining the most effective teaching and support methods. The process of preparing future defectologist-teachers requires both theoretical and practical training, including knowledge of specific teaching methods and technologies adapted to the special needs of students in educational institutions in Kazakhstan. Researchers such as Kefallinou et al. [1], Zholdasbekov et al. [2], S. Molina Roldán et al. [3] have explored this issue. They believe that developing and implementing an effective model of professional training for future special education teachers is an important direction in education. Such measures are seen to have the potential to address the complex challenges of rehabilitation and social adaptation of students with developmental and behavioural deviations. It is necessary to more thoroughly study the factors influencing the success of the learning process and the formation of the personality of future defectologist-teachers. Scholars emphasize that effective professional development of young teachers during their higher education is not limited to acquiring theoretical knowledge and practical skills – their personal development and formation of an active life stance are also important aspects. Alongside professional growth, the educational program should also focus on developing the personal qualities of future special educators. In the context of preparing defectologist-teachers, the application of coaching concepts can be an effective tool for professional training.

Some scholars suggest that modern pedagogical technologies have the potential to take teacher preparation to a qualitatively new level. Researchers such as B.K. Khusniddinova [4], K. Sharipova [5], G. Szumski et al. [6], Z.P. Sari et al. [7] emphasize the role of coaching technology among new pedagogical methods aimed at personal development and the development of leadership skills among future teachers. They argue that not only the criteria for teachers' professional mastery are changing, but also the goals and methods of their work.

New approaches to education imply a reconsideration of the content and methods of assessing success in education, taking into account not only intellectual and subject achievements but also the personal qualities of the student. According to researchers, since the beginning of the 21st century, the formation of the profession of defectologist-teacher has changed the content of teacher training in higher education. These changes, according to researchers, were influenced not only by the dynamics of social needs and requirements for education professionals but also by relevant scientific research revealing new aspects and methods of working with children with special educational needs. Researchers emphasize the importance of finding new ways to improve the development of competencies and professional training of students to enhance the corrective practice of future defectologist-teachers. It is necessary to pay more attention to studying this issue in the context of developing the readiness of future defectologist-teachers to improve their professional practice. Studying the role of inclusive education teachers in the education system can help identify the key aspects and problems they face in their professional activities.

In the 21st century, in the Republic of Kazakhstan, serious problems exist in the work of defectologist-teachers, especially speech therapists, in interacting with parents of children with speech impairments, as well as with other specialists, researchers note. Researchers such as S. Fränkel et al. [8], A. Stanczak et al. [9], A. Kefallinou and A. Howes [10] have highlighted this in their work. Many argue that in the work of defectologist-teachers, the ability to effectively interact with parents of children is important because the family plays a key role in the correction process. Moreover, researchers believe that interaction between defectologist-teachers and other educators is also important to provide a comprehensive approach to the education and development of the child.

Studying the role of teaching staff in a democratic state and civil society, especially in the context of Kazakhstan and Uzbekistan, is an important task. According to researchers, this category plays a key role in shaping and developing the younger generation, as they are responsible for the upbringing of future citizens of the country. Therefore, developing the professional culture of training future teachers at the necessary level within higher pedagogical education becomes an important aspect of educational policy. Special attention should be paid to the preparation of inclusive education teachers, considering their important role in the education system.

The aim of the research is to study the peculiarities of improving the future professional activities of practitioners and the process of forming competencies among future defectologist-teachers.

II. MATERIALS AND METHODS

To explicitly define and present the research methodology for preparing defectologist-teachers, the study employed a structured approach encompassing diagnostic, intervention, and evaluation stages. Control methods, including surveys and natural observations, were used to gather data on the professional readiness of first-year students divided into experimental and control groups. Specific directions for developing pedagogical readiness were implemented over three years in the experimental group, including targeted training, pedagogical support, and simulated real-world scenarios such as creating individualized educational programs and adapting teaching methods. After three years, a follow-up diagnostic study compared the two groups, with data systematically analyzed and visualized through graphs to identify trends, assess intervention effectiveness, and refine strategies for future applications.

