

**ПСИХОЛОГИЧЕСКАЯ НАУКА  
И ОБРАЗОВАНИЕ**


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**PSYCHOLOGICAL SCIENCE  
AND EDUCATION**

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**ИНКЛЮЗИВНОЕ  
ВЫСШЕЕ ОБРАЗОВАНИЕ  
В РОССИИ: ВЕКТОРЫ  
СТРАТЕГИЧЕСКОГО РАЗВИТИЯ**

**INCLUSIVE HIGHER  
EDUCATION IN RUSSIA:  
VECTORS OF STRATEGIC  
DEVELOPMENT**

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Тематические редакторы: В.В. Рубцов, Г.Г. Сaitгалиева

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# **PSYCHOLOGICAL SCIENCE AND EDUCATION**

**INCLUSIVE HIGHER EDUCATION IN RUSSIA: VECTORS  
OF STRATEGIC DEVELOPMENT**

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## Dear Readers!

Here you have the thematic issue of our journal called "*Inclusive Higher Education in Russia: Vectors of Strategic Development.*" The relevance and demand for the tasks described here are due to the fact that, in recent years, the number of students with disabilities studying in higher education programs in Russian universities has significantly increased. According to the Federal State Statistics Service, the total number of people with disabilities on January 1, 2022, was 11,331 thousand, among them 521 thousand people aged 8—17, and 490 thousand aged 18—30. According to preliminary data from the monitoring of inclusive higher education collected by the Ministry of Science and Higher Education of the Russian Federation in 2022, the total number of students with disabilities was 33,368 people (for comparison, as of September 1, 2021, the number of such students in higher education institutions was 31,100 people).

The growth of the number of students with disabilities proves effective state policy in the field of creating conditions for higher and professional education for persons with special needs on the one hand. On the other hand, indicates the need to pay special attention to the process of inclusion development in higher education institutions in the country in order to provide the opportunity for a person with disabilities to choose an educational organization at the place of residence and to expand the range of educational programs available.

In Russia, the term "inclusive education" was legislated in 2012. Today, "inclusive education" (Federal Law No. 273, p. 27, article 2) means providing equal access to education for all students, taking into account the diversity of their special educational needs and individual capabilities. At the same time, inclusive processes in Russian universities remain terra incognita. According to researchers who analyze the scientific development of the problems of inclusive higher education, this scientific field is insufficiently studied. Many problem fields of inclusion in higher education remain in the shadows. At the same time, it's important to understand how to build a comfortable, inclusive environment in educational organizations. This way, the further strategy for the development of inclusive education in Russia will be elaborated, work with this category of students will be improved, and requests that come from the subjects of the educational process, government agencies, and society will be considered.

Today, the image of a person with disabilities and the perception of his or her needs and opportunities are being transformed. Under these conditions, both the models of functioning of social institutions, in particular education, and people—their way of life, forms of education, activities, thinking, behavior, and communication—are changing. The educational and social practices of teaching and employment of persons with disabilities are also being transformed. It is the most important component of the development of inclusive higher education and the improvement of the quality of life for people with disabilities.

The introduction of inclusion in higher education required the restructuring of the existing processes. It also promoted the search for completely new approaches to the structure of the educational process in higher education institutions and the development and testing of innovative educational methods and practices. The main idea of inclusive education is to go from full inclusion in education to **full social inclusion** and complete social functioning of a person with disabilities as a subject of social activity.

Today it acquires a new meaning; it's how to get from inclusion in education to social inclusion.

It is obvious that not all higher education institutions in the Russian Federation are fully prepared to implement inclusive education for students with disabilities. There are still problems with the use of terminological vocabulary in relation to those processes that are associated with the inclusion of this category of students. For example, the category of a student with disabilities is not represented in the current regulatory and legal field; there is no definition of this social group in the existing federal laws that provide access to education or an inclusion of this category of students in the educational environment.

The next problem is the lack of awareness among employees of educational organizations about the importance and significance of inclusive higher education, both for people with disabilities and without. There is a lack of understanding of the role of employees with disabilities in the formation of an inclusive corporate culture in the educational organization, and there is a need for "management through values"

(understanding and supporting the value of each employee of the organization, including those with individual characteristics and needs).

It is impossible to ignore the problems with accessibility to educational buildings and students' residences at both metropolitan and regional universities. It often depends on the financial capabilities of the organization, which require certain management decisions.

The formation of inclusive culture in educational organizations of higher education remains an actual problem field. It should be stated that inclusive culture in schools, colleges, universities, and society is the focus of attention for a large number of scientists who study this problematic in order to construct mechanisms of inclusion for people with disabilities in social interaction. At the same time, the problem of "resistance" of some university professors to teaching students with disabilities still exists, especially when it requires changing the usual methods of teaching and the usage of other educational technologies, as well as adapting existing teaching and methodological materials for students with disabilities.

The mechanisms of financing the implementation of educational programs of higher education that take into account the special conditions of education for students with disabilities have not been regulated, and, as a consequence, the mechanisms of financial incentives and encouragement of teachers and staff working with students with disabilities, supporting the learning process of this category of students, adapting teaching and learning materials to their needs and requirements have not been developed.

An important issue is the "digital maturity" of Russian universities in terms of organizing education for students with disabilities; it mostly consists of the personalization of learning and bridging the digital gap. The personalization of learning changes the traditional organization of the educational process and ensures that each student achieves high results using different variations of higher education formats. Students with disabilities should not only accumulate knowledge but also develop the ability to learn, to navigate in an information flow, to assess the relevance of knowledge and skills at the current moment, and to adapt to changes in the profession that may occur during the study period.

A certain barrier to the implementation of inclusive higher education in terms of a continuous educational trajectory are the problems of socio-psychological adaptation of first-year students to the educational environment of the university. There is also a lack of special programs for supporting the process of adaptation of first-year students with disabilities to the educational environment of higher education institutions.

Answers to these and many other questions about inclusive education are presented in the materials for the thematic issue. It is prepared by the Association of Inclusive Universities, a public and professional organization whose tasks include theoretical and methodological justification and research of the processes of educational and social inclusion, as well as the design of effective practices in order to provide students with disabilities with accessible professional education. You can learn more about it here.

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**Conceptual Foundations of Inclusive Higher Education  
in the Russian Federation**

**Концептуальные основы инклюзивного высшего образования  
в Российской Федерации**

**The Purpose, Objectives and Main Directions  
of the Development of Inclusive Higher  
Education in the Russian Federation**

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The article provides an analysis of the current state of inclusive higher education in Russia based on the results of the implementation of the Interdepartmental Comprehensive Action Plan to ensure accessibility of vocational education for people with disabilities for 2016—2018 (approved by the Government of the Russian Federation on May 23, 2016 N 3467p-P8).



According to which a set of measures was implemented to help ensure that persons with disabilities receive high-quality higher education. The development and adoption of this document marked the beginning of a new stage in the formation and development of inclusive higher education in the Russian Federation, which determined the goals, objectives and ways to achieve the main indicators of creating an accessible educational environment in Russian universities. Today in the Russian Federation a new Interdepartmental Comprehensive Action Plan has been developed and approved to increase the accessibility of secondary vocational and higher education for people with disabilities and limited health capabilities, including career guidance and employment of these persons. It was approved by the Deputy Prime Minister of the Russian Federation Tatyana Golikova No. 14000p-P8 (hereinafter referred to as the Interdepartmental Comprehensive Plan, ICP, VO, SPO). The 2021 ICP was formed by the Russian Ministry of Education and Science together with the Russian Ministry of Education, the Russian Ministry of Labor, other federal executive bodies and public organizations. The activities of the Interdepartmental Comprehensive Plan bring together more than 25 performers. The development of this Plan, as a strategic planning document based on the principles of succession and continuity, taking into account the stages and results of the implementation of previously adopted documents and largely determines the main directions for the development of inclusive higher education.

**Keywords:** inclusive higher education; students with disabilities; concept of development of inclusive higher education; resource educational and methodological centers for training disabled people and persons with disabilities.

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# Цель, задачи и основные направления развития инклюзивного высшего образования в Российской Федерации

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В статье дан анализ современного состояния инклюзивного высшего образования в России по итогам реализации Межведомственного комплексного плана мероприятий по обеспечению доступности профессионального образования для инвалидов и лиц с ОВЗ на 2016—2018 годы (утв. Правительством Российской Федерации 23 мая 2016 г. № 3467п-П8), согласно которому был реализован комплекс мероприятий, способствующих обеспечению получения качественного высшего образования лицами с инвалидностью. Разработка и принятие этого документа стали началом нового этапа в становлении и развитии инклюзивного высшего образования в Российской Федерации, который

определил цели, задачи и пути достижения основных показателей создания доступной образовательной среды в вузах России. Сегодня в Российской Федерации разработан новый Межведомственный комплексный план мероприятий по повышению доступности среднего профессионального и высшего образования для инвалидов и лиц с ограниченными возможностями здоровья, в том числе профориентации и занятости указанных лиц, который был утвержден заместителем Председателя Правительства Российской Федерации Татьяной Алексеевной Голиковой № 14000п-П8 (далее соответственно — Межведомственный комплексный план, МКП, ВО, СПО). МКП 2021 г. был сформирован Минобрнауки России совместно с Минпросвещения России, Минтрудом России, другими федеральными органами исполнительной власти и общественными организациями. Мероприятия Межведомственного комплексного плана объединяют более 25 исполнителей. Разработка данного плана как документа стратегического планирования основывается на принципах преемственности и непрерывности с учетом этапов и результатов реализации ранее принятых документов и во многом определяет основные направления развития инклюзивного высшего образования.

**Ключевые слова:** инклюзивное высшее образование; студенты с инвалидностью; концепция развития инклюзивного высшего образования; ресурсные учебно-методические центры по обучению инвалидов и лиц с ОВЗ.

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## Introduction

After the ratification of the UN Convention on the Rights of Persons with Disabilities, affordable and high-quality higher education for people with disabilities is the leading idea of social policy in education and at the same time the most important basis for further growth in the quality and standard of living for all citizens of the Russian Federation, including this category of the population [1]. The orientation of social policy to fully meet the needs of people with

disabilities in receiving higher education requires not just changes, but a deep transformation of the entire educational system, including programs, projects, organizational and managerial decisions.

The inclusive transformation of higher education means an approach in which taking diversity into account is a priority in the process of changing the eco-environment. Transformation, unlike changes in any local aspects, involves the transformation of the university as a system, i.e. a change

in its purpose, mission, its functions in society and, in accordance with this, the set of activities carried out, the technologies used and the forms of incorporation. The changes affect both the ideal plane (the image of the university, the understanding of its mission) and the actual plane (how the university is organized, what its activities are). In the transformation process, the university becomes different — a "different entity" corresponding to the situation of a new "reassembly of the world" [3].

An inclusive transformation includes four main characteristics: 1) process; 2) identification of and barrier removal; 3) involvement and progress of all students; 4) consideration of vulnerable students [1]. In addition, inclusive transformation (inclusive excellence) is considered as a process and result, including the achievement of high academic results and a high level of the subjective well-being of all university community members [2].

The accelerated development of inclusive higher and professional education in Russia, which began in 2016, contributed to the creation of Resource Educational and Methodological Centers for teaching people with disabilities on the base of educational organizations of secondary professional and higher education, building network communication between the stakeholders in this process. It allowed to form a support system for students with disabilities who enrolled in universities and develop an interaction algorithm with employers interested in the employment of persons with disabilities, who have obtained higher education. [4] It should be noted that during this period there is a gradual formation of inclusive higher education methods, the number of research papers that consider inclusive processes in higher education from different positions is increasing. On the portal of the scientific electronic library e-library.ru, there are 12,036 research papers that present various areas of inclusive higher

education, including 4,097 research publications in the last 3 years (2020—2022) [6]. According to the Scopus International database, from 1996 to 2022, 845 research papers were published with the keywords "inclusive higher education", "university", "students with disabilities"; at the same time, the Russian Federation is among the top ten countries in terms of the number of such publications and occupies an honorable fourth place (the study was conducted in December of 2022). These studies offer opportunities for the development of search (research, trend, exploratory) and regulatory prognoses. In the first case, we mean an inclusion development forecast in universities on the basis of a conditional continuation of those trends of the past and present, based on programs, projects, solutions, that can change existing trends, give them a fresh impetus. In the second case, it is forecasting ways to achieve the desired state — gaining access to higher education, obtaining it at a qualitative level, and then the independent life of people with disabilities — on the basis of predetermined norms, ideals, goals, and competitiveness in the labor market equally with unimpaired people.

The development of inclusive higher education in Russia is a strategic plan that defines the basic principles, primary goals, objectives, directions and mechanisms for the obtaining of higher education by students with disabilities. In the Russian Federation, as part of the implementation of the Interdepartmental Comprehensive Plan of affordable vocational or higher education for people with disabilities for 2016-2018 (approved by the Government of the Russian Federation on May 23, 2016 N3467p-P8) a set of measures was implemented to promote high-quality higher education for persons with disabilities [5]. The development and acceptance of this document was the beginning of a new stage in the development of inclusive higher education in the Russian Federation, which defined the goals, objec-

tives and ways to achieve them. The strategic result of the Interdepartmental Comprehensive Plan for 2016—2018 was a systematic increase in the number of students with disabilities studying at Russian universities, as well as an increase in the number of higher education institutions that establish the necessary special conditions for the qualitative development of educational programs by persons with disabilities. According to the Federal State Statistics Service, the total number of people with disabilities on 01.01.2022 was 11,331,000 people, of whom are 521,000 people aged 8—17 years old, and 490,000 people aged 18—30 years old. According to the official published data on the admission, training and employment of people with disabilities on the [incedu.ru](http://incedu.ru) portal, 1140 universities and branches took part in the survey as separate entities. The study was conducted by the Ministry of Science and Higher Education of the Russian Federation in 2022, the total number of persons with disabilities studying at universities was 33,368 people (for reference, on 01.09.2021 there were 31,100 students with disabilities at university, and on 01.09.2019 there were 25,252 students). The most popular (top 10) bachelor degree programs among people with disabilities are: pedagogical education (with two specializations), law, economics, pedagogical education, computer science and computer engineering, psychological and pedagogical education, applied computer science, special (defectological) education, management, information systems and technologies.

*For reference: the [incedu.ru](http://incedu.ru) federal portal provides informational and methodological support for inclusive higher education for people with disabilities.*

It is important to note that the network creation model and development of Resource Educational and Methodological Centers for the training of persons with disabilities (hereinafter — REMC) on the basis of educational institutions of higher

education, allowed to form a modern guidance system for the activities of educational institutions of higher education in the implementation and development of inclusive higher education, to test managerial mechanisms for the development of inclusive higher education in Russia through building a partner network of universities that provides special learning conditions for students with disabilities, introduces mechanisms for person-centered career guidance, allowing a person with disabilities to make the right choice in their educational and professional development, significantly update the content of training programs and introduce differentiated models of an educationally-friendly organization for people with disabilities with different educational needs.

## Main Part

### *Some results of the project*

By the end of 2022, there are 13 REMC training centers for people with disabilities in Russia, subordinate to the Ministry of Science and Higher Education, and 8 resource training and methodological centers related to the Ministries of Education, Health, Culture, Agriculture, Transport, and Sports. Each REMC is assigned an "area of responsibility" (from 2 to 9 subjects of the Russian Federation, depending on the number of universities and students with disabilities studying at them. The formed network model (which today has more than 600 universities) of interaction between REMC universities and partner universities allows a greater variability in the choice of educational programs of higher education at the regional level, which undoubtedly contributes to improving the accessibility and quality of higher education for persons with disabilities and student-centered services to meet the unique educational needs of students.

During 2016—2022, the following models have been developed and implemented in Russia:

- person-centered career guidance counseling;

- person-centered guidance on university admission;

- person-centered guidance counseling while completing bachelor, specialist, master, postgraduate degrees as well as career enhancement and professional re-training programs;

- person-centered employment assistance.

Person-centered career guidance counseling includes monitoring the educational needs of students with disabilities, professional tests that allow to respond swiftly to the academic needs of potential applicants with disabilities, provide the necessary support by specialists during the receiving of higher education and influence the conscious career choice by this category of students. The practice of implementing person-centered career guidance sessions based on professional diagnostics with reference to nosology is regular in REMC activities. The activities carried out by the REMC network for the training of persons with disabilities contribute to the development of a career guidance system and makes professional education for persons with disabilities more accessible.

Person-centered admission to university is taking into account the special needs when applying documents, admission, interview, assistance in choosing an education according to interests, Unified State Exam results, and the health condition of the applicant.

The person-centered assistance service during the receiving of higher education provides special learning conditions, a refusal or request for an adapted academic program; adaptation to the university; guidance sessions, the attachment of a counsellor and tutor; the creation of special conditions for the development of an educational program, practices, research, state final examination, depending on nosology.

Person-centered employment assistance includes the integrative activities of practice managers, tutors, employers, representatives of employment services, public organizations, labor and employment departments.

During the period under review, in order to organize consultative assistance to representatives of partner organizations, employees of partner universities, students with disabilities, parents of students, employers on the basis of the REMC for training of persons with disabilities, the work of call-centers was organized. Consulting support is provided on the selection of educational organizations of higher education, admission to a higher education institution, the organization of training, support and guidance in the process of higher education, as well as the creation of available jobs and measures to assist the employment of graduates with disabilities.

An important area of activity of the REMC network is to provide methodological support for the implementation of inclusive higher education. The REMC network developed and used methodological materials, teaching aids, educational and methodical materials for students and teachers, described the practice of specialist's work on the training and support of persons with disabilities, presented on the federal portal of IHE (<https://xn--80aabdcpejeebhqo2afglbd3b9w.xn--p1ai/>) and ASI resources, boxed solutions on the VYATSU website (<https://forum.vyatsu.ru/projects/magazin-korobochnyh-resheniy>).

The key measure ensuring the development of inclusion in higher education institutions is the formation and improvement of the competencies of employees of educational organizations on the issues of creating special conditions for the education of students with disabilities. The network of REMC for higher education implements additional professional programs (professional development programs) both devel-

oped by the network and unique author's programs for the staff of partner universities on the issues of training, support and employment persons with disabilities.

Much attention in the work of the REMC is paid to the issues of promoting the employment of graduates with disabilities graduating from educational organizations of higher education. University programs to promote the employment and postgraduate support of graduates with disabilities have been developed and implemented. Successfully implemented are programs of additional education for graduate students with disabilities and employers. The implementation of these programs involves the formation of students' skills of self-presentation and the presentation of a portfolio of their achievements, demonstrating to a potential employer the professional competencies formed in the process of training. Among the significant events that promote the employment of students with disabilities is the All-Russian competition of student projects with the participation of students with disabilities "Professional students with disabilities "Professional Tomorrow", which since 2018 has been held by a network of resource educational and methodological centers for the training of people with disabilities. Since 2022, REMC higher education institutions have been implementing network training programs for supervisors of practical training (academic and (or) industrial practice) from among the representatives of employers on issues of interaction with students with disabilities

As part of ICP implementation, the REMC network ensures the implementation of presidential initiatives, such as the development of inclusive volunteer work (the Constitution of the Russian Federation (Part 4, 5, Article 13; Part 2, Article 19, Article 30); Federal Law No.181-FL dated 24.11.1995 "Concerning Social Protection for Disabled Persons in the Russian Federation" (amended and restated

on 01.01.2019); Federal Law No.135-FL dated 11.08.1995 " Concerning Charitable Activities and Charitable Organizations ";

The concept of the long-term socio-economic development of the Russian Federation for the period up to 2020 (approved by the order of the Government of the Russian Federation dated 17.10.2008 No.1662-r); The Concept of volunteer work development in the Russian Federation until 2025" (Decree of the Government of the Russian Federation dated 27.12.2018 No.2950-r) and tourism (Decree of the Government of the Russian Federation dated 27.12.2012 No. 2567-p, the " Culture and tourism development" state program of the Russian Federation for 2013-2020. The "Development of domestic and inbound tourism in the Russian Federation (2011-2018)" federal target program, the Strategy for the Development of Tourism in the Russian Federation for the period up to 2035, has also been adopted as a tool for its implementation. The REMC network organizes and conducts All-Russian sessions on inclusive volunteering and inclusive tourism, including the formation of additional competencies for session participants, the creation and presentation of projects.

An important area of the network's activity is the development of the rehabilitation activity of the REMC according to the Concept of the development of comprehensive rehabilitation and habilitation system of people with disabilities, including children with disabilities, for the period up to 2025 in the Russian Federation.

A significant result in the resource center development is the testing and implementation of a model of an interdepartmental and cross-sectional regional system of multilevel interaction with educational organizations of higher education, schools, professional education organizations, public organizations of people with disabilities, employment agencies, employers, regional executive authorities of the subjects of the

Federation ministries (departments, head offices, committees) of education, labor and social protection of the population.

All the results of the REMC activities within the framework of state tasks (2016-2022) and Interdepartmental Comprehensive Plans undergo a multi-stage expert assessment, meet the certification standards of inclusive education practices, which are the basis of special conditions for students with disabilities to receive education. The principal results are reported by representatives of the REMC network and partner universities at the annual Forum on Inclusive Education, academic workshops, international, nationwide conferences, published in monographs, top-rated journals, confirmed by certificates and patents.

In order to improve state policy in inclusive higher education, taking into account the results achieved during the implementation of the Interdepartmental Comprehensive Plan of measures to ensure accessibility of professional education for the persons with disabilities for 2016-2018 (approved by the Government of the Russian Federation on May 23, 2016 No. 3467p-P8), in 2021, a new Interdepartmental Comprehensive Plan was developed and approved to improve the accessibility of professional and higher education for the persons with disabilities, including career guidance and the employment of these persons, was approved by Vice-Prime Minister of the Russian Federation Tatyana Alekseevna Golikova No.14000p-P8 (hereinafter— an Interdepartmental Comprehensive plan, ICP, HE, SPE). ICP 2021 was formed by the Ministry of Science and Higher Education together with the Ministry of Education, the Ministry of Labor and other federal executive authorities and public organizations. The events of the Interdepartmental Comprehensive Plan unite more than 25 executors. The development of this Plan, as a strategic planning document, is based on the principles of continuity, tak-

ing into account the stages and results of the implementation of previously adopted documents.

