



Improving Technologies For Preparing Primary School Teachers For Inclusive Education In The Conditions Of An Educational Cluster

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Abstract: The article presents the results of experimental work aimed at improving technologies for preparing primary school teachers for inclusive education within an educational cluster. The study was conducted in four schools across the Khorezm, Syrdarya, and Tashkent regions, involving 417 primary teachers. Methodologies included questionnaires, observations, testing, pedagogical experiments, and statistical processing. The study emphasized the sustainable involvement of family members to meet students' individual educational needs. A model was developed that integrates correctional-developmental didactic blocks and principles of humanism, prioritizing student socialization within the "Education-Society-State" framework and tailoring education to each child's academic potential in a supportive environment. The didactic approach was enhanced through the continuous integration of modular technologies, fostering an active and dialogical professional training process. This approach meets the requirements for educational integrity, diagnostic accuracy, and flexibility, ultimately improving the preparedness of primary school teachers for inclusive education.

Keywords: Inclusive education, technology, education, primary school

Introduction

In contemporary global education, there is an increasing demand to create learning environments that are flexible to the diverse needs of learners and to utilize varied curricula. The United Nations' educational policy emphasizes the widespread implementation of inclusive education, ensuring that the educational needs of all children, including those with special needs, are met. UNESCO's programs, which aim to safeguard human rights and freedoms, focus on modernizing norms, standards, and intellectual cooperation to provide safe



and comfortable education for both children and adults with special educational needs. Implementing the principles of social equality as outlined in the Universal Declaration of Human Rights necessitates educational mechanisms that are inclusive and based on gender equality. Worldwide, numerous scientific studies explore innovative technologies for primary education, enhancing the organizational and methodological components of the educational process, and improving the didactic systems essential for quality personnel training across various fields. In this context, it is crucial to increase the effectiveness of inclusive education by clarifying the theoretical-pedagogical aspects and the organizational-methodological and psychological preparation of teachers working with children with special educational needs. Ensuring that children with disabilities receive education alongside their healthy peers in primary education requires targeted cooperation and integrative measures between various organizations. The role of teachers is pivotal in organizing uniformly high-quality education for all children within the educational cluster. Enhancing pedagogical literacy among parents and the general public, as well as improving the quality of teaching in primary education, is essential. This involves effectively organizing the educational environment according to students' capabilities, adhering to state educational standards, and strengthening collaboration between organizations and public institutions. Addressing these socio-pedagogical issues necessitates cooperative efforts between educational and health organizations to provide quality educational services to children with disabilities. It involves defining didactic requirements for inclusive classes, organizational factors, pedagogical-psychological conditions, and the methodological skills of primary school teachers. The purpose of this study is to identify effective factors and develop technologies to prepare primary school teachers for inclusive education within the framework of an educational cluster.

Method

On the basis of national and foreign experiments on the preparation of primary school teachers for inclusive education and the study of literature, experimental and test work was carried out in 3 stages on the formation and implementation of the “model for the preparation of Primary School teachers for inclusive education” and the study of its effectiveness.

Pedagogical experience in preparing primary school teachers to work with students with disabilities, as well as healthy children, in an inclusive educational environment, in three stages: identification, formation, analysis of results.



Stage One: Determination Stage

At this stage, the subjects related to the organizational and psychological, pedagogical, methodological training of teachers in inclusive education were studied in the content of educational plans, educational and methodological complexes of courses for the professional development of pedagogical personnel of the public education system, as well as the amount of hours. In addition, at this stage, the state of reflection of questions related to inclusive education, differential work with students, innovative forms of work in cooperation with students 'parents, assessment of students' activities was also studied separately in the composition of test Questions held in the qualification courses of elementary teachers.

At this stage, questionnaire requests for primary school teachers were developed. The content of the questionnaire surveys was mainly focused on the issues of preparing primary school teachers for Inclusive Education. That is, in the context of inclusive education, it was formed from questions and assignments regarding effective work with students of various opportunities. The content of the questionnaire surveys also asked questions about the forms of working with parents, cooperation with them, as well as the methods of work. At the initial, detection stage of experimental work, the levels of readiness of primary school teachers for frontal and solo work with students of various opportunities in the conditions of inclusive education were determined:

Level 3-low. If the listener makes more than 5 mistakes in the implementation of 15 questions and tasks compiled on the essence, didactic features and organizational and pedagogical aspects of inclusive education, it was evaluated in this criterion. This criterion can be called the knowledge of frontal and solitary work with healthy and disadvantaged children in conditions of inclusive education at a minimum level of demand, that is, theoretical awareness of common issues.