Control methods, including surveys and observation in natural conditions, were used to gather objective information about the development of professional skills among future defectologist-teachers. The research process began with a diagnostic stage, during which data were analysed among first-year students divided into experimental and control groups. Based on the results of this research, specific directions for developing readiness for pedagogical activities among future defectologist-teachers were determined. These interventions were implemented in the educational process of the experimental group over three years. During the process, students received appropriate training and pedagogical support aimed at developing necessary skills and competencies. After the three-year period of implementing new methods and approaches, a follow-up diagnostic study was conducted to compare the results between the control and experimental groups. This allowed for assessing the effectiveness of the implemented changes and identifying differences in readiness for pedagogical activities between the two groups of students. Information synthesis was used to summarize data on preparing defectologist-teachers to work with children with special educational needs. The experiment was conducted in conditions closely resembling real situations in correctional pedagogical practice to enhance the practice of future defectologist-teachers. During the experiment, students were exposed to various scenarios and tasks they might encounter in their future professional activities. Experiment conditions included simulating typical situations faced by defectologist-teachers when working with children with special educational needs. This included tasks related to developing individualized educational programs, creating adapted educational materials, developing correctional work methods, and more. After conducting the experiments, data were collected through surveys, systematized, and numerically analysed. This analysis helped identify patterns and trends in the experiment results. The data were presented in the form of graphs to facilitate the visual perception of the obtained results, and a detailed study of the results was conducted to identify the characteristics of correctional pedagogical activities and the effectiveness of the applied methods.

This research was conducted at the Kazakh National Pedagogical University named after Abai (Almaty, Republic of Kazakhstan) and the South Kazakhstan University named after M. Auezov (Shymkent, Republic of Kazakhstan). The total number of participants was 116 students from these two universities, divided into experimental and control groups (58 respondents in each group). This scientific research consisted of several stages. At the initial stage, a literature review was conducted to study the relevance of the researched problem and identify psychological characteristics of behaviour in the context of professional orientation. The review included examining the principle of the unity of education and upbringing theory. The main part of the research focused on studying models of creative abilities' development, as well as conducting combined experiments to change traditional approaches in educational activities in general and in the learning process in particular. In the final stage of the scientific research, the results of the work were summarized, analysed, and systematized, highlighting specific facts related to the researched problem.

The study makes a significant theoretical contribution by developing and validating a comprehensive framework for preparing defectologist-teachers, which integrates pedagogical, psychological, and methodological strategies tailored for inclusive education. Its practical contribution lies in providing evidence-based interventions and training methodologies that enhance the readiness of defectologist-teachers to address real-world challenges, thus offering actionable insights for improving special education programs and policies in Kazakhstan and beyond.

III. RESULTS

The idea of inclusion in education is that every student, regardless of their individual characteristics and needs, should have the opportunity to participate in social life and receive education within a school environment

that meets their needs and abilities. This also entails creating communities within schools and classrooms where every student feels accepted and included.

Inclusion, in the context of education, is a dynamic process aimed at identifying and overcoming barriers to access, learning, and achievement for all students [11, 12]. This process seeks to ensure equal opportunities for all learners, regardless of their abilities, characteristics, or individual needs. Within inclusive education, attention is given to creating an environment that actively involves every student in the educational process and supports them in their learning efforts. Inclusive education involves creating an educational environment that is open to all students, regardless of their individual characteristics, including children with special educational needs. In this environment, every student receives the support and resources necessary for their full participation in the learning process and school social life. The goal of inclusion is for every student to develop according to their abilities and preferences, while receiving support and attention from the teaching staff and peers [13]. This helps to create more equal opportunities for all students and promotes the development of their potential. Thus, inclusive education aims to create an educational environment that meets the needs of every student and facilitates their full participation in school and societal life [14]. This requires not only adapting educational programs and teaching methods, but also creating supportive and inclusive communities where every student feels part of a collective and has the opportunity to realize their potential.

Teachers play a crucial role in implementing the concept of inclusive education, where all students, including those with special educational needs, learn together in the same classroom. However, many teachers have negative or indifferent attitudes towards the inclusion of children with special needs in regular schools [15, 16]. Therefore, it is important to provide general education teachers with training and familiarization with the methods and practices of special education teachers who specialize in teaching children with various special needs.