The interdepartmental comprehensive plan consists of 55 activities combined into three key sections:

I. Development of the career guidance system and ensuring the accessibility of admission to educational programs of professional education for persons with disabilities;

II. Introduction of the best professional education practices for students with disabilities;

III. Employment guidance of graduates with disabilities.

The implementation of the ICP activities in each section is carried out in the following areas:

— regulatory framework and financial mechanisms;

— skilled staff and new management models for the inclusive education development;

— development of educational organizations infrastructure (HE, SHE) and digital technologies to ensure equal access to education;

— development of educational content for persons with disabilities and conducting scientific and methodological research.

With state support, the modern high-tech infrastructure of universities is actively developing. Science technology parks, co-working and engineering centers have been created and are functioning on the base of universities, where projects are entrepreneurial initiatives of students with disabilities.

Since 2022, systematic work has been carried out to upgrade university facilities, conform to the conditions of the modern level of the development of science and technology, including those contributing to the development of rehabilitation tools, which is presented in the videos of university accessibility.



Inclusive higher education is an area that is changing rapidly. The mobility of students, the development of new rehabilitation and assistive technologies that create conditions for the diverse inclusion of students with disabilities in the educational process and contribute to a wide range of opportunities for self-fulfillment — changes the state of inclusive higher education, the life of a particular person with disabilities.

*Key challenges of the Current Development Stage of Inclusive Higher Education*

The official statistics on the total number of people with disabilities in the Russian Federation show a slight decrease in this category over the past 8 years and the relative stability of the number of disabled people of categories I and III. However, the indicators of child disability tend to increase (Table 1).

Positive trends associated with the relatively stable number of people with impairments in Russia are preserved, in our opinion, due to the focused state policy on early health care for children born with various health conditions, as well as the development of rehabilitation services that contribute to the elimination of disability and the return to a full-quality life of a person with disabilities.

Since the purpose of this work is to design the development of inclusive higher

education, which in most cases has age limits from 18 years and older, it will be interesting to consider the distribution of people with disabilities by age and gender in recent years (2020—2023) (Table 2).

The data in Table 2 shows that the number of disabled people of working age, including those aged 18—30 and 31—60 (men), 31—55 (women) has decreased and on September 1, 2023 is 1,270 people. Surely, it is necessary to maintain the trend of decreasing disability rates in the age group from 18 years and older by improving the various forms of rehabilitation assistance aimed at preventing the progression of diseases and the cause of disability. Despite the fact that the positive dynamics of the decrease in the number of people with disabilities in the age group from 18 years old and older remains, the focus of the next stage of the inclusive higher education development is concentrated on proactive actions of attracting multidisciplinary teams to determine the career path, educational needs, employment of a person with disabilities who has obtained professional education, and also to provide further necessary assistance to persons with disabilities in terms of the constitutional right to high-quality higher education access. It seems necessary to implement a set of measures aimed at the continuous support of the educational and professional trajectory of a person with disabilities at all stag-

Table 1  
**Total Number of People by Disability Categories (January 1, 2023)**

	2016	2017	2018	2019	2020	2021	2022	2023
<b>Total number</b> , thousands of people	<b>12751</b>	<b>12261</b>	<b>12111</b>	<b>11947</b>	<b>11875</b>	<b>11631</b>	<b>11331</b>	<b>10933</b>
including: Category I	1283	1309	1466	1433	1422	1367	1304	1282
Category II	6250	5921	5552	5356	5209	4982	4745	4506
Category III	4601	4395	4442	4488	4556	4578	4553	4423
Children with disabilities	617	636	651	670	688	704	729	722
The total number of persons with disabilities per 1,000 population	87,0	83,5	82,5	81,4	80,9	79,6	77,8	74,7

Table 2

**Gender and Age Distribution of People with Disabilities  
 (by Thousand People)**

	January 1, 2020			January 1, 2021			January 1, 2022			January 1, 2023		
	Total	in particular		Total	in particular		Total	in particular		Total	in particular	
		men	women		men	women		men	women		men	women
Total people with disabilities by major age groups:	11877	5204	6673	11633	5134	6499	11331	5046	6285	10933	4876	6057
aged 8—17	476	272	204	496	286	210	521	300	221	525	304	221
active working age	3456	2157	1299	3651	2243	1408	3330	2013	1317	3216	1946	1270
including: aged 18—30	484	268	216	485	242	243	490	262	228	462	279	183
men aged 31—60, women aged 31—55	2972	1889	1083	3166	2001	1165	2840	1751	1089	2754	1667	1087

es of education and subsequent affordable employment.

From the brief overview above of the positive results achieved over the period of 2016—2022 by the REMC network for teaching people with disabilities, it is quite obvious that the development of inclusive higher education should take into account the social, economic and demographic conditions and respond to the new emerging needs of people with disabilities, among which:

- the underdevelopment of diversity and inclusion of a person with disabilities when changing education levels;

- a lack of higher education programs for various categories of students with disabilities in different regions of the Russian Federation;

- the insufficient use of the potential of the educational environment of the university in the rehabilitation measures while obtaining higher education by students with disabilities;

- the insufficient effectiveness of inter-departmental and inter-level interaction in

the regional systems for inclusive higher education development;

- the lack of inclusive skills and competencies;

- the predominance of traditional educational strategies focused on a homogeneous student population;

- the dominance of inclusive education idea based on the medical model of disability; ideas about disability as an individual issues;

- the underestimation of the humanitarian, psychological aspects of inclusive education;

- the discrepancy between the pace of facilities updating, the content and teaching methods of students with disabilities and the pace of development of science, economics, technology;

- the insufficient implementation of academic programs that take into account the special learning conditions of students with disabilities;

- the shortage of modern, rehabilitation equipment for academic programs of higher education;

— the limited use of learning experience (practices of inclusive higher education) in the training of specialists in the field of education and social sphere;

— the mechanisms for identifying, selecting and replicating practices (technologies) in teaching and follow-up of students with disabilities have not been worked out;

— a new economic model for the development of inclusion in higher education requires development and testing as well as updating the cost and increasing coefficients to the regulatory financing of students with disabilities in educational institutions of higher education, taking into account the nosology of the disease, the existing limitations in the development of the program.

#### *Goals and Objectives of the Development of Inclusive Higher Education*

The goals of inclusive higher education development are to create conditions for the self-fulfillment of a student with disabilities, the development of their success, vitality, as well as the upbringing of a highly moral, well-rounded, active and socially responsible personality.

To achieve the goal of inclusive higher education, it is necessary to solve the following tasks:

— improving the managerial system of inclusive higher education by including infrastructure and personnel policy measures to improve accessibility for people with disabilities in universities;

— the development and implementation of common criteria for evaluating an inclusive educational organization of higher education, development of a standard model of an inclusive educational organization of higher education;

— refreshing the infrastructure of higher educational organizations, including the development and implementation of an effective economic model, inclusion develop-

ment in educational institutions of higher education;

— improving the system of person-centered career guidance counseling, including the development of the procedure for issuing a certificate of individual financing, regardless of the place of residence, health status and level of material security of the family, granting the right to obtain secondary professional education and higher education (master's degree) for children with disabilities, people with disabilities of category I and II, people with lifelong disabilities, people disabled as a result of war injuries or illness received during military service, veterans of combat operations;

— the creation of a single open educational and rehabilitation system, service extension provided by educational institutions of higher education in teaching students with disabilities;

— the inclusion of students with disabilities in the process of inclusive pre-education of the university, taking into account their votes when making decisions;

— the extension of educational and rehabilitation services to students with disabilities on the basis of those educational institutions of higher education in which they study;

— the expansion of opportunities for using teaching and follow-up practices for students with disabilities in training specialists in education and social sphere;

— including of inclusive higher education practices in academic training programs that ensure students' practical experience of working with persons with disabilities;

— improving the continuity mechanisms of educational paths for persons with disabilities between secondary general, secondary vocational and higher education;

— the involvement of students with disabilities in early career guidance programs and activities that provide studying modern and future professions, professional self-

determination guidance, career planning skills, including career-guidance tours and internships;

— ensuring the interaction with mentors from scientific institutions to involve students with disabilities in scientific workflow;

— the involvement of students with disabilities in the development of rehabilitation technologies and assistive equipment;

— the development of creative competitions, festivals, research and practical conferences in which students with impairments take part;

— improving the academic and social mobility of students with disabilities, including guided tours on historical, cultural, scientific, educational and patriotic topics, assistance in organizing student cultural and patriotic trips;

— creating conditions for the professional development and self-fulfillment of human resources and teaching staff working with students with disabilities;

— improving the training mechanisms and continuous professional development of human resources and teaching staff on inclusive higher education;

— the development of mentoring in employment and securing a graduate with disabilities at the workplace of the university;

— improving the conditions for the use of digital services and content available for students with disabilities for educational activities;

— the development of an inclusive culture among the university community, including the promotion of inclusive volunteering projects.

### *State Policy Principles in Inclusive Higher Education*

State policy principles in inclusive higher education for students with disabilities include:

— openness expressed in building interdepartmental cooperation and increasing the degree of influence on the sphere of

inclusive higher education of students with disabilities and other subjects, including parents and children;

— the variability of educational programs related to ensuring the diversity of education based on the needs, interests and life self-identification of students with disabilities;

— accessibility of high-quality higher education for students with disabilities of different social groups, regardless of their territory of residence;

— client-centricity, personification, ensuring the possibility of participation of every person with disabilities by introducing individual financing (education certificate) regardless of the place of residence, health status and the level of material security of the family, granting the right to receive secondary vocational education and higher education (master's degree programs) for children with disabilities, people with disabilities (category I and II), people with lifelong disabilities, people disabled as a result of war injuries or illness received during military service, veterans of combat operations;

— practice-oriented educational programs of higher education, which allows for the designing of a student-centered educational path, taking into account the directions of socio-economic development of the subjects of the Russian Federation;

— evidence of effective inclusive education practices;

— continuous training programs of educational levels in the educational path of a person with disability.

### **Expected results**

The following results are expected:

— in the Russian Federation, the transition to the individual financing of the variable educational paths of a person with disabilities has been carried out, the possibility of admission using individual financing education certificates to all types of

educational organizations, including non-governmental ones, has been provided;

— in the constituent entities of the Russian Federation, certificates of individual financing have been provided to at least 25 percent of persons with disabilities for SPE programs — until 2024, at least 30 percent — until 2030;

— the system of regional policy management for the development of inclusive education includes educational organizations of higher education, taking into account the tasks of socio-economic development of the subjects of the Russian Federation, including the needs of the relevant sectors of the economy;

— the management system of inclusive higher education has been improved by including infrastructure and staff policy measures to improve access conditions for people with disabilities in the development programs of universities;

— standard evaluation criteria for an inclusive educational organization of higher education have been developed and implemented, as well as the development of a standard model of an inclusive educational organization of higher education;

— the infrastructure of educational institutions of higher education has been upgraded, including the development and implementation of an effective economic model for the development of inclusion in educational institutions of higher education;

— the system of individual career guidance has been improved, including the procedure for issuing an individual financing voucher, regardless of the place of residence, health status and level of material security of the family, granting the right to receive secondary vocational education and higher education (master degree programs) for children with disabilities, people with disabilities (category I and II), people with lifelong disabilities, people disabled as a result of war injuries or illness received

during military service, veterans of combat operations;

— a single open educational and rehabilitation space has been formed, expanding the range of services provided by educational organizations of higher education when teaching students with disabilities;

— models for providing educational and rehabilitation services to students with disabilities on the basis of those educational institutions of higher education in which they study have been developed and implemented;

— teaching and follow-up opportunities for students with disabilities in training specialists in training specialists in education and social sphere have been expanded;

— higher education inclusive practices have been included in academic training programs that ensure students' practical experience of working with persons with disabilities;

— continuity mechanisms of educational paths for persons with disabilities between secondary general, secondary vocational and higher education have been improved;

— students with disabilities in early career guidance programs and activities that provide studying modern and future professions, professional self-determination guidance, career planning skills, including career-guidance tours and internships have been included;

— interaction with mentors from scientific institutions to involve students with disabilities in scientific workflow has been provided;

— the involvement of students with disabilities in the development of rehabilitation technologies and assistive equipment has been provided;

— the system of creative competitions, festivals, research and practical conferences in which students with impairments take part, has been developed;

— academic and social mobility of students with disabilities has been improved,

including guided tours on historical, cultural, scientific, educational and patriotic topics, assistance in organizing student cultural and patriotic trips;

— conditions for the professional development and self-fulfillment of human resources and teaching staff working with students with disabilities have been created;

— the mechanisms of the training and continuous professional development of academic and management staff on issues of inclusive higher education have been improved;

— the training mechanisms and continuous professional development of human resources and teaching staff on inclusive higher education have been improved;

— mentoring in employment and securing a graduate with disabilities at the workplace have been developed;

— the conditions for the use of digital services and content available for students with disabilities for educational activities have been improved;

— the development of an inclusive culture among the university community, including the promotion of inclusive volunteering projects, has been provided.

## Conclusion

The general directions for the development of inclusive higher education were formulated in the Memorandum of the "Inclusive School. The success of each child" forum, held in Grozny on April 18-19, 2023. The Memorandum defines the policy of educational inclusion, which is based on the following values of our community:

— friendliness and safety of the educational environment;

— nondiscrimination;

— life-long continuous inclusion;

— personalization and support relevance.

Based on the following principles:

— evidence-based practices;

— the teamwork and synergy of participants in the educational process;

— student-centricity in the educational process;

— the partnership of children and adults and taking into account students' opinions;

— a Universal design for learning;

— school and social institutions relations;

— the recognition and consideration of the cultural and historical context and traditions of the country.

This document defines the tasks of the professional and public community for 2023, which are:

1. Formation of a complete inclusion glossary;

2. Development of a system approach to the self-assessment of inclusion maturity and indicators of inclusive culture of an educational institution (assessment by the final recipient);

3. Formation of criteria and mechanisms to assess the best practices;

4. Model solution development for resource security of inclusion (networking, social partnership, mentoring, a new methodology for calculating the financing of inclusive processes);

5. Creation of children and adult communities.

Thus, the Federal REMC Network is a unique tool for the development of IHE in the territory of the Russian Federation, significant results of qualitative and quantitative indicators of this process are convincing and steadily increasing. At the same time, we see that, having launched and stabilized the IHE development process, the mission of this project cannot be completed, since new tasks have been set, the results have been determined until 2030. The activity of the federal network is reaching a new strategic level. This is determined by:

— an increase in the category of persons with disabilities, including after the

SMO, who are guaranteed to obtain state budget supported education, both when receiving a first higher and second higher education;

— the heterogeneity of social, psychological and pedagogical features of young people with disabilities (including after the SMO), requiring the development of new approaches to IHE support;

— the support and implementation of federal initiatives at the regional level as part of regional programs to support young people with disabilities in obtaining vocational education and assistance in subsequent employment;

— the development of the rehabilitation industry and the need to use the potential of the REMC in the development of rehabilitation facilities for the disabled;

— the need to create laboratories on the basis of universities that allow for scientific (fundamental and applied) research, to form IHE practices with proven efficiency, as well as to consider these laboratories as practice bases effective for training specialists whose professional activities are related to educational and social inclusion;

— the need for a wide promotion of the obtained results by the REMC Network;

— balancing the requirements for indicators of inclusive higher education development of Ministries, RAE, RAS;

— the need for an expert assessment by the participants of the federal network of Higher Education Centers and the Association of Inclusive Universities of the activities carried out by structures and organizations for the development of inclusive higher education that are not included in this federal project.

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# Inclusive Excellence: A new University Model in the 21st Century Based on Universal Design for Learning

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Affordable high-quality university education is a moral and legal imperative today. At the same time, there are still numerous barriers to get this university education. The orientation of higher education towards world rankings and economic efficiency indicators contradicts with inclusive values and goals. Inclusive politics needs radical revision and updating. The aim of this research is to design an inclusive university model based on universal educational design. The research method is a review and theoretical analysis of scientific publications devoted to inclusive higher education and published on the platforms SpringerLink, PubMed, Frontiers and Taylor & Francis Group. The paper examines the concepts of inclusive excellence and universal design for learning and provides a theoretical analysis of the possibility of using these approaches to transform a modern university. The authors propose a model that takes into account: organizational culture, indicators of inclusive excellence, principles of transformation of the educational environment, external factors, global and national context and the process of transformation (involvement, representation, action through a plurality of means and environments based on agency). The expected result is of high importance for Russian and world science and is in the trend of key scientific research of education and its transformation, focused on the values of social justice, accessibility and equal opportunities, and also responds to the crisis situation in the humanities.

**Keywords:** inclusive excellence; academic excellence; higher education; university; universal design for learning.

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# Инклюзивное совершенство: новая модель университета в XXI веке на основе универсального дизайна обучения

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Доступное и качественное высшее образование является сегодня нравственным и правовым императивом. При этом сохраняются многочисленные барьеры для получения высшего образования. Ориентация высшего образования на мировые рейтинги и показатели экономической эффективности вступает в противоречие с инклюзивными ценностями. Инклюзивная политика, опирающаяся на медицинскую модель инвалидности, нуждается в пересмотре и обновлении, как и механизмы адаптации изначально недоступных сервисов и программ. Целью исследования является проектирование модели инклюзивного университета на основе универсального дизайна. Метод исследования — обзор и теоретический анализ научных публикаций, посвященных инклюзивному высшему образованию и размещенных на платформах SpringerLink, PubMed, Frontiers и Taylor & Francis Group. В работе рассматриваются концепции инклюзивного совершенства и универсального дизайна для обучения, проводится теоретический анализ возможности применения этих подходов для трансформации современного университета. Авторами предложена модель, которая учитывает: организационную культуру, показатели инклюзивного совершенства, принципы трансформации образовательной среды, внешние факторы, глобальный и национальный контекст и процесс трансформации (вовлеченность, представление, действие через множественность средств и сред с опорой на агентность). Ожидаемый результат имеет высокую значимость для отечественной мировой науки и находится в тренде ключевых научных исследований образования и его трансформации, ориентированной на ценности социальной справедливости, доступности и равных возможностей, а также отвечает на ситуацию кризиса в сфере гуманитарных наук.

**Ключевые слова:** инклюзивное совершенство; академическое совершенство; высшее образование; университет; универсальный дизайн обучения.

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## Introduction

The UN Convention on the Rights of Persons with Disabilities [6] and the Incheon Declaration on Education 2030 recognize universal inclusive quality education as a goal for sustainable human development [4]. However, higher education faces numerous challenges and barriers [5].

Increasing heterogeneity within the student cohort presents both opportunities and challenges for higher education. Adapting an educational program to a specific nosological subgroup is problematic, which leads to the search for universally-personalized solutions [1; 17]. "There is no 'average student' and no single curriculum or approach that fit all disciplines or cultures," as was stated by L. Goodman [17].

The dilemma of the goals of academic and inclusive excellence contains an internal contradiction: achieving high educational and scientific results [20] against the principles of equity, accessibility and equality of opportunity. This contradiction is especially intensely realized by research universities in Russia (Russian Academic Excellence Project 5/100, Academic Leadership Program Priority-2030). The answer may lie in understanding and adopting the concept of inclusive excellence, which has been internalized by most leading research universities worldwide [2].

The focus of universities on physical and architectural accessibility strategies and the underestimation of the human, pedagogical and psychological aspects of inclusive education (psychological well-being, autonomy and agency) is another pitfall. The work of the Network of Resource Training and Methodological Centers for the Education of Persons with Disabilities the need for new learning tools. Russian universities should move to the next frontier of inclusion — design for education [2].

This study aims to design a model of the inclusive university based on the review of theoretical analyses of scientific publications on inclusive higher education published

in SpringerLink, PubMed, Frontiers, Taylor & Francis Group. The concepts of inclusive excellence and universal design for learning form the methodological basis of the model.

To achieve the aim, three research questions need to be addressed:

1. What is inclusive excellence in higher education?
2. How can inclusive excellence be measured?
3. What practices or strategies create inclusive excellence in higher education?

### 1. Inclusive Excellence for Higher Education

Changes in the fundamental paradigms of the perception of the world have led to the crystallization of a new model of the university, the mission of which goes beyond the development of education and science and assumes responsibility for serving justice for sustainable development [2].

Thirty years ago, the leading strategy of world universities was academic excellence. Educators who have embraced the spirit of academic excellence focus on achievement thus promoting exclusion, though perhaps unintentionally [21]. Modern education cannot succeed if it is accessible to only a select few.

The American Association of Colleges and Universities proposed the model of inclusive excellence (hereinafter — IE) in 2005. In the model, diversity, equity, and inclusion determine academic excellence [26, p. 9] as a system of transformational changes related to: 1) the environment; 2) organizational behavior; 3) organizational culture (mission, vision, values, traditions, norms); 4) the IE indicator system; 5) the IE change strategy. The peculiarity of the IE model is that it "works from the external level inward, bringing the external environment into play with behavioral aspects" to transform academic excellence into inclusive excellence [26, p. 29].

The IE principles are stated as follows: "1) We do not only see differences, we em-

brace differences; 2) We believe in diversity and have a responsibility to ensure that everyone has the opportunity to fully participate, succeed, and lead at the university; 3) We also believe that our university succeeds only when everyone succeeds; 4) We believe that we must act in ways that honor everyone's experience" [10].

The search for the different philosophical and anthropological foundations for describing excellence can be based on the approach in which human development in a complex world is considered as an open integrity [8]. In complex systems, there is no incompatibility between determinism and unpredictability. A.G. Asmolov identifies two types of redundancy: specialized, which involves copies of specialized structures, based on the principle "there is no irreplaceable" and universal, which is based on the principle of "the uniqueness of everyone" [8, p. 33]. Creating conditions for the development of a diverse range of unique personalities today can become a key reference point for education. This approach assumes that the integration of academic excellence and inclusive excellence is the driving force of university development.