Level 2-Middle. If the listener makes a maximum of 5 mistakes when completing 15 questions and assignments, it was evaluated in this criterion.

This criterion is characterized by a sufficient amount of professional knowledge, skills and qualifications necessary for an elementary school teacher to work with students of various opportunities in inclusive education and the content of elements of inclusive competence.

Level 1-High. If the listener makes at most 3 Mistakes When completing assignments, it was evaluated in this criterion. This criterion is characterized by



the highest level of knowledge of frontal and solo work with healthy and disadvantaged children in an inclusive educational environment, the ability to adaptively apply knowledge, skills and qualifications related to inclusive education, as well as creative self-awareness of teacher-listeners.

The initial experimental and test work revealed the need for an organizational and pedagogical model to prepare primary school teachers for inclusive education. This model aims to equip teachers to work with both healthy and disadvantaged children.

Stage Two: Formation Stage

A "professional development program within the course" was developed for educational pilot work. This included a seminar titled "Inclusive Education: Problems, Solutions, Future Plans," which aimed to prepare teachers for inclusive education. During this workshop, teachers were trained and assignments were designed to enhance their readiness for inclusive education. Key observations indicated that teachers faced challenges in creating assignments for students with varying abilities without deviating from the curriculum. Therefore, special professional competencies were emphasized. The training focused on preparing academic keys—assignments crafted from subjects like mathematics, native language, and natural sciences—based on a concentric method. This method involves revisiting previously mastered material to address new challenges, promoting an integrative approach across disciplines.

Key Components of Teacher Training:

1. Developing specific tasks suitable for students in collaboration with psychologists and defectologists.
2. Ensuring students complete these tasks during lessons.
3. Controlling and assessing students' practical educational activities.

Stage Three: Implementation Stage

The formative stage aimed at integrating primary school teachers into inclusive educational practices. It focused on improving the methodological, organizational, pedagogical, and psychological training model, drawing on both foreign and national experiences. The goals included:

1. Identifying effective teaching forms, methods, and means for preparing primary school teachers to work in an inclusive environment.
2. Enhancing scientific and methodological support for both online and offline advanced training courses. This included the development and implementation



of academic keys for 20 subjects in grades 1-4 from mathematics, mother tongue, and natural sciences.

Finally, the third stage evaluated the professional knowledge, skills, and competencies in inclusive education acquired by the teachers through the course program and seminar.

Results and Discussion

The implementation of the model for the effective preparation of primary school teachers for inclusive education was carried out through experimental and test work. To determine the professional difficulties faced by pedagogical workers in the education and upbringing of children with health restrictions, a survey was conducted with 194 educators from the Regional Center for Retraining and Professional Development of People's Education Employees of the Tashkent region. In their responses, some educators wrote comments in their questionnaires such as, "I really want to help, but I do not know how to help," "Unfortunately, I do not have special education," "I work in an ordinary school, not in a correctional school," and "My work is teaching; correction, psychology, and defectology should be handled by specialists." Furthermore, 73% of educators confirmed that they need assistance in organizing the educational process for children with health restrictions.

The results of mastering at the beginning of the experience of the listeners of the course of professional development in the cross section of Regions

Table 1

Name of region	at the beginning of the experiment					
	Criteria					
	High		Middle		Low	
	Number	and	Number	and	Number	and
	Percent		Percent		Percent	
Khorezm (114 teachers)	32	28,1%	48	42,1%	34	29,8%
Syrdarya (107 teachers)	21	19,6%	46	43 %	40	37,4%
Tashkent (193 teachers)	43	22,3%	68	35,2%	82	42,5%
Total	96	23,2%	162	39,1%	156	37,7%