The development of future special education teachers' readiness to enhance their professional activities plays an important role for several reasons. Special education teachers work with children who have developmental differences or special educational needs. Training such teachers requires a deep understanding of the characteristics of children with various types of disabilities or developmental delays, as well as methods, strategies, and technologies that can be effectively used to teach them. The work of special education teachers includes collaboration with parents, other professionals, and social services. They must be able to effectively interact with these stakeholders to ensure coordination of efforts and achieve the best results for children. It is also important for special education teachers to be prepared for continuous professional development and adaptation to changing needs and requirements in the educational field. This includes not only acquiring new knowledge and skills, but also readiness to embrace innovations and experiments in the field of teaching and supporting children with special educational needs. The development of special education teachers' readiness to enhance their professional activities contributes to improving the quality of education for children with special needs and creating a more inclusive educational environment where every child has equal opportunities for learning and development.

The integration of special education teachers into the education system begins with their training in higher education institutions. This allows them to acquire the necessary competencies and strategies for effectively working with students with special needs and addressing the challenges associated with inclusive education. The positive attitude of teachers is a key factor in the successful implementation of inclusive education. Belief in the value and importance of including all students in the educational process contributes to creating a supportive and inclusive learning environment. The task of special education teachers is not only to ensure the adaptation and support of children with special needs, but also to assist general education teachers in mastering methods and strategies that enable successful integration of all students into the educational process. This emphasizes the need for collaboration and exchange of experiences between different categories of teachers. Thus, active involvement of special education teachers and their interaction with general education teachers are key aspects in the successful implementation of inclusive education. However, to achieve positive results, it is necessary not only to provide training for special education teachers but also to create conditions for their practical collaboration, including mechanisms for sharing experiences and support in the process of learning and adapting to new methods of work.

Effective application of innovative methods and forms of education using coaching technology represents a significant stage in the professional training of future special educators. Their goal is to cultivate college students with innovative thinking, the development of a world-view culture, as well as the formation of highly developed communicative and intellectual skills. The aim of such an approach is to create conditions for active interaction

between students and teachers, and other participants in the educational process, in order to stimulate self-development and self-realization of each learner [17]. The responsibility for developing the intellectual potential of society and shaping the personality of the 21st century is entrusted to a new format of educator capable of effectively applying innovative pedagogical methods, including coaching. Such an approach enables the formation of not only professional skills but also a deep understanding of socio-cultural and educational processes necessary for successful work in the modern educational space.

Optimizing the productivity of teachers in the field of special education requires a detailed identification of the problems they encounter within the scope of their practical activities. The key advantage of clarifying teachers' opinions is the formation of a basis for developing effective strategies and rules aimed at creating a favourable educational environment for all children. Teachers working in the field of special education face a wide range of issues, including aspects of teaching and the behavioural characteristics of their students, interaction with other school staff, the physical characteristics of educational institutions and classrooms, as well as the adaptation of programs and the development of educational materials [18, 19]. Addressing the problems encountered by teachers in the field of special education requires a comprehensive approach and the application of various strategies (Table 1).

Table 1. Strategies for addressing the problems faced by defectologist-teachers in the field of special education.

No.	Strategy	Description
1	Training and support	Providing teachers with access to professional support and training in teaching methods for children with special educational needs can significantly improve their effectiveness
2	Individualization of training	Developing individualized curricula and approaches that meet the needs of each student helps overcome challenges associated with student diversity and background levels
3	Collaboration with other specialists	Establishing close collaboration with other professionals such as psychologists, speech therapists, and social workers helps address students' behavioural and emotional problems
4	Updating materials and programs	Constant updating of educational materials and programs, considering modern methods and new scientific data, helps to increase the effectiveness of training
5	Use of technology	The integration of modern educational technologies, such as interactive programs and specialized applications, can make the learning process more accessible and attractive for students with special educational needs
6	Ensuring accessibility	Development and implementation of programs to adapt educational institutions and classes to ensure accessibility of the educational process for all students
7	Support for parents and carers	Partnering with students' families and providing information support and resources to parents and caregivers also plays an important role in addressing special education issues

Source: compiled by the authors.

These approaches can help overcome various challenges faced by teachers working with students with special educational needs and create a conducive educational environment for all participants in the educational process. The COVID-19 pandemic has led to a sharp transition to distance learning, revealing both old and new problems in the field of educational inequality. However, this situation has also provided an opportunity to rethink the concept of inclusive education [20, 21]. During the pandemic, the combination of digital and traditional technologies presented a challenge to the Eurocentric concept of digital divide, aimed at ensuring an inclusive experience. Drawing on local resources and historical data, as well as recognizing the value of non-scientific knowledge, especially in the context of blended learning perspectives, the article aims to provide political tools for revising existing understandings of inclusive education.