### **1.1. Approaches and Tools for Inclusive Excellence Assessment**

Global ranking indicators shape the assessment of higher education quality through the lens of academic excellence. This narrow approach can lead university leaders to prioritize short-term goals instead of investing in long-term strategies such as promoting inclusiveness. Moreover, taking into account for institutional diversity and regional context can be challenging. "These difficulties can result in unfair comparisons in assessments of academic value, perpetuating inequalities in higher education," as M. Kayyali argues [16].

IE assessment criteria is a complex issue that requires a comprehensive discussion. It is worth noting that it is a process rather than an outcome, with the potential to foster transformation across all university structures [13, P. 27].

The IE model articulates the following framework for these goals: 1) access and equity, 2) diversity in the formal and informal curriculum, 3) campus climate, and 4) student learning and development [26].

In recent years, empirical studies have advanced the validation and discussion of assessment tools. Curriculum has been assessed for its effectiveness, accessibility, flexibility, learning outcomes, course materials and teaching strategies [14], as well as web-based classroom management systems [21]. To assess student learning and development, researchers have examined such measures as confidence, autonomy and learning integrity, and openness to experience [24].

In the IE model, equity in higher education is characterized not only through the equality of conditions, but also through the equality of outcomes: 1) equal access to all levels of higher education, 2) equal conditions, supplemented by resources tailored to individual needs, 4) the equal success of all students, 3) equal access to a variety of forms of engaging learning [26, p. 8]. The paradigm of equality in higher education corresponds to the Universal Design for Learning (hereinafter — UDL).

## **2. Principles of the Universal Design for Learning in Higher Education**

Universal design is determined by the Convention on the Rights of Persons with Disabilities as "the design of objects, settings, programs and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" [6]. The approach was proposed by the Center for Applied Special Technology (A. Meyer, D. Rose & D. Gordon, 2016). Based on research in cognitive neurobiology, it explains why, what and how people learn.

UD in higher education is primarily a proactive design, which implies anticipatory design. "This approach is consistent with social models of disability, in which, instead of reactively providing adaptations, the product or

environment is immediately 'born accessible', as S. Burgstahler noted [11, p. 239].

In domestic science and practice, the terminology of UD is innovative [1]. The main principles of universal design in learning (hereinafter — UDL) are reflected in several normative documents (the Federal Law "On Education in the Russian Federation", FSES, etc.) and are studied in separate thematic contexts [3].

There is a lack of research on the application of UDL principles in higher education and the need to develop a method, design a model and describe the conditions for its implementation [25]. UDL is attracting increasing interest as a theoretical basis for inclusive pedagogy, with its attitudes of universal benefit ("good design for the disabled, such as ramps, benefits everyone") [18; 23], belief in success, and effective learning for all [1, 5].

Studies have found links between UDL and the manifestation of autonomy, conscientiousness in learning, the openness to experience in students [24], the involvement of all participants in the educational process in its implementation, considering the opinion of the whole community in assessments [17].

The effectiveness of the proposed UDL model is confirmed by studies that have established the systematic application of the principles [12] at different levels of education [9]. Scientific literature describes cases of the successful transformation of universities and colleges [12,17,25]. However, researchers also note methodological difficulties, such as problems with the reliability of the results obtained due to the imprecise sampling [22], the accounting and control of demographic data, difficulties with study design [23]; the evidence base in experimental studies [12,17,25].

### **2.1. Personal Development as a Goal of UDL in Inclusive Higher Education**

The IE model can be described as a dynamic system that focuses on the unique personality and prioritizes his or her development. UDL is used as a means to achieve this goal.

D.A. Leontiev, together with other researchers, found that the decisive factor determining the trajectory of the development of persons with disabilities is psychological resources (resilience, autonomy, subjectivity, etc.) [7, p. 15-16, p 28]. At the same time, domestic paternalism towards students with disabilities, based on the medical model of disability, entails numerous risks, such as the syndrome of learned helplessness, the formation of an inferiority complex, the dominance of the external locus of control.

Among IE's strategies for change (2005), D.A. Williams with coauthors emphasizes "vision and commitment", when employees understand and share values, understand organizational change and participate in its design [26, p. 27]. It is necessary to take into account the voices and experiences of students from socially disadvantaged groups, encouraging them to be the architects of their careers and education.

Given the increasing reluctance of students to express their views, especially those of minority viewpoints, Jacqueline P. Leighton (2023) assumes that UDL is a resource approach for developing students' confidence and autonomy [19]. Students' engagement in shaping their learning trajectory and managing their education is crucial to their satisfaction with learning outcomes [1, p. 27; 14; 23]. Students are powerful catalysts for change and their role as "allies" is an integral part of change [17].

Ju S. and other researchers (2017) analyzed 20 empirical studies published between 1972 and 2016 and found that various manifestations of agency (such as self-protection, self-awareness, goal setting, and goal attainment) encourage students to actively seek assistance and support to achieve academic success [15].

### **3. A Model of Inclusive Excellence in Higher Education Using Universal Design**

The development of an IE model in higher education using UDL implies a complex and

systematic correlation of all the characteristics of the two concepts studied.

At the heart of the model are key IE foundations that constitute the organizational culture, including mission, vision, values, traditions, norms. They create the platform to launch inclusive transformation and ensure that the core values are upheld. The focus of the change should be on inclusive excellence indicators such as: 1) equity and accessibility, 2) diversity in the formal and informal curriculum, 3) campus climate, and 4) student learning and development. According to the key principles of UDL, the environment for transformation should include diverse environments, methods and formats for learning delivery, and strategies for implementing IE. Designing concrete actions in specific contexts should be based on the analysis and consideration of external factors that facilitate and impede IE. Consider-

ing the impact of global and national contexts is crucial as a key framework for correlating the universality and uniqueness of inclusive transformation processes within the university.

The fundamental feature of the university IE model using UDL is the emphasis on the transformation process starting with a specific agent (a student, a teacher, an administrator). The key stages of learning according to the principles of UDL: engagement, representation, action and expression through multiple means and environments relying on the agency and activation of the subject position.

### Discussion and Conclusion

Universal design in higher education can become a methodological basis for making decisions that meet all the challenges that Russian universities face in designing inclusive environments. Discourse on universal

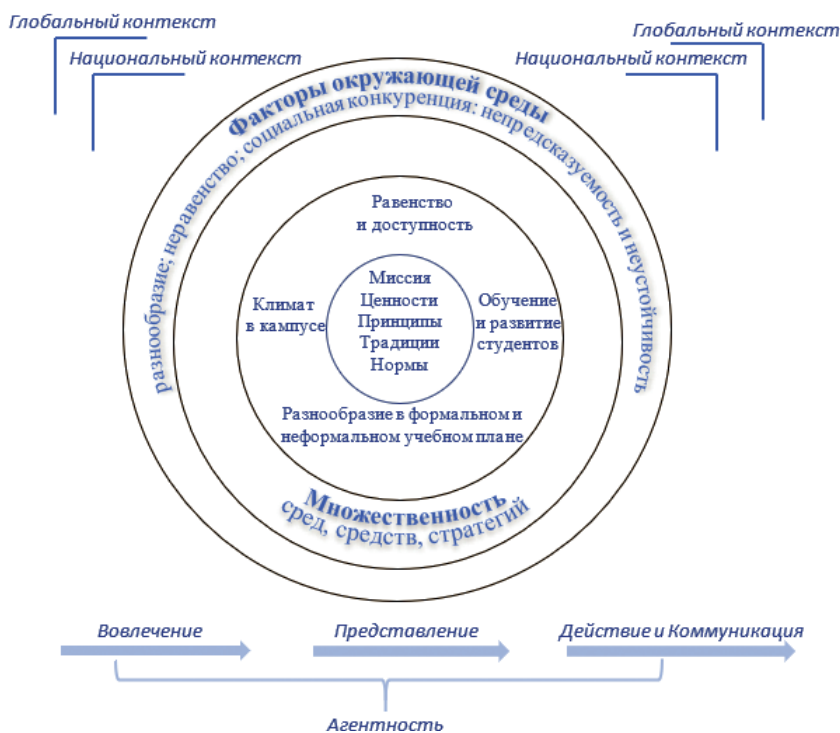


Fig. 1. Model of inclusive excellence using the universal design for learning

design provides vivid national examples of its implementation and the recontextualization of the general principles of UD in the national context. Two possible consequences of UD implementation in higher education can be considered. The first one is the creative assimilation of universal design principles, which can become a driver of the processes of tech-

nological and humanitarian breakthroughs of our country, a strategy for achieving the goals of national projects. The second one is a mechanical transfer of its mechanisms, without the assimilation of its humanistic meanings, sometimes contradicting the essentialist ideas about the person that dominate in our consciousness.

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# Culture of Inclusion in the Educational Ecosystem of a Modern University

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This article discusses the current issues of defining the “inclusion culture” in the context of the subjective perceptions of working teachers and students of a pedagogical university about people with disabilities, the peculiarities of their life and the prospects of their social integration. The personal positions of individual actors of the educational space largely determine the generalized image of a certain ideal model of inclusive educational and socio-cultural spaces. Special attention is paid to the issues of unconditional acceptance of persons with disabilities, securing their active position, partner co-author participation in the processes of social integration and self-realization. An attempt is made to differentiate the concepts of “inclusive culture” and “culture of inclusion” with the designation of the main components of this definition and the definition of factors for the successful implementation of inclusive processes in the educational ecosystem of a modern university. We proposed some strategic solutions for the formation and development of a culture of inclusion in the ecosystem of the university according to four vectors of activity with an approximate list of activities. The materials of the article actualize the concepts of the educational ecosystem in terms of its correlation with the processes of inclusion and the development of a system of continuous high-quality and affordable education for all.

**Keywords:** inclusive education; culture of inclusion; inclusive culture; teacher education; educational ecosystem.

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## Культура инклюзии в образовательной экосистеме современного вуза

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В данной статье рассматриваются актуальные вопросы определения дефиниции «культура инклюзии» в контексте субъективных представлений работающих педагогов и студентов педагогического вуза о лицах с ОВЗ и инвалидностью, особенностях их жизнедеятельности и перспективах их социальной интеграции. Персональные позиции отдельных субъектов образовательного пространства в значительной мере предопределяют обобщенный образ некоей идеальной модели инклюзивных образовательных и социокультурных пространств. Особое внимание уделено вопросам безусловного принятия лиц с ОВЗ и инвалидностью, закрепления за ними активной субъектной позиции, партнерского соавторского участия в процессах социальной интеграции и жизненной самореализации. Предпринята попытка содержательной дифференциации понятий «инклюзивная культура» и «культура инклюзии» с обозначением основных компонентов данной дефиниции и определения факторов успешной реализации инклюзивных процессов в образовательной экосистеме современного вуза. Предлагаются некоторые стратегические решения формирования и развития культуры инклюзии в экосистеме вуза, представленные по четырем векторам деятельности с примерным перечнем мероприятий. Материалы статьи актуализируют понятия образовательной экосистемы в аспекте ее взаимосвязи с процессами инклюзии и развитием системы непрерывного качественного и доступного образования для всех.

**Ключевые слова:** инклюзивное образование; культура инклюзии; инклюзивная культура; педагогическое образование; образовательная экосистема.

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## Introduction

The ecosystem of any organization is a set of interacting elements and structures that exist inside and around the structure. Ecosystems in education are interconnected educational spaces that unite both institutional and individual participants (education providers) operating with various educational resources for individual and cooperative learning [11].

In the research of A.G. Bezpalova, the concept of "university ecoinclusivity" is presented in detail, which means the forced university activity for inclusive students at all stages of the educational process, information, technically and technologically modern support for professional curricula development, which, taken as a whole, is aimed at the employment of such graduates and the formation of a socially adapted personality [1]. The active support of comprehensive ties with graduates and partners, the effective collaboration of the university, business and public non-profit organizations in inclusion will increase the level of university ecosystem [5]. Inclusion is one of the most important components of the educational ecosystem, as it is aimed at ensuring equal opportunities for all participants in the educational process, regardless of their individual characteristics or abilities.

An important role in ensuring equal opportunities in obtaining affordable and high-quality education is played by the culture and ethics of inclusion as a complex polysubjective process, a certain ethics code and non-discriminatory communication norms, the respectful communication between people with and without disabilities [9]. The culture of inclusion as an educational ecosystem component that acts as a certain system-forming socio-cultural phenomenon that ensures the formation of "precisely the ideology, strategies, means, forms, technologies of the inclusion process itself" [8].

The study issues concern the aspects of differentiation and content of a culture of in-

clusion in the subjective perceptions and expectations of teachers in educational ecosystems implementing education, upbringing and social engagement of persons with disabilities at different levels of education. The obtained data allows us to determine the main areas of activity focused on improving the competence of the subjects of the educational space and the development of inclusive culture of the educational ecosystem in the university.

## Methods

The object of the study was the subjective perceptions and expectations of teachers at different levels of education who have immediate experience of interacting with people with disabilities, and also students receiving a defectological education. These respondents represent the subject space of the educational ecosystem of a modern university and act as the actual and potential relays of inclusive culture as the framework of continuous inclusive education. The main method of the study was the expert assessments based on questionnaire survey data and the primary statistical analysis of the obtained data. The questionnaire consisted of 25 questions revealing the expectations and perception towards people with disabilities and the experience of interaction with them; a general understanding of the term "a culture of inclusion" and its content; ideas about the main directions, means and expected difficulties in the formation and development of a culture of inclusion in modern society.

There were 250 participants who participated in the survey, including 130 students of the "Special (defectological) education" specialization, of the ages of 18 to 24, and 120 people are teachers of schools and preschool educational organizations aged 22 to 62 years, who have experience teaching children with disabilities for more than one year. The participants of both research groups are female. To determine the significance of the difference in the subjective perceptions and

expectations of the respondents, the method of analyzing arbitrary contingency tables using Pearson's chi-squared criterion was used.

### Results

The socio-psychological subtext and substantial content of the proposed options is quite clear and comes down to two opposing options "similarity" and "otherness". The third option is a rough copy of the second, and the fourth is of the first one.

The highest percentages are noted for the fourth option, characteristic of the implied or conditional acceptance of this very otherness within 65% of both groups of respondents. There were no significant differences in the groups,  $p > 0.1$ . The option "... they are different, not like us" was chosen by less than 3% of all respondents, which allows us to set up discourse on the reality of accepting the otherness of another person, which a number of researchers attribute to absolute value, in contrast to the traditional identification of tolerance with patience as a form of conscious repression of the contempt for the otherness of another person, its misunderstanding that it should be accepted, not tolerated [10, 12]. It means to let other people be different and accept them as they are, with all their strengths and weaknesses.

The acceptance and understanding of human diversity, otherness, dissimilarity, the obvious status of "different, not like us" is the basis of the culture of inclusion as a certain ethical standard of non-discriminatory interaction and two-way respectful communication

of people who differ from each other by some features [9, 16].

In our opinion, the very understanding of the "Culture of inclusion" and "Inclusive culture" definitions needs detailed elaboration by the subjects of inclusive and special (correctional) educational systems. The need for distinguishing between these concepts is also confirmed by the data of our study. The opinions of both preschool and school teachers was balanced almost equally, 49% of all surveyed teachers believe that this is the same concept. At the same time, about 73% of the students studying at the faculty of "Special (defectological) education" consider the "culture of inclusion" to be a separate concept, different from the concept of "inclusive culture". There is a high statistical significance of the difference in the groups of respondents according to the Pearson  $\chi^2$  —  $df-1$ ,  $\chi^2=20,1$ ,  $p<0,01$ . This is explained by a rather active shift of emphasis towards a cultural approach and the actualization of the subjective, proactive position of persons with disabilities themselves in the processes of social inclusion and self-fulfillment. The subjective aspect of the culture and ethics of inclusion assumes that a person with disabilities and their environment cultivate and develop their own strategies of non-toxic behavior corresponding to the ecosystem of this social group.

Two positions proposed in the questionnaire were aimed at identifying the attitudes and perceptions of respondents about the subjectivity of persons with disabilities and the objectivity of the culture of inclusion itself (Table 2).

Table 1

### Perception Analysis of Persons with Disabilities as "Other", "Different from us"

Perception	Respondents	
	Teachers	Students
People with disabilities are		
different, not like us	1.7	3.1
the same as us	15.4	12.1
different, but they can be adapted	22.1	22.7
the same as us, just have some deviations	62.5	62.1

Table 2

### Attitude Analysis Towards Subjectivity of Persons with Disabilities in the Context of the Culture of Inclusion

Viewpoint	Respondents	
	Teachers	Students
People with disabilities are		
the subject of the culture of inclusion	15.8	32.3
the object of the culture of inclusion	13.3	23.1
the subject and the object of the culture of inclusion	21.6	29.2
the partners of the culture of inclusion	49.3	15.4
The culture of inclusion is		
more about society than about people with disabilities	12.5	3.8
more about people with disabilities themselves, rather than about society	1.6	7.6
more about the interaction of society and people with disabilities	63.3	68.4
more about the processes of integration into society of any form of "otherness"	22.6	20.2

According to the results, with the general orientation of respondents towards the interaction of society and persons with disabilities, it is teachers who significantly differ in their attitude towards partnerships in the development of a culture of inclusion,  $df=3$ ,  $\chi^2=34,09$ ,  $p<0,001$ . At the same time, students are more focused on the subjectivity of persons with disabilities themselves, while teachers believe that the culture of inclusion is more about society,  $df=3$ ,  $\chi^2=11,42$ ,  $p<0,01$ .

It should be observed that students define a "culture of inclusion" as an instrumental means of successful social integration and self-fulfillment of persons with disabilities, while there is some concern that only 12% of all respondents consider a culture of inclusion as a criterion for assessing a personality, referring it to indicators of civic society development. Special attention should be paid to the fact that only 1.5% of students and less than 4% of teachers name the culture level of inclusion as a significant indicator of a modern family's development. This can be considered a "sore point" of the development of the entire culture of inclusion, because the most important source of the socio-cultural experience of the younger generation is the intra-family en-

vironment, reflecting moral attitudes, spiritual values and the social position of parents and the immediate environment [3]. At the same time, about 45% of all surveyed respondents believe that the phenomenon of the culture of inclusion is determined specifically by the person's values and principles.

In this aspect, the well-known viewpoint of Alexander Vasilyevich Suvorov is very appropriate, which states that any education should include a cultural aspect that is not assimilated and not appropriated, but created and cultivated. Each person forms their own personal version of culture, which is not "pushed in" from outside, but is formed by the personality in collaboration with other people [13].

Students rate their individual level of culture of inclusion significantly higher than trainee teachers working with children with disabilities in the system of inclusive and special (correctional) education: 48.2% of teachers and only 23.6% of students characterize their level of inclusive culture as low and below average, statistical calculations also confirm the significance of the difference:  $df=1$ ,  $\chi^2 = 4.9$ .  $p < 0.05$ .

Speaking about the ecosystem of the educational environment and the culture of

inclusion, we cannot ignore the phenomena of the general communication culture, cultural behavior and the psychological culture of the individual, the subject of educational and socio-cultural processes. So, in particular, social communication can be defined as a variant of culture, a kind of universal socio-cultural mechanism that regulates the process of interaction between members of society, defining the socio-cultural norms and patterns of such interaction [4]. A high percentage of respondents believes that the general culture of communication and interpersonal interaction among people with disabilities is somewhat lower than that of normatively developing peers, this opinion is shared by 49% of all teachers surveyed and almost 53% of students. Also, 27.5% of students believe that the level of communication culture and interaction of persons with disabilities is significantly lower than satisfactorily developing peers; this position is shared by only 15.4% of school teachers. It is among secondary school teachers working with children with disabilities that 38.5% of respondents believe that the level of the communication culture of people with disabilities does not differ from similar indicators among normally developing peers, whereas only 16% of students expressed this point of view,  $df=4$ ,  $\chi^2 = 14,65$ ,  $p < 0,01$ . Obviously, this difference is explained by the real-life experience of close interaction with such students by teachers and the lack of diverse communication with people with disabilities among students. Speaking about different aspects of communication, one interesting indicator should be paid attention to — 60% of the surveyed students and 35% of teachers believe that knowing the basics of Russian sign language would be helpful and they are ready to be trained.

Most of the various authors' definitions of "cultural behavior" come down to understanding this socio-psychological phenomenon as a set of forms of everyday human behavior, which reflect the moral and aesthetic norms

of this behavior [1]. Among the main "markers" of the cultural behavior of any person, according to the results of the survey, the following were identified (indicators are ranked in order of priority):

1. "Actions in public places" (72% of teachers and 84% of students). Students highlight this indicator more emphatically.

2. "Communicative and speech actions" (74.8% of teachers and 76% of students).

3. "Following social etiquette rules" (57.7% of teachers and 47.3% of students). To a greater extent, it is school teachers who are focused on this indicator.

4. "Actions in everyday life (self-service) and leisure activities" (50.7% of preschool teachers, 48.9% of students, 34.6% of school teachers). According to the feedback, it was noted in the comments that self-service issues are the most important for preschool teachers, and students often face issues of organizing leisure time for students with disabilities.

5. "A neat, tidy and presentable look" (29% of teachers and 35% of students).

Psychological culture is a rather important part of basic personal culture, which determines the processes of self-identification, self-fulfillment, social adaptation and inclusion, personal and career growth, balancing the inner world with the outer world [6].