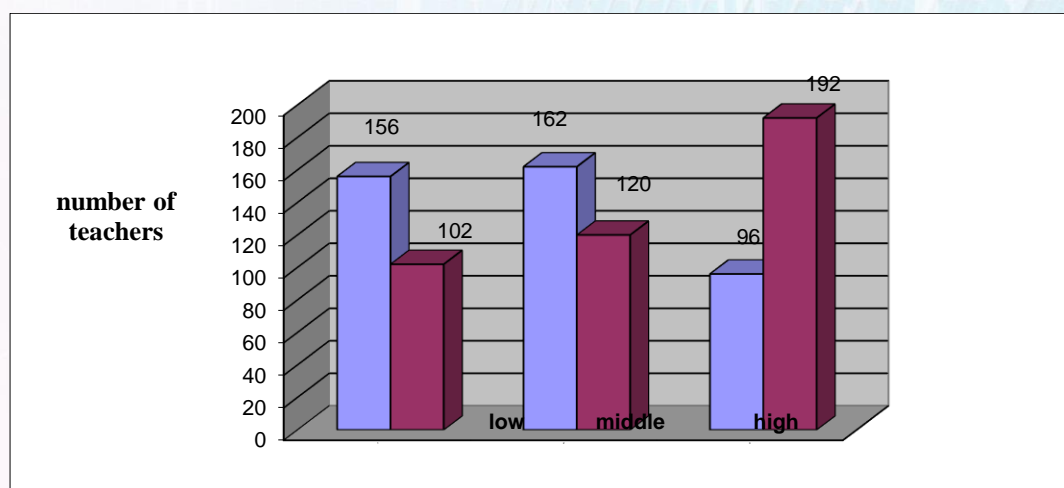
The results of the audience after training on the basis of seminar programs after the implementation of the Model were as follows:

Table 2

Name of region	at the end of the experiment					
	Criteria					
	High		Middle		Low	
	Number	and Percent	Number	and Percent	Number	and Percent
Khorezm (114 teachers)	58	50,9%	33	28,9%	23	20,2%
Syrdarya (107 teachers)	53	49,5%	33	30,9%	21	19,6%
Tashkent (193 teachers)	81	42%	54	28%	58	30%
Total	192	46,4%	120	29%	102	24,6%

The diagram corresponding to this data takes the look as follows:

Figure 1



beginning of the experience ending of the experience

In the research process, the experimental and test work were carried out in three stages based on nationwide and private-methodological principles such as



identification, formation, analysis of results, and systematic organization. These principles emphasized integrity, objectivity, efficiency, scientific rigor, humane approaches to students' personalities, the necessity and sufficiency of scientific information, and the versatility of scientific and methodological advice. A total of 414 participants were involved in the pilot work from various educational institutions. Among them, 114 were from the Center for Teaching Educators in New Methodologies of Khorezm region, 107 from the Center for Teaching Educators in New Methodologies of Syrdarya region, and 193 from the Center for Teaching Educators in New Methodologies of Tashkent region. To validate the results obtained from the experimental testing process, the average scores at the beginning and end of the experiment were analyzed. This analysis was conducted to determine the effectiveness of the initial study on the readiness of primary school teachers for inclusive education. The motivational, cognitive, practical-methodological, and reflexive components of preparing elementary school teachers for inclusive education within an educational cluster showed significant improvement. The efficiency indicator increased by 1.12, or 12%, as proven by statistical methods.

Conclusions

Research on the topic "improving technologies for preparing primary school teachers for inclusive education in the conditions of an educational cluster" has served to substantiate the following conclusions:

1. Today, the organization of lifelong quality education of children and adults with disabilities is recognized as the basis in assessing the optimal results of the modernization of the educational system at an international level. Because the development of the country and its place in the arena of the whole world are graded by the conditions created in it for people with disabilities, women and the elderly. Therefore, the legal and regulatory framework of Inclusive Education, recognized as a factor in the early socialization of children with disabilities in Uzbekistan, has been strengthened. Inclusive education is a socio-pedagogical educational process based on the relationship of children in the same conditions, didactically provided, psychologically comfortable, variative approaches and Tolerance, who are healthy and have a special need in education.
2. When inclusive education begins with preschool education, the chances of achieving the expected results will be wide if approaches based on its results will be implemented in further education. However, when educators are not



purposefully prepared for this process, a number of obstacles arise in achieving these results. It is natural that these obstacles meet both in the family and in the educational institution and, of course, in the neighborhood. Despite the fact that various aspects of the problem of professional training of primary school teachers for the implementation of inclusive education are the focus of many authors, it is important to note that in the context of the educational cluster, there is not enough research on the formation of an educator's readiness to carry out inclusive education and the study of organizational and pedagogical conditions.

In the preparation of primary school teachers for Inclusive Education, attention was paid to their psychological, pedagogical, motivational and reflexive training. Because motivational preparation requires the teacher to have a purposeful orientation towards the same reception of each child. To do this, teachers should be able to analyze the pedagogical and psychological capabilities of children with disabilities, be in a relationship of patience and tolerance towards them.

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