The development of teachers' digital competence in the 21st century is a critical aspect of modern education, especially in the context of contemporary challenges and demands for the preparation of education professionals [22]. Due to the nature of working with children with speech impairments and other special needs, special education teachers face unique challenges that can be successfully addressed with the help of digital technologies. Developing digital competence enables special education teachers to innovate in correctional work and effectively use digital tools to individualize learning and support students with special educational needs. This includes creating specialized digital materials and applications adapted to the needs of children with speech impairments, as well as developing online courses and learning programs that promote the integration of children with special needs into the general educational process. Furthermore, the development of digital

competence among special education teachers enables them to effectively collaborate with parents and other professionals, creating interdisciplinary teams to address complex educational challenges. They can use digital platforms and communication tools to organize collaborative work, exchange information, and coordinate efforts in correctional practice [23]. Thus, the development of digital competence plays an important role in improving the quality of education for children with special needs and effectively supporting special education teachers in their professional activities. Further research and development of this aspect of teacher training in higher education will be a key factor in improving correctional work and ensuring the successful integration of children with special educational needs into society.

However, for the effective integration of digital technologies into the context of inclusive education, attention must be paid not only to their technical aspects but also to socio-cultural and ethical issues [24, 25]. Comprehensive research into these aspects should include an analysis of the potential risks and benefits of using technologies in the educational process. Additionally, it is important to develop appropriate teaching and support strategies for special education teachers considering the integration of digital resources into their work to ensure quality education for all students. An experiment was conducted in the study aimed at preparing future special education teachers for pedagogical activities. To achieve this goal, a series of measures were taken, including correctional and pedagogical activities.

The experimental group of students was provided with additional courses and recommendations to engage in additional activities during three years of study to improve their preparation within the program for the formation of readiness for pedagogical activities as future special education teachers. This additional set of activities included various aspects aimed at expanding professional competencies and increasing the effectiveness of the educational process. Students were offered additional training in professional communication, which included developing skills for effective communication with different categories of students and their parents, as well as with colleagues and other specialists in the field of special education. Students received additional classes in diagnostics, which allowed them to learn how to effectively identify the characteristics of development and learning of children with special educational needs and apply appropriate correctional methods. Additionally, part of the additional activities was devoted to developing research skills, which helped students master methods of data analysis and interpretation, as well as conduct educational research in the field of special education. The basics of a person-centred approach to education were also included in the program to help students develop an understanding of the individual needs and characteristics of each learner, as well as the ability to create a conducive educational environment conducive to successful learning and development of children with special educational needs. Changes in the conditions of pedagogical practice included students' participation in real correctional and pedagogical projects and program activities, which allowed them to apply the knowledge and skills acquired in practice and receive feedback from experienced educators and mentors.

As a result of the research in the experimental group, through surveys of experiment participants, a significant increase in both personal and professional readiness for pedagogical activity compared to the control group was identified. This indicates the achievement of the ultimate goal of forming the readiness of future special education teachers for pedagogical activity. The inclusion of special courses aimed to systematize and deepen theoretical knowledge, as well as to awaken students' professional interest in the problems of person-centred education. Thematic training is aimed at developing creative potential, forming communication skills, and self-regulation of personality.

Key indicators reflecting the readiness of future special education teachers for professional activity were identified in the experiment. These indicators were used to verify the representativeness of the conclusions about the effectiveness of the conducted research. The main aspects requiring study and analysis were personal and professional readiness. Indicators of personal readiness included creative potential (reflection and flexibility of thinking), extraversion (empathy and self-regulation), as well as mastery of professionally significant knowledge and skills. Indicators of professional readiness covered orientation towards mastering professionally significant knowledge and skills. After the experiment, a repeated diagnostic study was conducted to compare the results of the control and experimental groups. Based on the theoretical analysis of the indicators of readiness for professional activity, three levels of readiness of future special education teachers as subjects of correctional pedagogical activity were identified. Each level is represented by a combination of various indicators identified during the diagnostic study (Figure 1).