It should be emphasized that more than 40% of respondents consider the legal aspects of a culture of inclusion to be the most difficult but relevant, which makes it necessary to include meaningful content focused on this issue to develop inclusive culture at the university. The survey showed that among the priority areas in this area, several issues can be distinguished (the rating is in a descending order of "merit", ranking was carried out according to the quantitative majority of certain preferences from the proposed choices):

1. Highlighting and showing interest of the general public towards the problems of edu-



cation, social inclusion and self-fulfillment of people with disabilities (65.6%)

2. Support and extension of successful practices in social contacts of persons with disabilities (63.9%)

3. Stimulating social and educational activity of subjects in inclusive educational spaces as cultural relays (57.7%)

4. Development and implementation of additional educational programs (44.6%)

5. Generalization, standardization and differentiation of the definitions on the problems of inclusion (23.6%)

A fairly extensive field for analysis and appropriate practical solutions can give us feedback about the alleged causes (factors) of the main difficulties in teaching people with disabilities. The respondents chose the three most significant ones, and the percentages of preferences for each of the proposed options were calculated (Table 3).

There is a high statistical significance of the difference in the groups of respondents according to the Pearson  $\chi^2$ —df-4,  $\chi^2=25.61$ .  $p < 0.001$ .

It should be pointed out that there is one item — “excessive attention towards students” that is not popular, but it is noted by a fairly large number of respondents, it would seem that there is nothing wrong with extra attention to this category of school or university students. In some studies among teach-

ers working in inclusion, it was noted that 50% of respondents (a sample of 400 people) are convinced that extra attention to students with disabilities leads to a negative impact on the learning outcomes of their classmates, reduces motivation and cognitive activity [14]. In our study, this factor of negative influence was noted by 23% of teachers and only 1.4% of all students surveyed.

### Discussion

The survey drew increasing attention to the “growth point” in terms of learning environment for people with disabilities at all levels of continuous education — this is the question of assistive technologies. Only 16% of all respondents described the concept of “assistive technologies” as “quite an ordinary thing used in practice.” Accordingly, 34% of respondents treated this concept as “absolutely unknown” and 50% as “something familiar, but not very clear.”

Among the main obstacles to the formation and development of the culture of inclusion, the respondents identified the following:

- poor awareness of inclusion issues among people (81.5%);
- lack of systematic government decisions in promoting the relevant ideology (57.7%);
- low socio-cultural level of societies (53.8%);

Table 3

### The Factors that Cause Learning Difficulties for People with Disabilities

Viewpoint	Respondents	
	Teachers	Students
According to my personal experience, I can assume that the main difficulties in teaching people with disabilities are due to		
behavior and attitude of people around	55.8	64.3
personal features of students with disabilities	61.6	53.5
abnormal social settings of students with disabilities and their immediate environment	36.6	43.4
lack of educational facilities for persons with disabilities	65	66.7
excessive attention towards the students with disabilities	22.5	1.4

- insufficient number of public initiatives (41.5%);
- low social activity of people with disabilities (23.8%);
- destructive social attitudes towards persons with disabilities (20.8%).

The issue of providing accessible, consistent and scientifically-based data on the features of various categories of persons with disabilities, their potential opportunities and resources of social integration remains relevant. A low socio-cultural level, a lack

of proactive solutions and low social activity are quite interrelated. The need to address these issues determines the main strategic approaches towards developing a culture of inclusion as an integral part of a modern university ecosystem [7].

Currently, Nizhny Novgorod Pedagogical University named after Kozma Minin is working on four main vectors of inclusive culture development in the university ecosystem (Table 1).

Systemic events and cooperation are the most important factors in the successful de-

Table 4

### The Main Vectors of Development of a Culture of Inclusion in Minin University Ecosystem

No.	Vector	Events
1	Educational activity	Building networking cooperation with educational and public organizations of the region in order to conduct educational intensive courses for children and adults with mental disorders. Development, testing and implementation of modular academic programs of additional education for a wide range of students: Inclusive volunteering in educational organizations; Culture of inclusion in counselor activities; Inclusive potential development in an educational organization; Mental health in the focus of psychological and pedagogical coaching
2	Cultural and educational activities	Organizing and running cultural and educational events "Ethics and aesthetics of social interaction in family education of children with mental disorders" Organizing and running a series of events in the format of a "Public lounge" to discuss the phenomenology of "a culture of inclusion". Extension of successful social involvement of persons with mental disorders by network partners. Posting and distribution of relevant resources in social networks, creating meaningful content, user activity management.
3	Information and analytics	Online seminars (webinars) on the problems of a common understanding, ideology and mechanisms for the effective implementation of socially inclusive processes in the system of affordable and high-quality continuous education. «Mental health disorders — myths and reality» — analysis and expert assessment of subjective viewpoints and objective data on the individual characteristics of the psychophysical development of persons with mental disorders and the prospects for their social inclusion. «Closed doors» — a factor analysis of the systemic isolation of persons with various deviations in mental development. Collection and analysis of subjective perceptions and personal expectations of different general public representatives regarding persons with mental disabilities and the prospects of their education, social involvement and inclusion.
4	Innovative and practical activities	Development and running cultural and leisure activities for persons with mental disabilities; Development and testing of technologies and tools for the social integration of persons with mental disabilities in an educational organization environment; Search and extension of successful practices of expanding social contacts of persons with mental disorders and their families.

velopment of a culture of inclusion in education [15].

### Conclusion

Various subjective perceptions and expectations on key concepts and positions in determining the essence and mechanisms of the development of a culture of inclusion cause problems with interaction in inclusive processes. Understanding particular issues and analyzing general trends in the development of inclusive processes both in society as a whole and in the system of continuous education allow us to reveal the meaningful aspect of inclusive culture itself as an integral part of the modern university ecosystem.

An absolute acceptance of persons with disabilities is actually demonstrated by only 4% of respondents, most of them are characterized by an implied or conditional acceptance of such people. More than half of the

surveyed teachers and more than 75% of students, future defectologist teachers, consider their own level of the culture of inclusion insufficient, indicating the need to implement some measures to form inclusive competencies in all subjects of modern educational ecosystems. About 73% of students and 49% of all teachers surveyed quite clearly distinguish between the concepts of “inclusive culture” and “a culture of inclusion”.

As practice shows, the efficiency of the development of a culture of inclusion in a modern university as an educational ecosystem directly depends on the level of involvement in systemic cooperation of all elements of the structure of an educational organization, as well as on the productivity of interdepartmental interaction and successful partnership with educational and methodological resource centers for the training of persons with disabilities based in universities.

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# Self-Preservation of Health and Personality among Students with Disabilities in the Inclusive Education as a Problem Statement

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The article describes the conceptualization of the health and personality self-preservation among students with disabilities, which is associated with the necessity to expand the methodological boundaries of the study and social modeling in inclusive education. There are considered features of the denoted social group self-preservation reactions, self-preservation behavior and self-preservation strategy. Starting from the assumption that self-preservation presupposes reaction to threats of different levels, a three-level model of the phenomenon is proposed: 1) physical and mental health self-preservation as reaction to internal and external threats; 2) self-preservation personality; 3) self-preservation of the social environment. The development of the model is based on the principle of contextually taking into account the uncertainty of modern society status, which involves numerous threats to human health and life. The connection between the conscious necessity for self-preservation and active behavior is emphasized. Within the inclusive university framework, it is possible to create successful self-preservation strategies, despite the stringent requirements for professional training, which are observed through comprehensive support for students with disabilities.

**Keywords:** concept of self-preservation; self-preservation of health and personality; students with disabilities; inclusive education; self-preservation behavior; self-preservation strategy.

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# Постановка проблемы самосохранения здоровья и личности студентов с инвалидностью в условиях инклюзивного образования

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Представлена авторская попытка концептуализации проблемы самосохранения здоровья и личности студентов с инвалидностью. Отмечается, что это связано с необходимостью расширения методологических границ изучения и социального моделирования инклюзивного образования. Рассматриваются особенности самосохранительных реакций, самосохранительного поведения и самосохранительной стратегии обозначенной социальной группы. Отталкиваясь от предположения, что самосохранение предполагает реакцию на угрозы разного уровня, предлагается трехуровневая модель феномена: 1) самосохранение физического и психического здоровья как реакция на внутренние и внешние угрозы; 2) самосохранение личности; 3) самосохранение социальной среды. Разработка модели основывается на принципе контекстуальности: учитывается состояние неопределенности современного общества, предполагающее многочисленные угрозы здоровью и жизни человека. Подчеркивается связь осознанной необходимости самосохранения с активным поведением. В рамках инклюзивного вузовского образования возможно конструирование успешных стратегий самосохранения, несмотря на жесткие требования к профессиональной подготовке, что обеспечивается через комплексное сопровождение студентов с инвалидностью.

**Ключевые слова:** концепт самосохранения; самосохранение здоровья и личности; студенты с инвалидностью; инклюзивное образование; самосохранительное поведение; самосохранительная стратегия.

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## Introduction

Modern society offers people with disabilities inclusive education, or general education on common terms in regular (non-specialized) higher educational institutions with the obligation to assist them during the process of receiving professional training/specialty. The author's work experience on this issue allows to assert that it has recently compensated for the physical disabilities of students and allows them to hope for a further successful life and professional scenario. However, the problem of disability is an obstacle for a person, with which they cope with while enrolling in university, during the course of their studies, and when graduating. Disability is associated not only with the destruction of the body, but also the personality. In this situation, enrolling in university and studying in a general (inclusive) group is, by and large, a self-preservation strategy.

Numerous risks to human life and health that have arisen in modern society make the problem of self-preservation extremely relevant; it is a question of humanity, the survival of humanity and its societal system. In science, this question arose in the 70s of the 20th century in the West and was connected with the active formation of a position in relation to someone's own health, and then a decade later this scientific direction became popular among Russian researchers: A.I. Antonov, I.V. Vereshchagina, I.V. Zhuravleva, G.M. Igoshchev, A.A. Kovaleva, I.B. Nazarova, L.A. Popova, L.S. Shilova and others. It is worth noting that the interest of scientists is gradually shifting from general methodological problems of self-preservation to life and health self-preservation in various social groups. Among the last, persons with disabilities are of particular interest, for whom health self-preservation is a matter of quality of life.

The health of these people has already suffered, so the subjects are faced with the task of continuous self-preservation of what is left, including through regular rehabilitation courses and the finding of opportunities to integrate into society under this condition.

One of the options for it is an educational lift, while for people with disabilities (to be precise, with intact intelligence) it is important to acquire a comfortable educational environment for personal development. Such a successful environment is the inclusive educational space of the university. The purpose of this article is to present the results of work aimed at creating the author's model for solving the problem of self-preservation for students with disabilities in inclusive education conditions.

## Methods

As the method is the theoretical modeling and conceptualization of the health and personality self-preservation of students with disabilities in inclusive education conditions. The introduction of the role of a person with special educational needs in the model of the process of educational inclusion sets a new perspective on the methods for studying this process. We consider the constructed model as an ideal representation of the solution to the identified problem. This meets the needs existing in the situation of the development of social and educational policies regarding persons with disabilities, which we have observed over the past twenty years. Our approach is aimed at identifying the personal traits of self-preservation among this category: the nature of their self-preservation behavior and self-preservation strategies. Conceptualization, from the specialist's point of view, is the process of constructing some recognizable concept [10]. In this case, the proposed model is necessary for an expanded vision of the inclusive education phenomenon.

## Results

When we speak about self-preservation, we mean the actions to preserve one's own life and the normal state of life-supporting systems on the part of an individual living being or an entire community of such beings. For a person with his biosocial essence, the problem of self-preservation is described in two aspects: biological and

social. In the first case, we are talking about preserving human life and health, as well as the whole world as a civilization, in the second — about preserving the individual and, by and large, society and all social systems, ensuring their vital functions. At the same time, for a person, self-preservation as an action can be at different levels: from reflexive to meaningful and planned/organized. The author's experience in the comparative analysis of animal and human behavior allows us to assert that self-preservation is a human reaction (the human body, his personality, a social subject) towards external threats to life and health. Like all living beings, the human's instinct of self-preservation manifests itself through pain and fear, which stimulate some meaningful or unconscious actions. Unlike animals, which are capable not only of basic physiological reactions, but also of complex behavioral programs of adaptation to climatic conditions, humans use the entire arsenal of social systems and developed technologies in self-preservation programs. Human programs for self-preservation are multivariate, since they differ for each person and for each social group.

Self-preservation presumes a response towards threats of different levels, which differ among representatives of different social and socio-demographic groups. In this case, we are interested in how self-preservation occurs at the designated levels among students studying in an inclusive educational environment

1. If the self-preservation of a disabled person as a complex phenomenon consists of actions directed against threats of different levels, then we should first of all highlight the internal level: negative processes occurring in the body and psyche. In this case, we are talking about the self-preservation of health (somatic and mental). The World Health Organization notes that disability is "a common phenomenon that many people experience throughout their lives. It is the result of the interaction between certain health conditions (dementia, blindness, spinal cord

injury, etc.) and a number of environmental and individual factors" [4].

Interaction with the external environment for a disabled person is painful and requires efforts on his/her part. The health status of a person with a disability depends on the potential of the body itself to respond to illness or injury, as well as on the conditions in which the person finds himself. Studying at a university or college is, by and large, a test time for the atypical student. The stress that arises during admission, when speaking in classes, defending projects, and exam sessions, gives rise to self-doubt, as well as fears about each subsequent situation. The consequence of the situation is the deterioration of health. A student with a disability must prove every time that he can be no worse than the rest of the norms of typical students, often to the detriment of his\her health. As a way out of the situation, the self-preservation instinct must be triggered, transformed into a conscious strategy for supporting one's health. It must be recognized that inclusive support at universities is aimed at supporting the self-preservation strategy. The complexity of such support, including the pedagogical, socio-psychological, and medical areas, can provide the greatest possible positive result. But medical rehabilitation is not a part of the functions of the university; the only correct solution may be close communication with medical institutions, centers and rehabilitation specialists.

Since disability is often associated with comorbidity, in the process of developing self-preservation strategies, students themselves must be aware of the possibility of comorbidity. From the point of view of doctors, "in real life, an ideal organism from the point of view of nature every second encounters a multitude of pathological agents, under the influence of which its individual components fail, leading to the development of a disease" [2, p. 4]. Accordingly, by definition, the non-ideal body of people with special needs reacts much more sharply to any negative factors.

Separately, we should highlight the threats to the mental health of a student with disabilities. Many people with special needs often already have mental health or emotional disorders. Entering university is associated with fears, self-doubt and problems with the adaptation to an inclusive group and an inclusive educational space. Typically, a child/young person with a disability will be more isolated from social life prior to enrollment. At the university, he/she gets him/herself into an intense student life with a large number of stimuli that require active involvement and emotional reactions. Further professional training is associated with situations requiring significant effort in terms of the preparation for classes and the necessity to keep up with students in good health. The inability of a student with disabilities to complete a task efficiently activates psychological defense mechanisms. The situations are complicated by the general discourse of continuous risks in modern postmodern society [7], anxiety, uncertainty and fears are supported by the external atmosphere, which significantly complicates the implementation of essentially optimistic self-preservation strategies.

2. The second level of threats affecting the self-preservation of a person with disabilities is threats against the individual, or more precisely, personal development. Since personality is characterized by the flow of mental processes, it is not possible to separate the previous level of self-preservation from a self-preservation of personality. Based on the self-concept, it is much more difficult for a person with a disability to maintain integrity and identity. Thus, if a young person enrolls in an inclusive university from a special educational institution, he is forced to rebuild his identity. Staying in a special educational institution (school) in most cases is much more comfortable for a person with a disability, since such limited isolation is gentle on his personality [13]. A situation arises when a young person, on the one hand, strives to

preserve their personality (what is formed at the moment), on the other hand, they feel the need to develop and overcome him/herself.

3. In turn, the personality is a socialized individual, which presupposes interaction with society, socialization and the presence of social connections: "Society and the individual interact according to the principle of two systems, one of which is dominant in relation to the other. This already presupposes a strategy for self-preservation of the individual as a system" [8, p. 274]. Consequently, preserving oneself as an organism and as a person requires another level — the preservation of a relevant social environment in which there are stable relationships that support a person with special needs [15]. For a person with a disability, threats from a social environment that is not fully accessible mean a personal challenge that requires social activity and joining forces to support the social institutions of inclusion. Self-preservation is always a response (reaction) to risks arising in modern society: man-made, environmental, social. Barriers increasing the social disadvantage for people with disabilities, according to the World Disability Report (2011), lead to poor health and learning outcomes [3]. It must be admitted that the awareness of threats forces people with disabilities to mobilize and look for opportunities to preserve themselves as personalities in society. Self-preservation here becomes not only a reaction to risks, but also a social need to ensure one's safety.

Professional higher education is one of the resources that ensures self-preservation. Higher education provides protection and recognition to a person with a disability. However, a fairly small percentage of people with disabilities can and do decide to enroll in university. The problem is that a person with a disability finds themselves between the possibility of complete failure, leading to self-destruction, and the growth of his/her capabilities, leading to self-preservation. For a special student, the

situation of studying at an inclusive university is associated with the constant overcoming of oneself. For obvious reasons, inclusive education can only be effective in the conditions of an accessible environment, ensuring a comfortable existence for atypical students, and their inclusive support. But without a self-preservation strategy developed by the student with special educational needs, efforts on the part of the university will not be successful. The connection between self-preservation and successful learning at an inclusive university is obvious, and the three-level model of self-preservation for people with disabilities fits quite organically into the inclusive context that the university poses.

### Conclusion

The development of inclusive education in higher education is built on the basis of successful practices, first foreign, and now our own, domestic, ones. It is probably needed to admit that the transition from a rehabilitation model to an inclusive one was rapid. In this regard, at the moment, the necessity of the generalization of the accumulated experience requires conceptualization. For specialists, having a well-formed concept will allow them to build a holistic system with more effective technologies that can be applied in practice. In turn, it is the methodological base that can and should serve not only for qualitative changes in inclusive education, but also for consolidating this educational policy and social practice in those territories and in those universities that have not yet accepted and fully mastered it. The understanding of the significance of methods in a seemingly practical issue has already matured in Russian science, for example, from V.M. Rozin we find an analysis of the methodological approaches to inclusive education applied by researchers and specialists [11]. In connection with the development of inclusive education in university, works devoted to the psychological character-

istics of students with disabilities appear in scientific literature; the position related to the socio-psychological adaptation of students is especially emphasized [12, p. 246], and the problem of activity of students with special educational needs [1]. But, in the same row, there is the problem of self-preservation, which is based on active behavior and an active position. In this regard, this concept should be taken into account in the methodological basis of inclusive education.

The practical orientation of the problem a priori connects it with organizational and managerial models, which makes it necessary to address two levels. Issues about the specific behavior and psychological characteristics of students with disabilities inevitably lead to the formulation of organizational problems and technological solutions. This part talks a lot about the concept of universal design as a method for building an inclusive educational space in universities, about interdepartmental and interstructural interaction in solving the problems of students with disabilities. In other words, many ideas are emerging, among which the most important for us are those that meet the issues of preserving the health of students with disabilities. Here it is important to take into account a certain "dilemma" that every inclusive university solves: on the one hand, when implementing inclusive education, the health capabilities of students with disabilities should be taken into account, but on the other hand, it is necessary to provide high-quality professional knowledge and prepare a specialist in a certain field. Researchers have already noted that inclusion gives rise to a number of paradoxes [14], but this fact must also be taken into account in the method. It was precisely the methodological "inadequacy" that made it possible to raise the question of developing the concept of the self-preservation of the health and personality of a student with disabilities. The formulation of this problem is not completely new; it returns

us to the issue of rehabilitation, posed earlier by the WHO [5], but the problem of self-preservation was not raised in the discourse of educational inclusion. When

constructing a model of inclusive education, researchers and practitioners should not forget about the health of students with disabilities [9].

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# The Concept of Professional Psychological Rehabilitation of Persons with Disabilities Acquired During Combat Operations and Special Military Operations as a Resource for Organizations of Higher Education

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The paper presents an analysis of scientific research on rehabilitation of persons with disabilities acquired during special military operations. We identified scientific deficiencies secondary vocational rehabilitation and vocational retraining of these persons. We described main approaches of the concept of professional and psychological rehabilitation in the context of psychophysiological, psychological, professional-pedagogical and socio-environmental directions. The resource potential of educational institutions of higher education is analyzed from the point of view of the effectiveness of the implementation of this concept.

**Keywords:** combat disabled; rehabilitation potential; professional psychological rehabilitation.

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## Концепция профессионально-психологической реабилитации лиц с инвалидностью, приобретенной в процессе боевых действий и специальных военных операций, в контексте ресурсного потенциала образовательных организаций высшего образования

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В работе представлен анализ научных исследований в области реабилитации лиц с инвалидностью, приобретенной в процессе боевых действий и специальных военных операций. Выявлены научные и практические дефициты в области вторичной профессиональной реабилитации и профессионального переобучения лиц с инвалидностью данной категории. Изложены основные подходы авторской концепции профессионально-психологической реабилитации данного контингента в контексте психофизиологического, психологического, профессионально-педагогического и социально-средового направлений. Проанализирован ресурсный



потенциал образовательных организаций высшего образования с точки зрения эффективности реализации данной концепции.

**Ключевые слова:** лица с инвалидностью, приобретенной в процессе боевых действий и специальных операций; реабилитационный потенциал; профессионально-психологическая реабилитация.

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## Introduction

The problem of the rehabilitation of persons with disabilities acquired during the performance of official duty during combat and special military operations (hereinafter this category is referred to as persons (person) with disabilities) has important scientific and practical significance.

Combatants are a specific contingent that require rehabilitation, and persons with disabilities of this category can be identified as a group of special social risk (V.S. Ageev, O.E. Prudnikova and others) [9].

When acquiring a disability, most from them they are forced to build a new perspective on life. A significant part (87%) forms a disabled identity that determines an implementation by them of destructive strategies of social functioning (Yu.M. Karayani) [8].

In domestic science, the research of problems of participants in military operations are concentrated within the framework of socio-medical (R.A. Abdurakhmanov, S.I. Syedin, P.A. Korchemny, L.A. Kitaev-Smyk, I.V. Soloviev, N.V. Tarabrina, etc.), medical and psychological approaches (L.V. Smekalkina, E.A. Nechaev, V.I. Zakharov and others) [8].