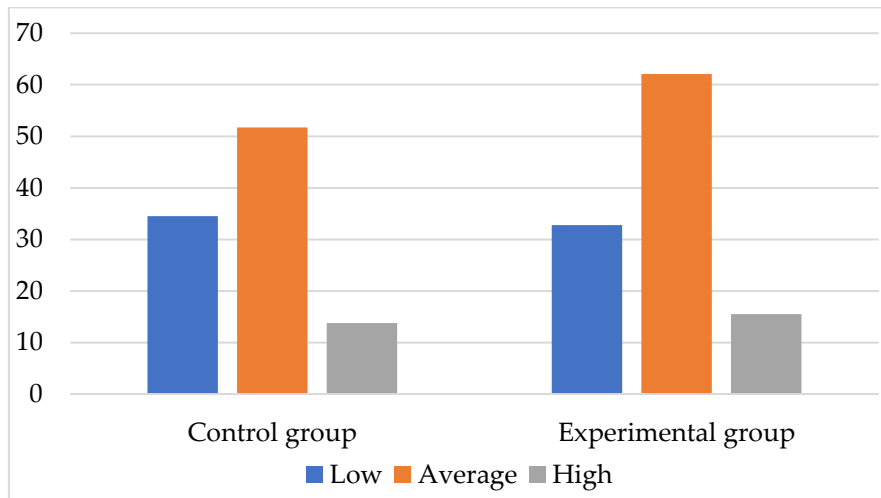


FIGURE 1. Levels of readiness of future defectologist-teachers as subjects of correctional pedagogical activities based on preliminary diagnostics.

Source: compiled by the authors.

The results of socio-psychological measurements of the level of readiness of future teachers for correctional-pedagogical activities were obtained during the experimental research. Analysis of professional readiness at the initial and final stages of experimental activity led to the following conclusions. In the initial period of the experiment, low results were observed in terms of orientation towards a specific model of interaction with children and professional competence in both the control and experimental groups. By the end of the experiment, there was a significant improvement in professional readiness among participants in the experimental group. A significant growth of participants was observed in this group. On the other hand, such growth was less noticeable in the control group. Analysis of the experiment results showed that professional competence in the field of correctional-pedagogical activities significantly increased in the experimental group (Figure 2).

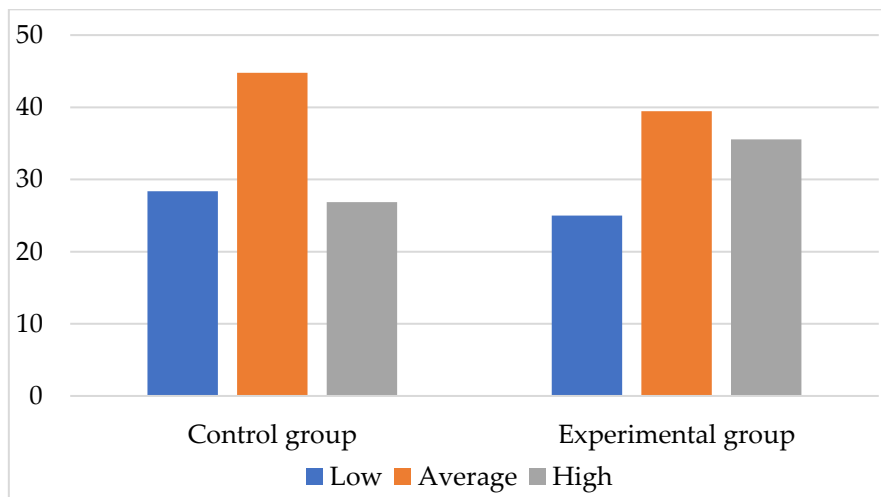


FIGURE 2. Levels of readiness in future defectologist-teachers as subjects of correctional pedagogical activities after completion of the experiment

Source: compiled by the authors.

Comparison of the initial and final diagnostic data between the control and experimental groups revealed significant positive dynamics in the development of professional readiness in the experimental group. This result

is an indicator of the success of the methods and strategies applied in the experiment for forming professional competence among the participants. The positive dynamics indicate that the methods and training programs implemented in the experiment were effective and contributed to a significant improvement in professional preparedness in this field.

The idea of inclusion in education, effective utilization of innovative teaching methods, development of digital competence among special education teachers, and optimization of performance in the field of special education are important aspects that contribute to creating a more inclusive and supportive educational environment for all students. They reflect the commitment to providing equal opportunities and successful adaptation of the educational process to the individual needs of each student.

IV. DISCUSSION

The concept of inclusive education, aimed at providing equal opportunities for all students, including those with special educational needs, requires an active role from teachers, especially special education teachers. The effective application of innovative teaching methods, including coaching technology, and the development of digital competence among special education teachers play a crucial role in modern education. Optimizing the performance of teachers in the field of special education requires a comprehensive approach, including training, individualization of teaching, and collaboration with other specialists. The results of this research offer important aspects for analysis and comparison with previous scientific studies.

Based on the results presented in this study, it is important to ensure the professional training of special education teachers to work in inclusive classrooms, which includes acquiring knowledge and skills in adapting teaching, classroom management, and supporting diversity in the learning process. Inclusive education not only contributes to the individual development of each student but also lays the foundation for building a more just and inclusive society as a whole. In particular, as noted by S. Woodcock et al. [26], the philosophy of inclusive education emphasizes the importance of recognizing the unique strengths and individual needs of each student in learning. According to researchers, this approach implies that educational systems should recognize this diversity and provide opportunities for all students, including those with special needs, to develop their potential within regular classes in local schools. Researchers note that inclusive education aims to ensure that each student receives education in an environment that meets their unique needs and abilities. This, according to the researchers, entails creating a supportive environment where each student can feel accepted and valued member of society despite their differences.

Taking into account the results of this research, it becomes clear that special education teachers indeed play a key role in inclusive education, and their experience and competencies in using digital technologies become critically important factors in providing access to education and supporting all students, including those with special needs. In turn, the study conducted by H. Coker and D. Mercieca [27] makes a significant contribution to understanding the role of teachers and their experience in using digital technologies as a fundamental aspect of social justice in the 21st century. According to researchers, in modern society, where ensuring inclusive and equitable education for all students is a key goal, the role of teachers is recognized as critically important. Researchers emphasize that factors influencing the use of digital technologies by teachers are oriented towards social structures and institutions that contribute to equal participation and inclusivity in society.

In conformity with the data presented above, it can be concluded that the development of future special education teachers' readiness to improve their professional activities is a critical step in creating a conducive educational environment for children with special educational needs. At the same time, the study conducted by F.C. Allam and M.M. Martin [28] found that classes designed to educate children with limited abilities are often not equipped with suitable learning environments to support their readiness to develop flexible professional skills. Insufficient funding, lack of teaching resources, materials, and even suitable premises for learning create significant obstacles in creating a conducive educational environment. Researchers note that students with limited abilities are often deprived of the necessary support and services to access educational resources, as well as support from stakeholders, which hinders meeting their educational needs in the school environment.

Given the results presented in the previous section of the study, it is worth noting that the development of digital competence among special education teachers is also one of the important aspects of modern education, especially in the context of working with children with special educational needs. This is because the use of digital technologies allows for effective individualization of education and support for students with diverse needs, thus contributing to their successful adaptation and development. According to researchers F. Caena and C. Redecker

[29], educators of the 21st century must update their professional competencies to effectively address the challenges facing education. They emphasize the need to change teaching strategies and develop new competencies necessary to support the diverse needs of students in the modern world. Researchers note that the European model of digital competence for teachers is an example of a systemic approach to analysing these needs. They link the development of digital skills among teachers and students to an increase in institutional potential. They emphasize the importance of integrating digital technologies into the educational process to improve the quality of education and provide students with opportunities for development in line with the demands of the modern world.

Based on the results of this research, digital technologies in the modern world are a key tool not only in the training of special education teachers but also in their professional practice. They contribute to creating a more accessible and inclusive educational environment, providing diverse learning and interaction opportunities for students with special educational needs. However, for the effective use of digital technologies in inclusive education, it is necessary to consider not only their technical aspects but also socio-cultural and ethical issues, as noted in the previous section of this research. It is important to conduct comprehensive research, taking into account the potential risks and benefits of using technologies in the educational process, and to develop appropriate teaching and support strategies for special education teachers so that they can effectively integrate digital resources into their work and provide quality education for all students. Researchers such as D. Goodley et al. [30] have found that inclusion and education often face contradictions. They note that the challenges of inclusive education cannot be ignored when considering the prospects of new technologies. Despite the potential of technologies to expand access to education, deeply rooted problems of social isolation still exist. Researchers have identified positive opportunities for interaction between disability and new technologies, but they acknowledge urgent problems that inclusive educators face when integrating disability and technology into the educational process. Research highlights the importance of considering accessibility and instructional design when implementing digital technologies in inclusive education practice.