The issues of the pedagogical rehabilitation of military personnel performing

service and combat duty are considered fragmentally, from the point of view of preventing behavioral deviations and forming moral and psychological stability (E.I. Fedak, S.V. Lopatko, etc.) [11].

A single study of vocational rehabilitation is presented based on the provisions of the economic theory of the labor and employment of disabled combatants and military service (E.A. Zakharova) [5].

The modern concept of the integrated rehabilitation of participants in the Special Military Operation in Ukraine (SMO) includes medical rehabilitation, psychological and legal support, social support, training in additional professional training programs, the formation of certain categories of military specializations (T.N. Bonkalo) [1].

However, even a wide range of studies does not provide a systematic, scientifically based vision of the conditions for the complex rehabilitation of persons with disabilities of this category in the context of loss or disability, socio-psychological and professional readaptation.

There are also no studies reflecting the modern reality of the Special Military Operation, in which different contingents of citizens participate: career military personnel, military personnel who have started

contract service just prior to the SMO, mobilized personnel, volunteers with different basic professional skills, values orientations and socio-psychological priorities.

That is why the authors see it as necessary to develop a scientific concept, the key notion of which is the professional and psychological rehabilitation of persons with disabilities in this category.

### **Main Part**

Psychological rehabilitation should not be limited to relieving the symptoms of post-traumatic stress disorder, and is designed to focus on the development and liberation of the healthy potential of the individual, the formation of a normal social identity.

In this concept, professional psychological rehabilitation is considered as a complex of influences of a psychophysiological, psychological, professional-pedagogical and social-environmental nature, aimed to identify and update rehabilitation potential.

The essence of rehabilitation potential is determined based on the study and the generalizations of the socio-psychological portrait of a person with a given disability category and the comparative analysis of the characteristics of self-perception in normotypicity and disability in the context of various conditions of its acquisition.

The goal of professional psychological rehabilitation is to restore the normal social and professional functioning of the individual using the tools of psychoneurorehabilitation, psychoprophylaxis and psychocorrection, secondary career guidance and professional retraining, taking into account legal (how?), institutional (where?), personnel (by whom?) aspects.

Let us consider the areas of professional psychological rehabilitation in within this concept.

The goal of psychoneurorehabilitation work is to strengthen the cortical-subcortical interactions in the brain of subjects.

In the context of this approach, research moves in an “upwards” direction along the cerebral vertical. This level is based on taking into account the depths of the diencephalon, the nature of their emotogenic generation. Congenital forms of an aggressive character, the cerebral generator of which lies most deeply (6—8 axial section of the brain), in case of their individually high degree of severity, requires special instrumental neurorehabilitation interventions, because they are the most negative. Personalized work specifically at them is directed on neurofeedback using biofeedback (hereinafter referred to as BFB) and the electroencephalogram (hereinafter referred to as EEG).

Then the psychological status is studied, that is, the implementation of the functions of the higher neocortical level (psyche, intellect, behavior) is optimized.

As a result, social aspirations are assessed, that is, higher nervous activity, which is provided primarily convexitally, along the scalp horizontal is even more superficial compared to previous psychological level.

As a result, being unbalanced due to the disabling influence of combat, cortical-subcortical connections achieve balance, as evidenced by the effectiveness criteria of psychoneurocorrections: the index and power custom frequency range 6—9 Hz (%) at the final and final stage of neurofeedback in the form of alpha-thetaBFB-training using EEG. This range is proposed by the developers of neurofeedback technology and is generally accepted in the context of using alpha-theta-BFB-training using EEG (Egoscope-Reakor-Medicom, Taganrog).

Psychoneurocorrection technology is based on an algorithmic combination of esports elements; diagnostics of the cerebral generator of innate emotional (aggressive/anti-aggressive) personality traits with the calculation of the index of deep-seated aggressiveness; neurofeedback using

alpha-theta-feedback training using EEG (Egoscope-Reakor-Medicom, Taganrog).

The psychological direction is based on the identification, analysis and development/psychoprophylaxis/psychocorrection of three components of a person's psychological portrait of this category.

The personal component seems to be adaptive potential, which reflects the process of the active adaptation towards the conditions of the social environment, taking into account changes in mental and physical status.

This also includes the level and character of intrapersonal conflict, strongly aggravated in people who received injuries as a result of participation in combat. As well as a subjective assessment of self-identity in normative crises of the personality development of an adult.

The behavioral (conative) component contains an assessment of the ways of coping (coping strategies) with difficult life circumstances and the presence of transdiagnostic maladaptive mechanisms of overcoming stress. An important element determining the behavioral activity of a person is a subjective assessment of the quality of life, including in professional activities. For persons with disabilities, an important parameter of self-perception is body image, in particular, causing the greatest discomfort or dissatisfaction, the intensity of which determines the attitude towards suicidal behavior.

The cognitive component criterion assessed by the attentional abilities of the individual, which are the primary condition for effective intellectual activity, and also include the characteristics and the degree of development of social intelligence (O.V. Solovyova) [10].

The goals of implementing the psychological direction are: the activation of adaptive potential and healthy forces of a person; the resolution of intrapersonal conflict; the development of productive

coping strategies; the development of the qualities of social intelligence; increasing the subjective quality of life assessment, including body image orientation; the formation of an emotionally mature and conscious ego identity.

The technological aspects of this direction involve the development and implementation of psychodiagnostic and psychoprophylactic/psychocorrectional complexes.

The basis of the professional pedagogical direction is the understanding that most career guidance work, vocational training/education is performed in the context of childhood and adolescence (E.A. Klimov, S.Ya. Batyshev, A.P. Belyaeva, G.A. Bordovsky, N.V. Kuzmina, V.A. Slastenin, etc.).

At the same time, the lack of solutions to the problem of secondary career guidance and retraining for adults remains unchanged. For a person who is forced to leave a previous profession due to disability, pedagogical technologies used for career guidance of young people are often ineffective (V.A. Fordman) [12].

From our point of view, the criteria for pedagogical diagnostics within the professional pedagogical direction are training, learning ability, motivation for labor, the awareness of employment issues.

Depending on the original setting for retraining, different levels of immersion in the profession are possible: mastering techniques of the organization of activities; the acquisition of specific skills and abilities; the formation of attitudes, the value systems associated with the profession, finding meaning in professional activity.

Therefore, it is advisable to distinguish three semantic areas of learning: literacy training (computer, functional, social, etc.); professional education; general cultural education. These areas can be integrated and determine the quality of the result of professional retraining.

Let us note that, for the implementation of professional pedagogical direction, not only the correct selection of content and semantic aspects, methods and learning technologies are important, but also the use of special technical teaching aids or assistive technologies, taking into account the special educational needs of students with disabilities and special educational conditions.

Within the framework of the social-environmental approach, the author's position is based on taking into account the influence of external factors on the personality — the conditions of the environment and social environment and internal factors — anthropological characteristics and individual human capabilities.

The main criteria that allow for the formation of a basis for assessing the degree of dependence and/or influence of social and environmental conditions on the opportunities and success of professional psychological rehabilitation, are external-environmental (specific external conditions that determine objective opportunities for secondary career guidance); social group (social tendencies of a specific micro-group); socio-anthropological (correlation of social status, social roles, social activity).

A wide range of areas of the professional psychological rehabilitation of persons with disabilities of this category requires the readiness of the environment and personnel, the material, technical, educational and methodological support of the educational process in the field of providing psychological assistance, secondary career guidance and retraining.

Today, only educational organizations of higher education have the listed resources. First of all, these are universities on the base of which Resource Educational and Methodological Centers operate for training persons with disabilities (REMC HE), and partner universities that are translators of network technologies.

Universities are actively creating an accessible environment, career guidance, work and educational activities, employment assistance are provided, recommendations were developed and introduced for the development of adapted educational programs, adapted educational and methodological support, inclusive culture and communications (N.M. Borozinets, O.D. Salnikova, Yu.V. Prilepko) [2; 3].

The prevailing approaches are the individual approach, the designing individual professional and educational trajectories, support, mentoring and rehabilitation and pedagogical technologies (V.Z. Kantor, D.N. Bepalov, N.M. Borozinets, etc.) [7].

The research and technological bases are developing in universities. Every REMC HE has centers for the collective use of special technical means for training. There are also private examples. For example, a laboratory of professional psychological testing, a typhoaudio laboratory, an inclusive coworking space for professionals and educational initiatives for development entrepreneurial competencies.

Staff and teachers regularly undergo advanced training on issues of working with students with disabilities, from the formation of an inclusive culture to the use of assistive technologies. The curators of internships from among employers also undergo training.

Universities have experience in interdepartmental interaction and social partnership both at the regional and federal levels (N.M. Borozinets and others) [2].

## **Conclusion**

Thus, the development of the concept of professional psychological rehabilitation as part of the designated areas will make it possible to comprehensively solve the problems of persons with disabilities of this category in the process of readaptation to peaceful life, and universities of the Russian Federation, especially those on the basis of

which REMC HE operate, are a significant resource base for the implementation of all areas of the system of professional and psychological rehabilitation of persons with disabilities of this category and can act as platforms for the testing of the proposed concept. Approaches towards organizing training for persons with disabilities stan-

dardized in the federal network of REMC HE, as well as a friendly environment make it possible to integrate the population under discussion into the educational process, with the condition of the use of inclusive technologies in relation to processes of secondary education career guidance and retraining for adults with acquired disability.

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## Friendly Environment in Universities for Studying and Assistance for Students with Disabilities

### Дружественная среда для обучения и сопровождения студентов с инвалидностью в вузе

# Designing a Sociocultural Educational Environment for Students with Hearing Impairment

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The article is devoted to the problem of designing a sociocultural educational environment for students with hearing impairment. The authors understand the sociocultural educational environment as a community of participants of the educational process, surrounded by certain conditions the educational organization creates for personal and professional self-realization. The key components of the educational environment are communicational, educational, physical, and socio-psychological components. At the same time, the key component specifically for students with hearing impairment is the communication component. It is communication that is placed as the object of transformation and change in the focus of designing an educational environment.

**Keywords:** sociocultural educational environment; professional education; students with hearing impairment; communicational environment.

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# Конструирование социокультурного образовательного пространства для студентов с нарушением слуха

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Статья посвящена проблеме конструирования социокультурной образовательной среды для студентов с нарушением слуха. Социокультурная образовательная среда понимается авторами как сообщество участников образовательного процесса, окруженных определенными условиями образовательной организации для личностной и профессиональной самореализации. Компонентами образовательной среды являются коммуникационный, образовательный, физический, социально-психологический. При этом ключевым компонентом именно для студентов с нарушением слуха выступает коммуникационный. Именно коммуникация ставится в объект трансформации и изменения в фокусе конструирования образовательной среды для глухих.

**Ключевые слова:** социокультурная образовательная среда; профессиональное образование; студенты с нарушением слуха; коммуникативная среда.

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## Introduction

An inclusive approach to education requires the adoption of the principles of inclusion and ensuring conditions of universities education accessibility for all students categories, including students with hearing impairment, which is expressed in the creation of a special communicative, architectural, technological environment for them; in fact, we are talking about a special

socio-cultural environment organizations [5]. At the same time, the inclusive education system, which involves the joint deaf and hearing people education, is not yet fully ready to respond to the challenges of accessibility policy. A number of problems in the educational process organization and social adaptation of deaf people during their vocational education in the inclusive groups have not yet been resolved. Modern research

questions in this field are related to the problems caused by the contradiction between the need to implement inclusion in an educational organization and the lack of knowledge about the specific conditions and technologies that allow students with hearing impairment to master educational programs in universities and institutions of secondary vocational education.

There is a number of researches devoted to the education of deaf and hard of hearing people. So, for example, M.I. Yasin addresses the problem of deaf people receiving higher education and points out the communication barrier as the main barrier to their integration into society, which is most clearly manifested in the sphere of interpersonal communication and access to information, and can also be traced in the formation of exclusive, often "closed" communities among students with hearing impairments, they become self-isolated from others based on the culture of deafness and the use of Russian Sign Language as the main means of communication [14].

N.V. is actively involved in the problem of the deaf as a sociocultural community and the possibilities of their adaptation in society. Bolshakov, who emphasizes that changes in the system of vocational education of the deaf and hard of hearing, says that the higher education, on the one hand, opens up new opportunities for such people with hearing impairments, and on the other, it becomes a barrier to their professional adaptation, since the labor market is not quite ready for employment of many people with hearing impairment who have mastered the professions for which they were called but had not previously been trained on such a large scale [3,4].

Also, a review of modern research showed that no stable understanding of the content of the concept of "sociocultural educational environment" has been formed. Although this concept became the focus of attention among the studies of V.V. Rubtsova, I.K. Shalaeva, E.N. Nenakhova, S.V. Zhuravleva, A.V. Veryaeva, A.P. Nadochego, V.Yu. Lunkova and many others [6; 10], although, of course, it is based on the classical works of B.G. Ananyeva, G.O. Balla, L.S. Vygotsky, V.V. Davydova, D.B. Elkonin [7; 11; 12].

The educational environment is an environment of certain conditions for the student's professional and personal self-realization, as well as a special management model, where the focus of attention falls on the key components of the educational environment (training, organizational policies, organizational values and practices, subjects of the educational process, technologies and implementation of educational mechanisms) [6]. Most authors recognize that one of the most significant agents of socialization and social adaptation of persons with hearing impairment is the education, and the formation of an accessible and open sociocultural educational environment for persons with hearing impairment is possible only when receiving education in an inclusive bilingual environment with intensive interaction of deaf and hearing students using verbal-sign system [1].

Thus, the purpose of this work will be to study the content and peculiarities of communication and interaction between students with hearing impairment and health standards in professional education as conditions for designing an inclusive sociocultural educational space. The stated goal determined the research hypothesis, which is to recognize the content and direction of the communicative process between deaf, hard of hearing and normotypical students as the key conditions for constructing a sociocultural educational space.

## Methods

The method of collecting empirical data was questionnaires. The survey was conducted in 2022 and 2023 among students studying at Russian universities and institutions of secondary vocational education by filling out a Google form and a handout questionnaire. We used several restrictive criteria for hearing respondents, which were: the presence of persons with hearing impairments at the university in which they study, as well as the presence of experience interacting with deaf and hard of hearing students at their university. A total number of 1608 respondents (1432 hearing and 176 with hearing impairment) took part in the study [15]. The sample was compiled in proportion to the overall distribution of the ratio of the number of students with hearing

impairments and normotypical students. Of the total number of normotypical students surveyed, 28.4% were males and 71.6% were females, and among those with hearing impairments, 36.4% were males and 63.6% were females, respectively. The age range of respondents was from 16 to 48 years in both groups, with a predominance of ages from 19 to 24 years (62%). For the deaf and hard of hearing, the text of the questionnaire was adapted by integrating into it recorded videos posted using Google services with the questions translated into Russian Sign Language (hereinafter referred to as RSL). Adaptation of tools using videos is associated with the need for a more accurate and correct understanding and interpretation of questions, since the deaf and hard of hearing most often have impaired command of the grammatical structure of the text and understanding of the meaning of grammatical forms due to limited vocabulary, and it is also difficult to form cause-and-effect relationships, which complies with the methodological principles of Deaf-studies.

## Results

It is noted an uneven nature of the social contacts intensity between deaf and hearing students, which is caused, rather, by the need for communication during study. This is partly due to the fact that the deaf community is quite closed. Networks of social contacts are homogeneous, the focus of communication is shifted towards communities exclusively of the deaf. Thus, more than half of the hearing people surveyed answered that they do not have friends or relatives who are deaf or hard of hearing (54%), and among the deaf and hard of hearing such answers were only 7%.

Readiness for joint learning, which we consider as an indicator of the formation of the communicative component of the educational environment, is not fully reflected. It was recorded that 15% of hearing and 19% of deaf and hard of hearing respondents do not support the idea of joint learning, only 17% of hearing and 35% of deaf people believe that it is better for deaf and hearing people to study together.

It is recorded that in the interaction between hearing and non-hearing people, stereotypes

prevail influencing the results of communication. Deaf people believe that they are less successful in life, while hearing people have more opportunities to succeed than deaf people, and about half of deaf people believe that hearing people are more intellectually developed than them. At the same time, more than half of the deaf and hard of hearing (54.8%) respond no problems in communication with hearing people.

It is noted that hearing people cite lack of knowledge of Russian Sign language (69%) as the reasons for the main difficulties in communication, and deaf people cite fear of misunderstanding on the part of hearing people (39%) and embarrassment (30%). The use of the Spearman coefficient ( $p = 0.77$ ) confirmed the presence of a strong direct connection between learning experience and the presence of problems in communication with hearing people; studying in a specialized rather than a general education school determines a greater likelihood of having problems in communication with hearing people in adulthood.

The mutual attitudes of respondents were determined using the modified social distance scale of E. Bogardus [15]. The results of using the E. Bogardus social distance scale show that the attitudes of hearing people reflect a greater degree of distance than the attitudes of the deaf and hard of hearing. Thus, only 8% of hearing people are ready to introduce a deaf person as their close relative, in contrast to 45% of deaf people who are ready to accept hearing people in their immediate social environment.

The study also identified the preferred ways of communication between hearing and deaf people: correspondence on paper (41% of respondents) and communication with the help of an interpreter (26% of hearing respondents), and for the deaf it was lip reading and speaking with pronounced articulation (37%). Also, hearing people (57% of respondents) are ready and want to interact more with deaf people in joint events, because they believe that this will help them better understand the culture of the deaf and expand their social contacts circle; both deaf and hard of hearing people responded (77% of respondents are ready for more close interaction). At the same time, informal ways of

communication (clubs) were identified as one of the preferred forms of interaction between deaf and hearing people in the process of joint communication. Respondents chose dormitories, workplaces, or areas of educational institutions as “locations,” spaces for interaction. The presence of problems in interaction and barriers to communication are noted by both the deaf and hard of hearing and hearing people, while hearing people note their presence to a greater extent, associating them with speech barriers or the absence of deaf and hard of hearing people in their social circle. Deaf people note the lack of communication skills of hearing people in RSL. Deaf people indicate the presence of psychological barriers (fear, uncertainty, awkwardness, expectation of aggression from hearing people). Not all deaf, hard of hearing and hearing students share the concept of educational and social inclusion, emphasizing the difficulties in organizing educational activities when teaching the deaf. Respondents note that joint learning requires special conditions: consent of all participants in the educational process; studying lectures together, but being separated in practical classes, or studying in different groups, but participating together in extracurricular activities; availability of translation into Russian Sign Language. At the same time, there is a single opinion about the fear of destruction of the culture of the deaf community due to close and intensive interaction with hearing people. Deaf respondents consider it important for hearing people to have basic Russian Sign Language skills.

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### Discussion and conclusion

Currently, there is a trend towards bringing together the various deaf and hearing communities. At the same time, speaking about the need to design the educational environment at a university for students with hearing impairments, it is important to ensure the natural and progressive transformation of the educational environment precisely in the development of trajectories and different forms of communications among participants in the educational process. Thus, the most popular practices are extracurricular ones, in which communication is not burdened by the obligation of the student's role, his responsibilities and learning conditions. In communication between hearing and deaf people, there is often a problem with understanding the information. All this can also be corrected through various assistive practices of auditory-speech work with hearing-impaired students and the development of RSL competencies among hearing people. Thus, the communicative component of the sociocultural educational environment of a university is represented by a set of subsystems: technological, correctional, educational, motivational, and when constructing a sociocultural educational environment for students with hearing impairments, its communicative component becomes the leading one. Empirical data confirm the distinct importance of the communication processes of participants in the educational process as a central element that allows us to bring together the cultures of the deaf and hearing people in order to overcome the social exclusion of the deaf.

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# Psychological Well-Being of Students in a Diverse University Environment

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The high diversity of the student sets the requirements for redundancy of conditions and environments in a modern university. Unied models of formation and standards do not allow us to see the individuality of students and solve the problems of social inclusion. Professional training should take into account the satisfaction and well-being of students. We are exploring the indicators of psychological well-being and constructive behavioral activity among students studying in a diversity university environment. The empirical basis of the study was Tyumen State University, where the model of individual educational trajectories is implemented. The principles of individualization define the heterogeneity of the university environment at the educational, communicative and organizational levels. The study involved 537 students in the period from 2019 to 2023. The results allowed us to confirm that the diversity environment of the university ambiguously mediates indicators of psychological well-being. Students studying in changing and diverse environment give more importance to a personal growth and personal goals than those who study in the traditional bachelor's degree model. However, they are less open, not inclined to maintain trusting relationships, less autonomous in forming their own opinions and decisions. In a situation of forced isolation (COVID-19), the psychological well-being of students decreased, which may be due to insufficiently accumulated interpersonal relations during full-time study.

**Keywords:** psychological well-being; diversity environment; individualization of learning; individual educational trajectory; students; university; agency.

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Высокое разнообразие контингента обучающихся задает требования к избыточности условий и сред в современном университете. Единые модели подготовки и стандарты для всех не позволяют увидеть индивидуальность разных студентов и решить задачи социальной инклюзии. В профессиональной подготовке следует учитывать удовлетворенность и благополучие студентов. Целью настоящего исследования было изучение показателей психологического благополучия и конструктивности поведенческой активности у студентов, обучающихся в гетерогенной среде университета. Эмпирической базой исследования стал Тюменский государственный университет, где реализуется модель индивидуальных образовательных траекторий. Принципы индивидуализации задают гетерогенность среды университета на образовательном, коммуникативном и организационном уровнях. В исследовании приняли участие 537 студентов, обучающихся в период с 2019 г. по 2023 г. Результаты позволили установить, что гетерогенная среда университета неоднозначно опосредует показатели психологического благополучия. Студенты, обучающиеся в условиях изменчивости и разнообразия, значимо более высоко оценивают личностный рост и цели в жизни, чем те, кто обучается в традиционной модели бакалавриата.

Однако они менее открыты, автономны в формировании собственного мнения и принятии решений, не склонны к поддержанию доверительных отношений. В ситуации вынужденной изоляции (COVID-19) психологическое благополучие студентов снизилось, что может быть связано с недостаточным накопленным ресурсом межличностных отношений в период очного обучения.

**Ключевые слова:** психологическое благополучие; гетерогенная среда; индивидуализация обучения; индивидуальная образовательная траектория; студенты; университет; агентность.

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### Theoretical Framework for the Study

The transformation of higher education is the response of modern universities to the unpredictability of change [4] and growing uncertainty [1]. The Declaration of the United Nations defines the need to “ensure a safe, free from violence and social barriers, and effective learning environment for all” [5] among the goals of sustainable development, which sets high humanistic standards. The focus is on the person, his development and well-being.

Increasing diversity (foreign students, students with disabilities, gifted students, etc.) sets requirements for new learning conditions: the accessibility and convenience of premises, educational programs, services and support. The quality criterion for assessing changes is user satisfaction, that is, the subjective and psychological well-being (hereinafter referred to as WB) of students, teachers, and university staff.

Psychological well-being is studied quite widely in modern science [3]. The integration of subjective experience and a satisfaction with life (the hedonic approach) with its value and semantic foundations (the eudaimonic approach) is combined in the theory of K.D. Riff, who considered well-being as a basic

subjective construct that reflects a person’s perception and assessment of his self-realization from the point of view of the peak of potential capabilities [20].

In professional formation and personal development, well-being has a fundamental importance [19]. It is associated with autonomy, self-acceptance, goals and values in life [8; 11]; with emotional intelligence, empathy, social skills and self-esteem [19].

At the same time, the orientation of educational programs towards common training models and common standards for everyone exacerbates a number of contradictions. “There is no “typical student,” no single curriculum or approach that will work across disciplines or cultures” — writes L. Goodman [16]. Indeed, educational profile [2], social status [21], racial [17] and gender differences [14], disability and physical conditions [18] can influence students’ well-being. It was also found that first year students have a lower level of well-being [2, p. 7].

For a university today, it is becoming critically important to take into account the diversity of student youth as a required condition for supporting their well-being. Individualization as a trend cannot be understood only as facilities and services. The

learning trajectory should activate subjectivity, agency, and pre-adaptation [6]. E.G. Samokhvalova, in her research, emphasizes that well-being for the modern youth is more associated with pleasure than with achievement and activity [11].

The modern university is in search of a model that can solve the problems of social inclusion by activating the personal potential of everyone. Since September 1, 2017, training has been implemented on the basis of individual educational trajectories (hereinafter referred to as IET), on the basis of Tyumen State University. The fundamental features of training in this model are: the modularity of training, the multi-subject teaching staff of nuclear disciplines, the heterogeneity of training teams, the author's nature of electives, the formation of unique competency profiles, meritocracy, free competition for talents [12, p. 303]. The stated principles are significantly closer to achieving the goals of social inclusion.

IET ensures a high heterogeneity of the university environment: at the educational level (diversity of electives and learning paths); at the level of interaction between teachers and educational teams (students spend up to 30% of their study time in constantly changing groups, where there are students of various courses and areas of training, foreign students, students with disabilities and disabilities); at the organizational level (different buildings, individual schedules).

The individualization of studying the IET model makes it possible to activate subjectivity, agency, and the constructiveness of the individual, which correlates with the personalization of training in world practice. Building a plan for your own individual, educational and professional development allows for you to comprehend learning, academic performance and (or) achieved results [15], and promotes the taking of responsibility for development based on choice [9].

The diversity environment of the university when designing IET actually replicates

the key challenges of our time, placing students in the construction of an ever-changing and fluid reality. The students' independent choice of disciplines to study is associated with a subjective idea of the path, the structuring of the information, the reduction of many alternatives, individual choice and reflection. D.A. Leontiev identifies the readiness to make a choice as the ability to make it consciously, independently and take responsibility for the risk [7, p. 110].

The purpose of this study was to study the indicators of WB and the constructiveness of behavioral activity among students in a diversity university environment, depending on the ability to build IET in the learning process.

### Empirical Research

**Methods.** The study included determining the level of WB, its components and strategies of coping behavior, including the constructiveness index. Diagnostic methods were used: the "Psychological Well-Being Scale" by K. Riff, adapted by T.D. Shevelenkova and V.V. Fesenko and "Strategies for Coping with Stressful Situations" (SACS) by S. Hobfoll, adapted by N.E. Vodopyanova, E.S. Starchenkova [13]. Mathematical processing was performed using SPSS Statistics 17.0. A comparative analysis of the diagnostic data was carried out using Student's t-test and the Mann-Whitney U-test, correlation analysis — by calculating Pearson's r-coefficient.

The empirical basis of the study was the results of testing 1—4<sup>th</sup> year students of Tyumen State University, aged from 18 to 22 years ( $M=20.1$ ;  $SD=0.92$ ), studying in the period from 2019 to 2023. A total of 537 people took part, of who 87% are girls and 13% are boys. Based on the diagnostic results, 2 samples were formed: the first — 357 people studying IET in a diversity university environment, the second — 180 students who at the same time were receiving education in academic bachelor's degrees. The study was based on a cross-sectional

method; students from both samples underwent a diagnostic examination during their studies in the psychological discipline once per academic year.

### Results and Discussion

The conducted research includes the following stages of analysis of the obtained data: 1) the comparison of the WB indicators of students studying the IET model and students studying in traditional undergraduate programs; 2) the description of the dynamics of student WB indicators in two established samples during the period associated with studying during the COVID-19 pandemic and in the post-pandemic period; 3) the study of the dominant strategies of coping behavior in relation to WB of students from both samples.

A comparison of the average WB values in two samples of students already studying IET and the traditional academic bachelor's program indicates the presence of a good internal resource in all young people, since all values are recorded at the average level and above the average (fig. 1).

It was found that students studying IET have statistically higher results in terms of personal growth ( $t = 2.7$ ;  $p < 0.01$ ) and goals in life ( $t = 2.6$ ;  $p < 0.01$ ). It means they are more open to new experiences, have a sense of direction and clearer life goals than students studying in traditional programs.

They also have statistically insignificantly higher results in self-acceptance (64.6) and control of the environment and activities (58.4). They are less inclined to maintain trusting relationships, less autonomous in forming their own opinions and making decisions than bachelors do.

In other words, the individualization of education can stimulate the demonstration of characteristics that determine subjectivity and agency (determination, leadership qualities, self-development, etc.). At the same time, existence in a constantly changing diversity environment with a lack of stable social connections can stimulate the development of a tendency to be guided by stereotypes or short-lived trends in social consciousness.

2) The dynamics of students' well-being indicators were analyzed over 4 academic

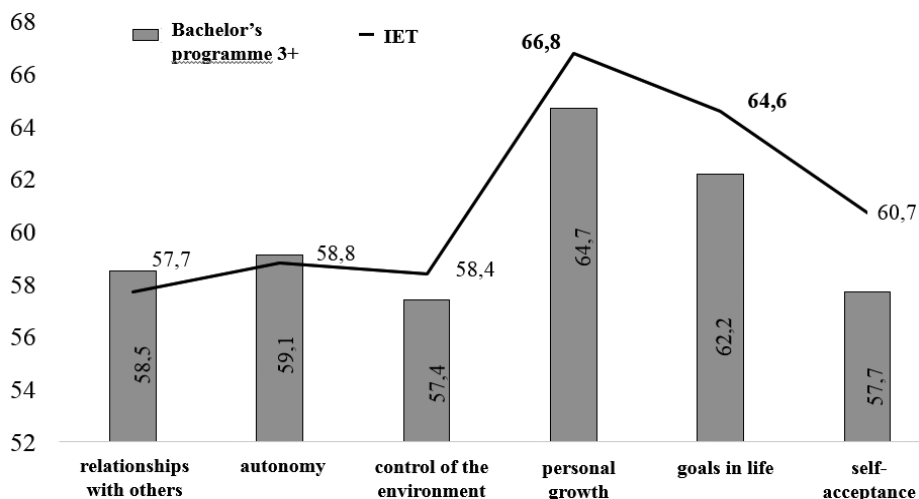


Fig. 1. Average scores of indicators of the psychological well-being of students enrolled in traditional bachelor's and IET programs

periods (from 2019 to 2022). Particular attention is drawn to the analysis of the dynamics of WB trends associated with distance learning in COVID-19 and the recovery from it (fig. 2).

It was found that the overall WB rate in the pre-pandemic 2019—2020 academic year was higher for students studying IET (372.5) than for traditional undergraduate students (363). In the first year of distance learning (2020—2021 academic year), the overall well-being for all students was the lowest, regardless of the learning model. Subsequently, students studying in the traditional model of bachelor's degrees had a higher overall well-being score (369.58), which indicates their greater adaptive resource to the conditions of social isolation. The statistical significance of the differences in the severity of well-being was not confirmed in these three periods among students in the two samples.

At the same time, we found that before (12%) and after (17%) leaving distanced learning, the number of respondents with a low level of the overall WB indicator of students with IET turned out to be almost

two times less compared to the period of the COVID-19 pandemic (28—29% in 2020—2022). It is obvious that forced social isolation had a fairly strong frustrating effect on them.

The recorded patterns confirmed the previous studies, which established that the innovative competence of the subject (openness to new experience and innovation) predicts a decrease in well-being [10].

3) The variability in the structure of WB indicators of students studying the IET model over 4 academic years was also analyzed (fig. 3).

The highest values were recorded for the “personal growth” and “goals in life” indicators. Such WB indicators as “autonomy”, “control of the environment” and “personal growth” turned out to be less susceptible to changes. A sufficiently high level of development, as well as the stability and non-susceptibility to the influence of frustrating factors, allows us to consider these indicators as the main resource of WB.

The indicators of positive relationships with others, goals in life, and self-acceptance turned out to be less stable. During

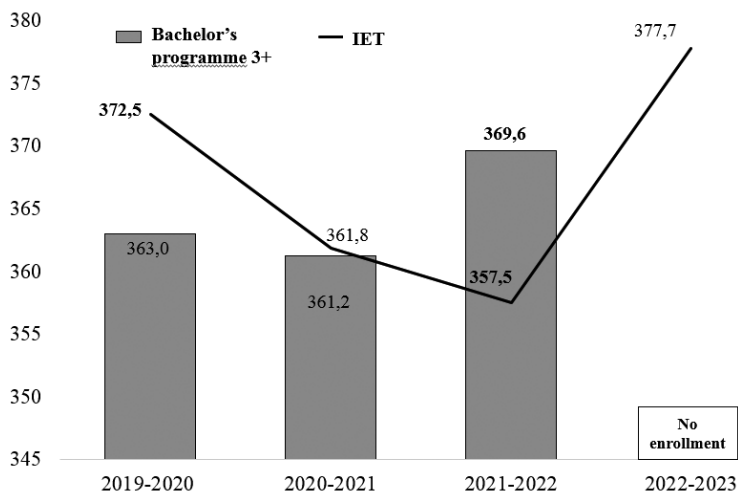


Fig. 2. Dynamics of the overall psychological well-being indicator in groups of students studying in traditional bachelor's and IET programs (average scores)

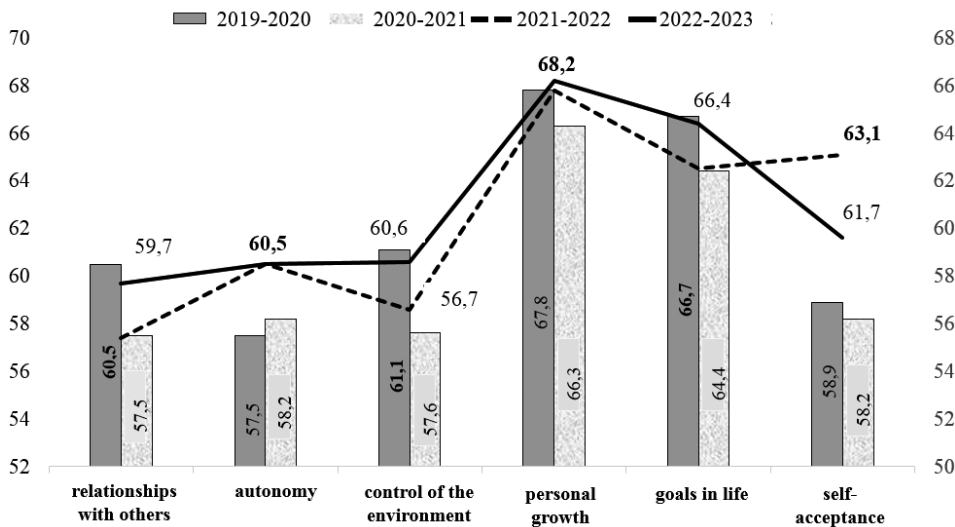


Fig. 3. Dynamics of the indicators of the psychological well-being of students studying with IET (average scores)

the pandemic years (from 2020 to 2022), there was a “failure” in students’ reliance on stable, trusting relationships with others, an increased tendency to limit contacts, a decrease in a sense of purpose, and a disorientation in life. Self-acceptance decreased slightly in the first year and then increased steadily.

4) Strategies for overcoming stress (coping), including educational and professional stress, are one of the tools for maintaining a person’s WB. Their constructiveness is determined by the activity of the behavior model and increases a person’s resistance to stress.

Correlation analysis made it possible to establish a significant number of statistically significant high-level connections between WB indicators and coping strategies among students in both samples: 19 direct connections (in total) between various WB indicators with the constructive “assertive actions” and “seeking social support” copings; and 6 connections (in each group) with the non-constructive “avoidance” coping. For students studying IET, an additional

statistically significant direct connection with the constructive “entering into social contact” coping was identified. Perhaps, the constant presence in a diversity environment makes it possible to train students’ communication skills, reducing the potential for conflict and positively influencing the psychological state of the student.

A high level of the general constructiveness index was identified in 57 respondents (34 IET students and 29 bachelors), a low level — in 71 respondents (23 IET students and 48 bachelors). The results of their WB indicators are presented in Figure 4.

In the group with a low constructiveness index, all WB indicators are slightly higher among students studying in the traditional bachelor’s program; statistically significant differences were recorded in the indicator of positive relationships with others ( $U=400$ ,  $p<0.05$ ). They rely on the potential of stable, comfortable connections with others as a resource, even if they themselves are unsuccessful in solving difficult life situations.

A high index of constructiveness of coping behavior provides students studying IET

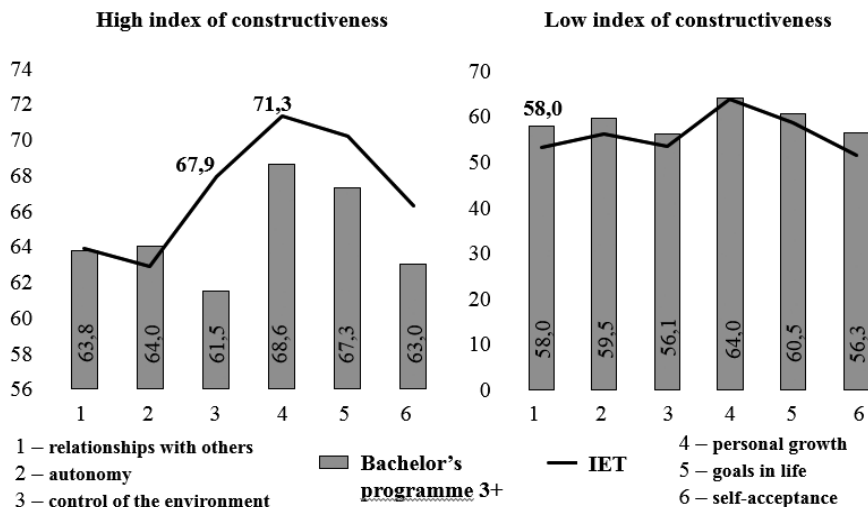


Fig. 4. Average scores of the WB indicators of students with high and low indexes of constructiveness of overcoming behavior

with higher indicators of WB, in addition to autonomy. The indicators of personal growth ( $U=289$ ,  $p<0.05$ ) and control of the environment ( $U=135$ ,  $p<0.01$ ) are statistically significant. The need to coexist in a constantly changing diverse social environment stimulates the development of students' social competence.

### Conclusions

The diversity environment of the university ambiguously mediates the WB indicators of students. By creating conditions of redundancy, the university is making significant progress in solving the problem of equal rights and opportunities for inclusion in the educational process of students with different status, health capabilities, nationality, and age. At the same time, when constructing an IET model, it is important to rely on taking into account the needs of students.

Autonomy, control of the environment and personal growth can be considered as the main resource of WB among IET students. These indicators are less susceptible towards the influence of frustrating factors, including

forced isolation during the pandemic period. Orientation towards self-development and leadership is ensured by a high index of the constructiveness of overcoming behavior (assertive actions, entering into social contact and seeking social support, disinclination towards avoidance coping), which serves as the basis of their WB.

Indicators of positive relationships with others, goals in life, and self-acceptance turned out to be less stable among IET students. A diversity environment allows for students to pay more attention to their desires and goals. At the same time, such attention "to oneself" can provoke egocentrism or a dissatisfaction with oneself, disunity, and disorientation. Forced social isolation in the COVID-19 situation has revealed deficits in positive relationships with significant others (teachers, fellow students). In studying, it is important to allocate a significant place to communication and its resources through organizational (electives, events, activities at the university) and pedagogical (use of face-to-face interactive forms and teaching methods) conditions.

A diversity environment is not a universal answer to solving the problems of social inclusion. Self-organization and regulation skills allow for students to understand better what they want. IET allows you to “reformat” the content

of education, indirectly influencing the level of WB. This is a mechanism that calibrates a student’s capabilities from average to unique, when everyone can have their own set of “soft skills” and be successful in learning.

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## Professional Preparation for University Teachers and Assistants Working with Students with Disabilities

### Подготовка кадров для обучения и сопровождения студентов с инвалидностью в вузе

# Inclusive Culture as an Indicator of the Readiness of University Specialists to Support Inclusive Higher Education

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The effectiveness of inclusive higher education is determined by a complex of interrelated factors, including the readiness of university staff for inclusion. Taking into account the requests of the state and society, the strategy for the development of education in Russia, the central place in discussing the readiness of university staff for inclusion should take an assessment of the level of development of the inclusive culture as an integral indicator of inclusive competence and personal readiness, which became the goal of this study. The study was implemented on the basis of the Resource Educational and Methodological Center of the North-Western Federal District for the training of people with disabilities of the Cherepovets State University from 2017 to 2023. The pilot study involved 1680 students graduated from the Resource Educational and Methodological center from 2017 to 2023, they filled a questionnaire to assess the level of inclusive culture. The representative sample is represented by 200 employees of 28 universities of the Northwestern Federal District. The results of the study showed that an inclusive culture is a specific neoplasm, the result of professional and personal development of specialists. The level of inclusive culture differs depending on the type of professional activity, it differs in the qualitative composition of the characteristics of representatives of the administration, teachers and educational support staff. Education on the topic of inclusion has a positive effect on the personal readiness for inclusion of university staff. However, the state of inclusive competence has a significant variability of characteristics within the surveyed sample and demonstrates the need for psychological and methodological support and diverse formation for university staff.

**Keywords:** students with disabilities; inclusive higher education; readiness for inclusive education; inclusive culture; personnel training.

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## Инклюзивная культура как показатель готовности специалистов вузов к сопровождению инклюзивного высшего образования

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Эффективность инклюзивного высшего образования определяется разными факторами, в т.ч. состоянием инклюзивной культуры сотрудников вузов. С целью ее оценки как интегрального показателя инклюзивной компетентности и личностной готовности на базе Ресурсного учебно-методического центра Северо-Западного федерального округа по обучению лиц с ОВЗ и инвалидностью Череповецкого государственного университета было реализовано исследование. В пилотном исследовании приняли участие 1680 человек, прошедших обучение в РУМЦ СЗФО ЧГУ с 2017 по 2023 гг. и опрос по оценке уровня инклюзивной культуры. Репрезентативная выборка представлена 200 сотрудниками 28 вузов. Выявлено, что инклюзивная культура является результатом профессионального и личностного развития. Ее уровень имеет отличия в зависимости от вида профессиональной деятельности и различается у представителей администрации, преподавателей и учебно-вспомогательного персонала. Обучение по теме инклюзии положительно влияет на личностную готовность к инклюзии. Однако инклюзивная компетентность имеет существенную вариативность характеристик и демонстрирует необходимость психологической и методической поддержки сотрудников вузов, вариативной их подготовки.

**Ключевые слова:** студенты с инвалидностью; инклюзивное высшее образование; готовность к инклюзивному образованию; инклюзивная культура; подготовка кадров.

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## Introduction

In modern society, there is an extremely high demand for professional education for young people with disabilities, which is due to the opportunity to pursue a profession to live an independent life and achieve goals. Under these conditions, various aspects of specialists' readiness for inclusion are becoming increasingly relevant research topics in both international and domestic research contexts. The applied request for such research is determined by the practice available in our country for the systematic and regular personnel training for inclusion, as well as activities on the part of regulatory and supervisory authorities. Taking into account the demands of the state and society, strategies of development of education in Russia, when conducting monitoring activities to assess the readiness of specialists to work in an inclusive environment, it is important to assess their inclusive culture as an integral indicator of inclusive competence and personal readiness to support people with disabilities, their continuous and successive professional development, employment promotion and the effectiveness of graduates with disabilities.