Through comparative analysis, it is worth noting that inclusive education plays a key role in ensuring equal opportunities for all students, including those with special needs and individual requirements. The philosophy of inclusive education emphasizes the importance of recognizing the unique strengths and individual needs of each student in their learning, creating a supportive environment where every student can feel accepted and valued, regardless of their differences. However, existing obstacles such as lack of funding and material resources, as well as insufficient support and services for students with disabilities, pose challenges to creating a conducive educational environment. The professional training of special education teachers and the development of their readiness to adapt teaching and support the diversity of students in the learning process play a key role in overcoming these challenges and creating a more just and inclusive education. In contemporary education, educators play a pivotal role, needing to update their professional competencies to effectively address the challenges facing education. In particular, the development of digital skills is an important aspect of this process, as digital technologies can significantly improve the quality of education and provide students with the opportunity to develop in line with the demands of the modern world. However, for the successful integration of digital technologies into the educational process, socio-cultural and ethical aspects must be considered, along with the development of appropriate teaching and support strategies for educators.

Supporting diversity among students in the learning process and adapting teaching to individual needs are important tasks for 21st-century educators. In this context, inclusive education, oriented towards recognizing the unique strengths and needs of each student, plays a key role in creating a fair and inclusive educational environment. Thus, modern educators must develop not only digital skills but also competencies in the field of inclusive education to ensure quality education for all students.

V. CONCLUSIONS

The idea of inclusion in education is about providing equal opportunities for all students, including those with special needs and individual requirements. This process involves creating supportive environments and communities where every student feels accepted and included. Teachers play a key role in implementing this concept, especially special education teachers who work with children with special educational needs. Developing their readiness to improve their professional activities is an important aspect because it contributes to the enhancement of the quality of education for all students and the creation of a more inclusive educational

environment. Active involvement of special education teachers and their collaboration with general education teachers is necessary for the successful implementation of inclusive education.

Effective use of innovative methods and forms of teaching, including coaching technology, is an important stage in preparing future special education teachers. This approach aims at developing innovative thinking, world-view culture, and communication skills in students. Developing such skills contributes to creating conditions for self-development and self-realization of each learner. The development of digital competence among special education teachers plays an important role in modern education, especially in the context of working with children with special educational needs. This process enables special education teachers to effectively use digital technologies for individualizing education, creating specialized materials and applications, as well as collaborating with other specialists and parents. Developing this competence is a significant step towards improving the quality of education for children with special needs and successfully integrating them into society. Further research and development of this aspect of teacher education in higher education are necessary for improving correctional work and ensuring the full development of every child.

Optimizing the performance of teachers in special education requires a detailed study of the problems they face in their daily practice. Applying various strategies such as training and support, individualizing education, collaborating with other specialists, updating materials and programs, using technology, ensuring accessibility, and supporting parents help overcome these problems and create a conducive educational environment for all participants in the educational process. The presented research results emphasize significant progress in the process of forming professional readiness among participants in the experimental group compared to the control group. This reflects the success of the applied methods and teaching strategies, which led to a noticeable improvement in professional competence in the research area. The positive dynamics identified during the analysis of the initial and final diagnostic results indicate the effectiveness of the activities carried out within the experimental group. This progress confirms the relevance and significance of the methods and educational approaches used in the context of forming the professional readiness of future special education teachers. Such results can serve as a basis for further improvement of educational programs and methodology for training specialists in this field. Researchers are recommended to focus on studying the effectiveness of existing methods and approaches to training future special education teachers and to propose recommendations for their improvement. Finally, collaboration with schools and specialized institutions could enhance the practical training of future defectologist-teachers, ensuring that they are better equipped to meet the diverse needs of children with special educational needs.

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Authors Contribution

All authors contributed equally to the development, design, and execution of this study.

Conflict of Interest

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