The concept of "inclusive culture" is a multicomponent definition, has a polymorphic interpretation (S.V. Alyokhina, Yu.V. Melnik, E.V. Samsonova, A.Yu. Shemanov [1], T. Booth and M. Ainscow [3], etc.). But, regardless of the scientific approach, inclusive culture is recognized as the fundamental basis for creating the culture of an inclusive society in which differences are respected and supported by society, and equal oppor-

tunities are provided for those with special conditions. T. Booth and M. Ainscow [3] write about three main vectors in the development of educational organizations: the creation of an inclusive culture, the development of an inclusive policy and the introduction of inclusive practice. E.S. Slusareva, A.V. Dontsov believe that professional and personal readiness are a component of an inclusive teacher's culture [20]. Nataša Tančić, Aleksandra Pavlović point out the importance of inclusive culture as a key aspect of quality work in creating an inclusive educational environment [18]. S.V. Alekhina, A.Yu. Shemanov believe that the inclusive organizational culture of the university contributes to the successful implementation of the goals of higher education [14]. I.N. Simaeva, V.V. Khitryuk, determine the importance of work on the development of inclusive culture, describe its essential characteristics [9]. S.V. Alyokhina, Yu.V. Melnik, E.V. Samsonova, A.Yu. Shemanov describe the application of a comprehensive assessment of the inclusive process as a mechanism for designing inclusion in an educational organization [1]. D.V. Afanasyev, O.A. Denisova, O.L. Lekhanova, V.N. Ponikarova states that higher education teachers' training for professional activity in an inclusive education environment should contain a full cycle of measures to monitor the readiness for inclusive education [2]. O.B. Yanusova proposed a three-component structure of inclusive culture, in which axiological, personal and communicative, cognitive components are differentiated [13]. O.A. Denisova, O.L. Lekhanova, V.N. Ponikarova, T.V. Gudina identify

four components of inclusive culture: value and motivational, cognitive, operational activity, affective components [4]. N.V. Starovoi considers the “surface” and “underwater” part of inclusive culture: the external environment (a barrier-free environment, adapted educational programs, special teaching methods, etc.) and the internal (values, norms, rules of conduct, etc.) [11]. V.Z. Kantor, A.P. Antropov, Yu.L. Project [5] describe a model of the psychological readiness of scientific and pedagogical workers to implement inclusive education. As a methodological basis for teacher readiness, the authors define methodological competence and inclusive practice as a component of professional and pedagogical culture that affects the personal and professional competencies of a teacher. V.V. Khitryuk, [12] in the structure of readiness to perform inclusive pedagogical activity, identifies information-competence, empathic (emotional and moral), motivational (setup-behavior), operationally effective components. L. Florian, K. Black-Hawkins consider the problem of readiness for inclusion through the prism of helping teachers form inclusive competencies and master teaching strategies [16]. P. Ojok, S. Wormnæs conclude that it is necessary to increase the level of inclusive competence of specialists and fill in knowledge gaps [19]. Similar data has been obtained in other Russian and foreign studies [17; 10].

Based on the analyzed work and experience, inclusive culture is defined by us as an integrative indicator of the employees' readiness to provide guidance for people with disabilities, that involves understanding and accepting the place and role of inclusion in modern society, relevant knowledge, skills and abilities in this area, attitudes towards conveying positive trends towards people with disabilities, a tolerant and balanced attitude towards people with disabilities and their problems. In the structure of the inclusive culture of academic staff, two main elements should be identified as the core: the personal readiness for inclusion and inclusive competence. Personal readiness consists in the value and motivational development (the

recognition of the values and principles of inclusion, the conscious choice of norms of an inclusive society, the development of motivation for professional activity and the improvement of competencies in the field of inclusion, interests and needs) and affective (positive feelings, emotions, experiences associated with an interest in implementing inclusion, the desire to effectively resolve situations in conditions of inclusion and develop the ability for adaptive and positive behavior) components.

Inclusive competence includes cognitive (a mastery of general theoretical and applied knowledge about the essence of inclusion, its implementation options, the means to develop inclusion) and operation activity (management, communication, predictive, reflective, projective skills in inclusion, formed patterns of productive coping behavior, implemented in inclusion) components.

Thus, an inclusive culture determines the willingness of employees to provide support and guidance for people with disabilities and health limitations, includes the understanding and acceptance of the place and role of inclusion in modern society, knowledge, skills and abilities in this area, attitudes towards conveying positive trends towards people with disabilities and health restrictions, a tolerant and balanced attitude towards people with disabilities and their problems.

## **Materials and Methods**

The experimental study was implemented on the base of the Resource Educational and Methodological Center of the Northwestern Federal District for persons with disabilities of Cherepovets State University (ChSU) from 2017 to 2023. The pilot study involved 1,680 people who were trained at the REMC of the Northwestern Federal District of the ChSU. The representative sample is represented by 200 male and female respondents with different work experience from 28 universities of the Northwestern Federal District and interaction experience with people with disabilities. They are AMS (administrative and managerial staff) — 43 respondents, ATS (academic teaching staff) — 114 respon-

dents, ESS (educational support staff) — 43 respondents.

The research method consisted of conducting an online survey on two tests: “Personal readiness for inclusion” and “Assessment of inclusive competence”, contained on the research and information portal “Perspektiva-Pro”. The content of the survey tests was developed based on the adapted questionnaire by T. Booth, M. Ainscow [3] and taking into account previously obtained data on the readiness of higher school teachers for inclusive education [2]. The tests were conducted with the partner universities of the REMC ChSU and discussed in the professional community of the REMC. The questionnaires contain 10 questions each, which allow for the assessment of the component and level development of an inclusive culture as an integral indicator of the readiness of university specialists to support inclusive higher education. The description is given at five levels: optimal, advanced, intermediate, starter, beginner. A detailed description of the technique was published earlier [7]. The proposed questions are supplemented with data from the user’s questionnaire on the portal and allows to obtain extra information about the respondents (age, gender, occupation, qualifications, education).

During the course of the analysis, percentage calculations and statistical processing of the empirical study results using a one-way analysis of variance were applied. The cal-

culations were performed using the “StatSoft STATISTICA 10.0.1011” software.

### Study Results

According to the results of the assessment of the personal readiness for inclusion, we found that the majority of university employees who have been trained in advanced training courses have an optimal level of personal readiness (Table 1).

In general, the respondents accept the values of inclusion, recognize and accept the need to change themselves as individuals and professionals, and recognize the need for a broad discussion of inclusion issues. The rest of the university specialists showed an advanced level of personal readiness for inclusion. The respondents understand the importance of inclusion, but their attitudes towards it are not always clear and vary from situation to situation. They are ready to selectively interact in solving issues of increasing the availability of education and providing better educational spaces for students with disabilities. Intermediate, starter and beginner levels of personal readiness for inclusion are not noted. The average number of points scored by respondents for each question of the “Personal readiness for inclusion” questionnaire is shown in Table 2.

As can be seen from the table, the lowest results for all three groups of respondents were obtained in response to Question 8: “Do you think that you can influence an increase

Table 1

### The Level of Personal Readiness for Inclusion of University Staff

Levels of personal readiness for inclusion	University employee group					
	AMS		ATS		ESS	
	respondents	%	respondents	%	respondents	%
Optimal level	35	81	98	86	40	93
Advanced level	8	19	16	14	3	7
Intermediate level	-	-	-	-	-	-
Starter lever	-	-	-	-	-	-
Beginner level	-	-	-	-	-	-
Total	43	100	114	100	43	100



Table 2

**The Average Score of Responses to the “Personal Readiness for Inclusion” Test**

University employee group	The average score of responses to the test «Personal readiness for inclusion»*									
	1	2	3	4	5	6	7	8	9	10
AMS	4,6	4,7	4,4	4,8	4,4	4,3	4,7	<b>3,9</b>	4,6	<b>5,0</b>
ATS	<b>4,8</b>	4,7	4,5	4,6	4,5	4,3	4,7	<b>3,7</b>	4,7	4,6
ESS	4,7	4,7	4,5	<b>4,8</b>	4,7	4,5	<b>4,8</b>	<b>3,8</b>	4,7	4,6

\* maximum value is 5 points.

in the accessibility of the environment in your organization (institution, enterprise) for people with disabilities?” This question had the lowest average score. The maximum score from the administration representatives was obtained in response to the question “Do you think that inclusion is useful to society as a whole?”, from the teaching staff — “Do you think that people with disabilities have the right to study and work together with others in the same collective?”, from educational support staff — “Are you interested in gaining knowledge and mastering your skills in inclusion?” and “Do you think that education and work are a resource for the inclusion of people with disabilities into society?”.

A comparison of the samples using a one-way analysis of variance showed that the differences between ATS, AMS and ESS are not included in the region of significance (indicators  $F = 0.61$  and  $p = 0.54$ , respectively). In other words, despite the general similarity in the level of personal readiness for inclusion,

the qualitative composition of the readiness components does not significantly differ between administration representatives, university teachers and educational support staff.

The results of the “Assessment of inclusive competence” test are shown in Table 3.

As we can see, for the most part, advanced and intermediate levels prevail in approximately the same percentage among all respondents. About a third of university staff, regardless of their position, has comprehensive knowledge about special educational needs and special educational conditions for people with disabilities. In general, they are familiar with legislative acts on the education of persons with disabilities at different levels, have certain ideas about methodological resources, the features of using organizational forms, special and assistive technologies for persons with disabilities. However, information about the education of people with disabilities is quite generalized, although systematized. Another third of the employees are characterized by an insufficient

Table 3

**Inclusive Competence Level of University Staff**

Inclusive competence assessment	University employee group					
	AMS		ATS		ESS	
	respondents	%	respondents	%	respondents	%
Optimal level	2	5	18	16	7	16
Advanced level	14	32	42	37	15	35
Intermediate level	15	35	39	34	15	35
Starter lever	10	23	10	9	4	9
Beginner level	2	5	5	4	2	5
Total	43	100	114	100	43	100

knowledge of inclusive higher education, they are superficially familiar with legislative acts on the education of persons with disabilities and health limitations at different levels, have an incomplete understanding of methodological resources, the features of using organizational forms, special and assistive technologies for the education of persons with disabilities. In general, the list of professional competencies of these university staff is not a guarantee of their readiness to guide people with disabilities.

The average number of points scored by the respondents for each question of the “Personal readiness for inclusion” questionnaire is shown in Table 4.

As can be seen from the table, the differences in inclusive competence are least pronounced between ATS and ESS. Both categories of employees are quite familiar with the difficulties experienced by people with disabilities in the educational process and rate their level of assistive technology use for people with disabilities the lowest. Higher scores prevail among university administrations in answering the question about the knowledge of the rights of persons with disabilities, the understanding of their special needs, creating special conditions, and the mastery of assistive technologies. Administration representatives rate their competencies least of all in matters of career guidance and the employment of persons with disabilities, as well as the search for resources for the comprehensive education of people with disabilities. A comparison of the respondents’ samples using a one-way analysis of variance showed that the differences between ATS, AMS and ESS in terms of inclusive competence are within the region of significance (indicators

$F = 0.3.43$  and  $p = 0.03$ , respectively). Significant differences between AMS, ATS and ESS were revealed on Question 3 of the “Inclusive Competence” test: “Rate your level of awareness of the special needs of people with disabilities and health restrictions” ( $F=3.29$  at the significance level  $p=0.04$ ). Significant differences were also revealed between AMS, ATS and ESS on Question 8: “Rate your awareness level in organizing and finding resources for the education of people with disabilities” ( $F=3.66$  at the significance level  $p=0.03$ ). Thus, the inclusive competence of university staff has differences in its characteristics depending on the type of professional activity of university staff.

### Discussion and Conclusions

According to the obtained data and the implemented research, inclusive culture is a specific newly formed structure that includes the results of the professional and personal development of university employees and is expressed in the personal and competence readiness to support and promote inclusive higher education. In the structure of the inclusive culture of university staff, two main elements should be distinguished as the core: the personal readiness for inclusion and inclusive competence. Personal readiness consists of the value and motivational development (the recognition of the values and principles of inclusion, the conscious choice of norms of an inclusive society, the development of motivation for professional activity and the improvement of competencies in the field of inclusion, interests and needs) and affective (positive feelings, emotions, experiences associated with an interest in implementing inclusion, the

Table 4

#### The Average Score to the Questions of the “Inclusive Competence” Test

University employee group	The average value to the questions of the «Inclusive competence» test* *									
	1	2	3	4	5	6	7	8	9	10
AMS	3,1	2,8	3,1	3,3	2,9	3,1	2,6	2,6	2,6	3,1
ATS	3,4	3,2	3,5	3,6	3,3	3,4	2,9	3,1	2,8	2,8
ESS	3,5	3,1	3,3	3,6	3,3	3,5	3,0	3,2	2,9	2,8

\* maximum value is 5 points.

desire to effectively resolve situations in conditions of inclusion and develop the ability for adaptive and positive behavior) components.

Inclusive competence includes cognitive (a mastery of general theoretical and applied knowledge about the essence of inclusion, its implementation options, the means to develop inclusion) and operation activity (management, communication, predictive, reflective, projective skills in the field of inclusion, formed patterns of productive coping behavior, implemented in inclusion) components.

Inclusion training of university staff, carried out within the framework of the Resource Educational and Methodological Centers for the Education of Persons with Disabilities, created on the base of educational institutions of higher education, has a positive effect on the state of the inclusive culture of university staff. The highest results among trained employees were noted in the personal readiness for inclusion, which can be assessed as a resource for further progressive development of inclusion in universities. The vast majority of administration representatives, teachers and educational and support staff accept the values of inclusion, recognize the equal rights of persons with disabilities for education and work, are ready to change themselves, taking into account these norms and values. They have developed the motivation for professional activity and increasing competencies in inclusion, strive for the effective resolving of the problems of inclusive higher education.

At the same time, the state of inclusive competence has a lower level of development compared to personal readiness. It is characterized by differences in the component composition of administration representatives, academic teaching staff, educational and support staff of universities. Significant differences were revealed between AMS, ATS and ESS in the final score of the inclusive competence assessment of ( $F=3.43$  at the  $p=0.03$  significance level). In general, ATS and ESS are most in need of developing practical skills in using assistive technologies for people with disabilities, and administra-

tion representatives are in need of mastering cases and outside-of-the-box solutions in career guidance and the employment of people with disabilities, as well as finding resources for inclusive higher education. Despite the general similarity of the level characteristics of the inclusive culture of university staff, the qualitative composition of the components of personal readiness for inclusion and inclusive competence differs depending on the type of professional activity. In general, the integral characteristic of an inclusive culture, which consists of a complex characteristic of the state of its structural elements, allows not only to determine the current level of employees' readiness to support and promote inclusive higher education, but also underlies the design of strategies and tactics in the field of inclusion. This should be taken into account not only when designing additional educational programs for specialists, but also when building a strategy for the development of universities in the field of inclusion. The data obtained proves the need for the systematic inclusion training of university staff, actualizes the requirements for the variable training of specialists in inclusive higher education, taking into account available resources and deficits. The "problem issues" highlighted in the research process make it possible to identify the central vector of the work on designing the content of targeted professional development or professional retraining programs to prepare specialists at a university to work in an inclusive education environment.

Thus, an inclusive culture is the result of professional and personal development. Its level differs depending on the type of professional activity and among administration representatives, academic staff (teaching staff), educational and support staff at the university. The development of an inclusive culture at the university has a positive effect on the personal readiness for inclusion. However, inclusive competence has a significant variability of characteristics and demonstrates the need for psychological support and methodological guidance for university staff in conditions of variable training.

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# Motivational and Cognitive Aspects of Formation of Teacher's Professional Readiness for Professional Activities in Inclusive Education

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The relevance of the study is the need to improve the quality of formation of teaching inclusive education. The purpose of the study was to identify an assessment of the motivational-cognitive aspect of the readiness of future teachers to work in inclusive environment comparing with their level of readiness. The materials of empirical research are obtained from a sample of 5th year students of “Pedagogical Education” at the Southern Federal University (N=104) and teachers in the city of Rostov-on-Don and the Rostov region (N=12739). The leading research method is analysis of the results of a survey of university students and schoolteachers. The results of the study showed that the average level of readiness for inclusive education prevails among respondents. The results of the study make it possible to say that the leading criterion for teachers' readiness is motivational and cognitive, with skillful knowledge of humanitarian and assistive technologies for working with persons with disabilities. The materials of the article are of practical value for the design of teacher training programs in higher and additional professional education.

**Keywords:** inclusive education; readiness of students and teachers; motivational-cognitive criterion; professional training.

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# Мотивационно-когнитивные аспекты формирования у будущих педагогов готовности к профессиональной деятельности в условиях инклюзивного образования

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Актуальность исследования обусловлена необходимостью повышения качества подготовки педагогических кадров к деятельности в условиях инклюзивного образования. Целью исследования являлось выявление оценки мотивационно-когнитивного аспекта готовности будущих педагогов к работе в условиях инклюзии в сравнении с уровнем готовности педагогов школ. Представлены материалы эмпирического исследования, полученные на выборке студентов 5 курса, обучающихся по направлению «Педагогическое образование» в Южном федеральном университете (N=104), и педагогов г. Ростова-на-Дону и Ростовской области (N=12739). Ведущим методом исследования является анализ результатов анкетирования студентов университета и педагогов школ. Результаты исследования показали, что у респондентов преобладает средний уровень готовности к инклюзивному образованию. Полученные результаты исследования дают возможность говорить о том, что ведущим критерием готовности педагогов к профессиональной деятельности в условиях инклюзивного образования является мотивационно-когнитивный при умелом владении гуманитарными и ассистивными технологиями работы с лицами с ограниченными возможностями здоровья. Материалы статьи представляют практическую ценность для проектирования программ подготовки педагогических кадров на уровне высшего и дополнительного профессионального образования.

**Ключевые слова:** инклюзивное образование; готовность студентов и педагогов; мотивационно-когнитивный критерий; профессиональная подготовка.

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## Introduction

The development of inclusive education naturally involves an increase in the requirements for teachers' activities and their functional responsibilities, changes in professionally significant and personal characteristics. In foreign and domestic scientific literature, great attention is paid to various models of improving the readiness level of future and working teachers to carry out their professional activities in inclusive education.

Modern scientists have conducted a number of studies in which the readiness of teaching staff to work in inclusion is considered through the formation of inclusive competency. The researchers reveal the essence of the step-by-step process of developing teachers' readiness to work in inclusive education based on the provisions of the competency building approach (I.V. Wozniak, O.S. Ryzhova, I.N. Khafizullina, V.V. Khitryuk), determine the features of training specialists for professional activity in an inclusive educational organization (L.V. Goryunova, L.A. Guterman, O.S. Kuzmina, V.V. Rubtsov, S.A. Cherkasova, Yu.V. Shumilovskaya), prove the influence of the teachers' readiness degree to work in inclusive education on the success of the education of children with disabilities and their socialization (S.V. Alyokhina, O.A. Denisova, O.L. Lekhanova). In this regard, the problem of the readiness of modern teaching staff to carry out professional activities in inclusive education is urgent.

T.A. Chelnokova, N.V. Klimko, N.A. Paranima, when investigating the formation of inclusive practices in Russian and foreign schools in the late twentieth century and identified a number of aspects of the problem of teachers' readiness: competency readiness, pedagogical reflection skills [10]. According to C. Forlin, D. Chambers, the role of the teacher is a critical determinant of the success or the lack of practice in inclusive education. The authors say that an infusion approach is being actively introduced in European education, describing changes in all areas of the curriculum for students with special educational needs [17]. Foreign researchers have developed a number of innovative models of teacher training in universities at the pre-inclusive stage of education: a practice-oriented model that includes practical experience in inclusive classes, a model

with course research inclusion on the problems of inclusive education, an introduction of the disciplines that allow one to be acquainted with the full range of methods and technologies of teaching people with special educational needs, work with the parents of children with disabilities as a component of practical training, etc.

E.H. Mattson, A.M. Hansen, in their works, provide evidence of mentoring effectiveness to increase teachers' readiness to work in inclusive education. The mentor's activity is based on the pedagogical supervision of teachers in the workplace. Educational organizations that have implemented the mentoring institute have implemented a more flexible transition towards inclusive learning [20]. J. Lancaster and A. Bain also believe that the training program for teachers should be based on mentoring future teachers during practical training (working with students from risk groups, students with special educational needs) [19]. The authors suggest that future teachers, during the development of the training program, use opportunities to interact with people with disabilities. The study showed that teachers should take inclusive education courses before joining inclusive educational organizations. Mastering the course program, as the scientists have proved, forms a positive attitude towards inclusion, reduces teachers' anxiety, changes their work perception of people with disabilities.

According to A. de Boer, S.J. Pijl, A. Minnaert, teachers are one of the significant components of effective inclusive education. The authors investigate the influence of teachers' attitude towards inclusion on successful interaction with people with impairments, which allowed them to identify factors that influence the formation of teachers' attitudes towards inclusion: additional education, practical experience of interaction [15]. J.-R. Kim notes that the development of the inclusive education system has had a significant impact on educational programs for training teachers, which are a "compilation" of standard and special education teacher training programs, so it is the combined type of programs that allows one to form willingness to implement inclusion in the educational sphere [18]. M.J. Zalizan also believes that, when developing training programs, teachers should rely on an interdisciplinary approach.

[22]. Research by Y. Diker, Ü. Tosun emphasizes the importance of scientific and methodological centers for teacher training to develop and use adapted materials in inclusive schools [16]. T. Brandon, J. Charlton studied the experience of Centers for Excellence in Teacher Training, which allow teachers to gain practical experience with people with impairments. The evaluation of the work of such centers noted an increase in teachers' readiness for inclusion due to the ability to carry out a constant exchange of experience with colleagues and receive scientific and pedagogical guidance from specialists [13]. K. Scorgie, in his works, paid attention to the potential of virtual training programs for inclusive teachers by means of the "Family Interaction Portfolio", which is an interactive case — a complex of real situations and problems faced by "real" parents. During the development of the portfolio, scientists recorded an increase in students' willingness to assist parents with the education of their children [21].

Studies by B. Cagrana, M. Schmidt have shown that the success of the development of inclusion in education is directly dependent on the positive attitude of teaching staff towards it. However, scientists have recorded that teachers demonstrate a different degree of acceptance of students depending on the characteristics of their nosological groups. The study also showed that another significant condition for teachers' readiness to implement inclusive education is their professional competence [14].

According to the results of our scientific research of analyses on the problem of teachers' readiness to work in inclusive education, we note that both the motivation to work with students with disabilities, and the academic and methodological readiness of teachers are important components of readiness. Consequently, the process of developing the readiness of teaching staff for professional activity in inclusive education should be implemented in a modern university mainly in the motivational and cognitive aspect. Accordingly, readiness is assessed according to two key criteria: motivational and value (the philosophical and ideological understanding of inclusive education, the assessment of the impact of values and trends in its development on the learning process of

children, the motivation to perform certain actions and achieve success in organizing the joint education of children, the desire to transform their own experience and use the potential of interaction with colleagues) and cognitive (a system of knowledge and ideas about the students' characteristics of various nosology, the main approaches to the management of the educational process in inclusive education, specific technologies, methods, forms and means of teaching children with special needs and impairments).

### Sample Features, Study Means and Stages

The empirical study was conducted on the base of the Southern Federal University (SFU). To assess the motivational and cognitive aspect of students' and teachers' readiness for professional activity in inclusive education, we conducted a questionnaire survey. The study involved: 104 undergraduate extramural students, obtaining a degree in "Pedagogical Education" (20 students of the Academy of Biology and Biotechnology named after D.I. Ivanovsky, 20 students of the Institute of Mathematics, Mechanics and Computer Science named after I.I. Vorovich, 20 students of the Institute of Philology, Journalism and Intercultural Communication, 44 students of the Academy of Psychology and Pedagogy); 12,739 teachers of Rostov-on-Don and the Rostov region took part in the survey.

The purpose of the study is to evaluate the motivational and cognitive aspects of developing future teachers' readiness for professional activity in inclusive education.

At the first stage of the study, empirical data were collected.

As a diagnostic test instrument, a questionnaire was used, developed by specialists of the Resource Educational and Methodological Center for the training of disabled people and persons with disabilities of the Southern Federal University, adapted for the purposes of the study.

At the second stage of the study, the data obtained was processed and summarized.

The respondents were asked 24 questions, the content of the questionnaire reflected the motivational and value and cognitive criteria of readiness at five levels.

## Analysis and Discussion of the Study Results

The statistical processing of the results revealed a number of significant differences in the respondents' readiness to work in inclusive education. The calculation of the Fisher criterion revealed that the number of students (91.1%) who are familiar with or have an idea about inclusive education is statistically higher ( $\varphi=4,060$ ,  $p=0.01$ ), compared with teachers (80.1%). At the same time, it should be noted that 53.8% of teachers and only 17.8% of part-time students have completed advanced training courses, in which respondents are acquainted with the features of inclusive education. And 75.6% of students and 47.6% of teachers are interested in further professional development on this issue. Moreover, a statistically larger number of students (40.0%) than teachers (14.0%) are very interested in professional development, while 42.8% of teachers and only 22.2% of students agree to take such courses only if it is necessary. Consequently, it can be said that students are more focused on work with children with disabilities in inclusive education, while teachers do not consider professionally important the knowledge and skills that provide them with this work necessary until an inclusive class is formed in an educational institution, which is confirmed by the results of statistical data processing ( $\varphi=4,986$ ,  $p=0.01$  and  $\varphi=5,464$ ,  $p=0.01$ , respectively).

When studying the features of students' and teachers' ideas about the learning difficulties of disabled people of different nosological groups, statistically significant differences were also revealed. Thus, among teachers, the majority (52.6%) believe that visual impairment makes it the most difficult to receive general education, while a large portion of students (31.1%), in comparison with teachers, believe that hearing impairment causes great difficulties ( $\varphi=2,291$ ,  $p=0.01$  and  $\varphi=1,682$ ,  $p=0.05$ , respectively).

It is likely that the lack of advanced training in the field of inclusive education among teachers and students affected their opinions on the learning process of children with disabilities. Thus, only 6.7% of students and 7.9% of teachers supported the education of children with disabilities in secondary schools. 22.0% of students and 18.3% of teachers would rather support this form of edu-

cation. 13.3% of students and 19.8% of teachers offer home schooling for children with disabilities, and 37.8% of students and 23.3% of teachers offer to study at a special school. Consequently, an overwhelming number of both students and teachers believe that children with disabilities should be segregated, isolated, and that it is better for them to study in special educational institutions, but statistically more teachers orient children with disabilities towards home schooling ( $\varphi=2,037$ ,  $p=0.05$ ), and students towards study in specialized educational institutions ( $\varphi=3,144$ ,  $p=0.01$ ).

The confidence of most teachers and students to teach children with disabilities in inclusive conditions contradicts their opinion about the change in the effectiveness and quality of the educational process, in case a child with a disability appears in the classroom. Statistically, a larger number of teachers (43.5%) assume that a student with disabilities will not affect the educational process in any way, but the vast majority of students insist on the negative influence of such students ( $\varphi=3,332$ ,  $p=0.01$  and  $\varphi=3,512$ ,  $p=0.05$ , respectively). At the same time, about a fifth of both teachers and students (23.5% and 20.0%, respectively) note the possibility of a positive impact of a child with on learning quality.

The opinions of students and teachers practically coincide about working in a classroom where there is a child with disabilities. 31.0% of teachers (35.6% of students) believe that it is mentally challenging; 55.5% of teachers (53.3% of students) believe that it is difficult, but not so much that it becomes an insurmountable obstacle; 13.3% of teachers (11.0% of students) believe that there are no difficulties, which is confirmed by the results of statistical data processing.

The opinions of the respondents of both groups are identical on the question of whether there will be serious methodological difficulties in teaching children with disabilities: 29.0% of teachers and 31.1% of students agree with the statement; according to 60.7% of teachers and 62.2% of students there are difficulties, but they are quite surmountable. 10.2% of teachers and 6.7% of students believe there will be no noticeable difficulties. However, mathematical data processing shows that statistically more teachers, in comparison with students, believe that there are

absolutely no difficulties ( $\varphi=2,859$ ,  $p=0.01$ ), and if they arise, they are quite large ( $\varphi=1,791$ ,  $p=0.05$ ), while statistically, a larger number of students, in comparison with teachers, indicate that if any difficulties arise in the learning process with children with disabilities, then it is quite easy to overcome them ( $\varphi=1,741$ ,  $p=0.05$ ).

Data processing resulted in the following: it was revealed that among students (6.7%), a statistically larger number of respondents are confident that they are very familiar with the facilities to teach people with disabilities, compared with teachers (3.2%) ( $\varphi=2.383$ ,  $p=0.01$ ), while a larger number of teachers (44.9%), in comparison with students (35.6%), believe that they are familiar with the tools and technologies only in general terms ( $\varphi=2,828$ ,  $p=0.01$ ).

We observe the same confidence in knowledge among students in the issue of assistive technologies. Statistically, the number of students familiar with the Braille system is higher — 1.7% of teachers and 4.4% of students, and familiar with this system in general — 10.3% of teachers and 20.0% of students ( $\varphi=2,257$ ,  $p=0.05$  and  $\varphi=2,485$ ,  $p=0.01$ , respectively). At the same time, a greater number of teachers (41.6%), compared with students (31.1%), have heard about the Braille system, but are not familiar with it ( $\varphi=3.085$ ,  $p=0.01$ ).

A similar pattern was revealed in the question of knowledge about dactylogy. Only 2.4% of teachers are familiar with sign language compared to 8.9% of students ( $\varphi=3.542$ ,  $p=0.01$ ). The number of students familiar with this system in general is also statistically greater than teachers — 17.8% and 11.7%, respectively ( $\varphi=1.785$ ,  $p=0.05$ ). Among teachers, there are more who have either heard but are not familiar with sign language (41.6% of teachers and 31.1% of students, respectively), or do not know about it at all (19.6% of teachers and 11.1% of students, respectively), which is confirmed by the results of statistical data processing ( $\varphi=2.971$ ,  $p=0.01$  and  $\varphi=1.831$ ,  $p=0.05$ , respectively).

Only 7.7% of teachers (13.3% of students) have clear ideas about the specifics of teaching children with various nosology; in general, 77% of teachers (73% of students); 15% of teachers (13.3% of students) do not have any at all. Sta-

tistically significant differences were found only in the number of students and teachers who are well aware of the teaching specifics of children with musculoskeletal disorders ( $\varphi=1.831$ ,  $p=0.05$ ). Therefore, we note that among both teachers and students, most respondents are not familiar with the various types of the lesions, with typical disorders related to various types of lesions.

To the question on what conditions they are ready to work with, the respondents answered: on regular terms, 13.2% of teachers (22% of students); 13.8% of teachers (6.7% of students) agreed on extra payment; 34% of teachers (55.6%) agreed on extra pay and tutor support, under no circumstances — 7.5% of teachers (4.4% of students). 31.4% of teachers (11% of students) found this question difficult to answer. Statistical data processing revealed that a larger number of students, in comparison with teachers, are ready to work with children with disabilities under regular conditions or with a tutor and extra payment ( $\varphi=2.049$ ,  $p=0.05$  and  $\varphi=3.069$ ,  $p=0.01$ , respectively). A larger number of teachers, in comparison with students, agree to work with children with disabilities only for extra pay or could not give an unambiguous answer to this question ( $\varphi=2,152$ ,  $p=0.05$  and  $\varphi=4,651$ ,  $p=0.01$ , respectively).

Despite the fact that a small part of teachers, in their opinion, know about the specifics of inclusive education, and about the features of children with disabilities and their education, they are able to develop an adapted educational program for different categories of children with disabilities — 10.1%, and for one category — 41.4%. Among students, these indicators are lower and the amount is 6.7% and 26.7%, respectively. The vast majority of students do not know how to develop adaptive educational programs — 57.7%. However, the statistical analysis revealed significant differences in only two categories: they are able to develop an adaptive educational program for one category of persons ( $\varphi=3,380$ ,  $p=0.01$ ) and are not able to ( $\varphi=3,160$ ,  $p=0.01$ ). Consequently, the number of teachers who will be able to develop an educational program for one category of disabled children is statistically higher than among the vast majority of students, who do not know how to perform this type of work.

At the same time, 8.9% of students and 7.3% of teachers believe that they are able to develop adapted teaching materials for different categories. Another 28.9% of students and 37.4% of teachers indicate their skills in the development of teaching materials for one category of persons with disabilities. And they indicated that 48.9% of students and 40.3% of teachers do not know how to do it. However, statistical analysis revealed significant differences only in the number of students and teachers who indicated that they were able to develop adapted teaching materials for one category of disabled children ( $\varphi=2.078$ ,  $p=0.05$ ).

53.3% of students (21.8% of teachers) are well acquainted with the assessment requirements of people with disabilities; in general, 22.3% of students (59.1% of teachers); 24.5% of students (19.1% of teachers) are not familiar. However, statistical analysis shows that approximately the same number of students and teachers are familiar with the assessment requirements for children with disabilities, while a statistically larger number of students do not know these requirements ( $\varphi=5.939$ ,  $p=0.01$ ), and a statistically larger number of teachers are familiar with the requirements only in general terms ( $\varphi=7.875$ ,  $p=0.01$ ).

Despite the active awareness-raising work on the essence of inclusive education, 40.0% of students and only 12.9% of teachers do not feel concern about the deterioration of educational results in unimpaired children in an inclusive class. 37.8% of students and 28.3% of teachers and 22.2% of students and 58.9% of teachers have a significant concern about the results of their children's education in an inclusive classroom. Thus, the statistical majority of teachers have little concern about the deterioration of educational results of unimpaired children in an inclusive classroom ( $\varphi=5.448$ ,  $p=0.01$ ), and students are significantly more likely to either be more anxious about the results of unimpaired children ( $\varphi=2.530$ ,  $p=0.01$ ), or do not worry at all ( $\varphi=3.432$ ,  $p=0.01$ ).

The overwhelming majority of both students (68.9%) and teachers (51.95%) agree that the strategy and tactics of conducting the academic discipline will change significantly if there are children with disabilities in the classroom. However, a larger number of students (20.0%), in compari-

son with teachers (3.7%), are confident that nothing will change ( $\varphi=6.221$ ,  $p=0.01$ ), while among teachers there are more respondents (44.3%), in comparison with students (11.1%), who believe that the method of teaching academic disciplines will undergo minor changes ( $\varphi=7.721$ ,  $p=0.01$ ).

Thus, summarizing the results of statistical analysis using the Fisher criterion, it was proved that, statistically, more teachers of secondary schools, in comparison with students, in their opinion, are not familiar with inclusive education and are not interested in professional development, unless the situation requires it. Teachers are more familiar than students with the nosological groups of disabled people and their typical disorder characteristics, believing that a child with disabilities in the classroom will not affect the effectiveness of the educational process in any way, and, in some cases, may even increase it. But at the same time, they are sure that inclusive education, in general, and the teaching of people with disabilities, in particular, causes some methodological difficulties.

According to the statistical analysis of the obtained data, a greater number of teachers believe that they are not familiar with the technical means of teaching children with disabilities, with the Braille system and sign language, but they are able to develop both adaptive educational programs and adaptive teaching materials. At the same time, according to teachers, the strategy and tactics of teaching academic disciplines, as well as the quality of teaching unimpaired children, in the process of inclusive education will remain unchanged. It was proved that statistically more teachers of secondary schools are ready to work with children with disabilities, in comparison with students, if tutor guidance and extra pay are provided.

## Conclusion

The study of the problem of inclusive education development is of particular importance and it is determined by the need to develop teachers' readiness to carry out their activities. Taking into account the motivational and cognitive component of readiness building has a practical dependence, which is associated with the development of teacher training programs.

The data of the conducted research can form the basis for the development of training programs for future teachers, refresher courses and advanced professional training of working teaching staff in two directions: increasing motivation to work with students with special needs and disabilities; increasing academic and methodological readiness. Teacher training and additional vocational educational programs should undergo a number of changes in their content and the management component. The described empirical data indicates the difficulties of designing training programs for inclusive education, which is due to the diversity of the subject space of the teacher's professional activity, as well as the need to master a wide range of subject training in relation to various categories of children.

The analysis of the survey results showed that students and teachers have approximately

the same levels of readiness for professional activity in inclusive education: 7% of students and 6% of teachers demonstrated a high level; 22% of students and 20% of teachers showed an above average level; 34% of students and 40% of teachers showed an average level; 30% of students and 25% of teachers had a low level; 7% of students and 9% of teachers had a very low level. Consequently, students and working teachers mainly have an average level of readiness for professional activity in inclusive education in the motivational and cognitive aspect. These results are related to the fact that respondents, while demonstrating interest in the problems of teaching children in inclusive educational institutions, have a low willingness to work independently in these conditions. Thus, the results of the experiment indicate the need to reconsider training programs especially for future teachers at the academic and practical levels.

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# Experimental Work on Competence Building of a University Teacher in Inclusive Education by Means of Digital Technology

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The article presents the results of experimental work on the formation of the competence of university teachers in inclusive education by means of information technology in additional professional education. Information technology is implemented on the basis of the unity of two components: information and technology. The didactic digital complex acts as an information component, the technological component provides the personification of the educational process, the use of a set of forms and methods of training for intensifying the process of additional professional education using information and communication technologies, creating conditions for the formation of pedagogical communities for the exchange of experience and interactive solving of the professional tasks. 353 teachers from 6 educational universities were recruited for this study. The effectiveness of the study was confirmed by the method of mathematical statistics (Pearson's criterion).

**Keywords:** competence of a university teacher in inclusive education; additional professional education; information technology support; didactic digital complex.

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# Экспериментальная работа по формированию компетентности преподавателя вуза в инклюзивном образовании средствами информационно- технологического обеспечения

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В статье представлены результаты экспериментальной работы по формированию компетентности преподавателей вуза в инклюзивном образовании средствами информационно-технологического обеспечения в системе дополнительного профессионального образования. Информационно-технологическое обеспечение реализуется на основе единства двух составляющих: информационной и технологической. В качестве информационной составляющей выступает дидактический электронный комплекс, технологическая составляющая предусматривает персонализацию образовательного процесса, применение совокупности форм и методов обучения, ориентированных на интенсификацию процесса дополнительного профессионального образования средствами информационно-коммуникационных технологий, создание условий для формирования сетевых педагогических сообществ для обмена опытом и решения профессиональных задач в процессе коммуникации и взаимодействия. В исследовании приняли участие 353 преподавателя из 6 образовательных организаций высшего образования. Эффективность исследования подтверждена методом математической статистики (критерий  $\chi^2$  — критерий Пирсона).

**Ключевые слова:** компетентность преподавателя вуза в инклюзивном образовании; дополнительное профессиональное образование; информационно-технологическое обеспечение; дидактический электронный комплекс.

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## Introduction

The current development stage of Russian society is characterized by the rise of an inclusive approach in higher education. The challenges of modern society determine the need for academic staff training to implement professional activity in inclusive education. In this regard, the development of managerial technologies in additional professional education, aimed at the competence building of academic staff in inclusive education, is of particular importance.

Currently, the modern trend in education is the mobilization of information and communication technology (ICT) resources, aimed at the development of educational distance learning technologies. An important role in education is played by massive open online courses, interactive services, Wiki technologies, Web 2.0 social services, electronic teaching and learning materials, electronic didactic complexes, information and communication environments, etc. [3; 7]

ICT, when mobilizing teaching creativity, contribute to the development and implementation of academic innovations aimed at intensifying the educational process at various levels, including the system of additional professional education.

The analysis of the authors' works (N.Yu. Sorokina, T.G. Lukovenko, O.Yu. Muller, O.A. Denisova, O.L. Lekhanova and others.) allows us to state that, despite various theoretical and practical models and aspects of inclusive teacher training, the competence building issues in additional education by means of ICT are considered insufficiently [2; 4; 8; 9].

The analysis of various models and practices of using ICT in the educational process allowed us to deduce the potential and feasibility of using the theory of information technology support in the educational process (ITS), presented in the works of A.V. Nikitina, A.S. Rodionov, etc., according to which ITS is considered as "a didactic system that represents an integral unity of functionally and

structurally related information and technological components" [5; 6].

The didactic electronic complex (DEC) is considered as an information component of additional professional education, and the technological element is implemented through the information technology of training.

DEC is considered as "a didactic interactive system created on the basis of information technology tools, represented by a structured set of information and content elements that provide and sustain the educational process in the context of full and necessary information. Information technology training is a didactic process carried out using a set of information technology software, ensuring optimal educational content perception and assimilation, as well as the interaction between the subjects of the educational process in order to achieve academic results" [1].

### *Hypothesis and Research Objective.*

We assumed that the educational process in additional professional education aimed at training university teachers for the implementation of inclusive education would be more effective if ITS were used.

The research objective was to evaluate the effectiveness of competence building in university teachers in inclusive education by means of ITS in additional professional education.

## Methods

### *Competence Assessment of the Academic Staff in Inclusive Education*

To assess the competence of a university educator working in inclusive education, the following assessment tools were used: a questionnaire developed by us "Competency Self-Assessment for Academic Staff in Inclusive Education", tests, project tasks; the "Professional activity incentive" method (K. Zamfir's method modified by A.A. Rean). The questionnaire is presented by four ten-point scales, including statements on inclusive education issues, which allow us to assess the level of competence components identified by us (val-

ue and motivational, cognitive, activity, reflexive). The competence of academic staff in inclusive education was assessed at four levels: critical, beginner, intermediate, advanced. To establish statistically significant differences in the results obtained in the experimental group compared with the control group, the  $\chi^2$  criterion was used — the Pearson criterion.

### *The Procedure for Competence Building of University Teachers in Inclusive Education*

The competence building of university teachers in inclusive education was carried out with the use of DEC.

DEC, which is an integral part of ITS, is an information and communication environment, implemented on the basis of software product integration, social services Web 2.0 and the Moodle virtual learning environment. The developed didactic complex comprises entry and final diagnostics on competence level of a university educator in inclusive education, as well as its components.

Based on the results of the entry diagnostics, depending on the degree of the university teachers' competence components in inclusive education, students' individual academic paths were generated in DEC. The personalization of the educational process was carried out through the introduction of software solutions and the developed implementation plan (Fig. 1).

The convenience of generating an individual academic path was ensured by differentiating educational content into micro units (subtopics) within modules/topics that are interrelated with the specific criteria and competence indicators of a university teacher in inclusive education, as well as the theory presentation of the basic and advanced level, supplementary resources on the topics, practice activities, the testing and assessment resources of basic and advanced levels.

DEC, along with the traditional formats of content presentation, is represented with various educational resources (online databases

of regulatory documents in inclusive education, documentaries about the achievements of people with disabilities, video guides on the use of special technical devices, mind maps, collections of teachers' works, Internet resources on inclusive education, a replenishable bank of cases, document templates, webinars on inclusive education implementation, etc.).

The learning technology is represented by a set of active forms and methods (discussion, brainstorming, debate, the case method, the project method, the peer assessment method, the problem presentation method, the swot-analysis method). Practice was organized on the use of modern web-tools that provide students with group and team communication, network project activities.

To gain high-quality empirical content, provide practice-oriented content, share experiences among students in the educational process, DEC provides the opportunity to replenish a bank of students' works by accumulating practice on cloud platforms and including cross-references to the collection of students' works in the structure of DEC.

In order to take into account the experience and specifics of the trainees' professional activities, their professional experience in inclusive education, the formation of micro groups was carried out according to the following parameters: the amount and level of knowledge formed, skills, abilities, region, university, professional activity.

### *Sampling*

The study involved 353 teachers of 6 educational institutions of higher education. Sample 1 (experimental group) included 187 teachers, the second sample (control group) included 166 teachers. At the ascertaining stage, the samples were balanced and did not differ significantly in the pre-experimental level of teachers' competence in inclusive education ( $\chi^2_{emp.}=1.3 < \chi^2_{cr.}=7.8$  with a significance level of  $p=0.05$  and degrees of freedom equal to 3).

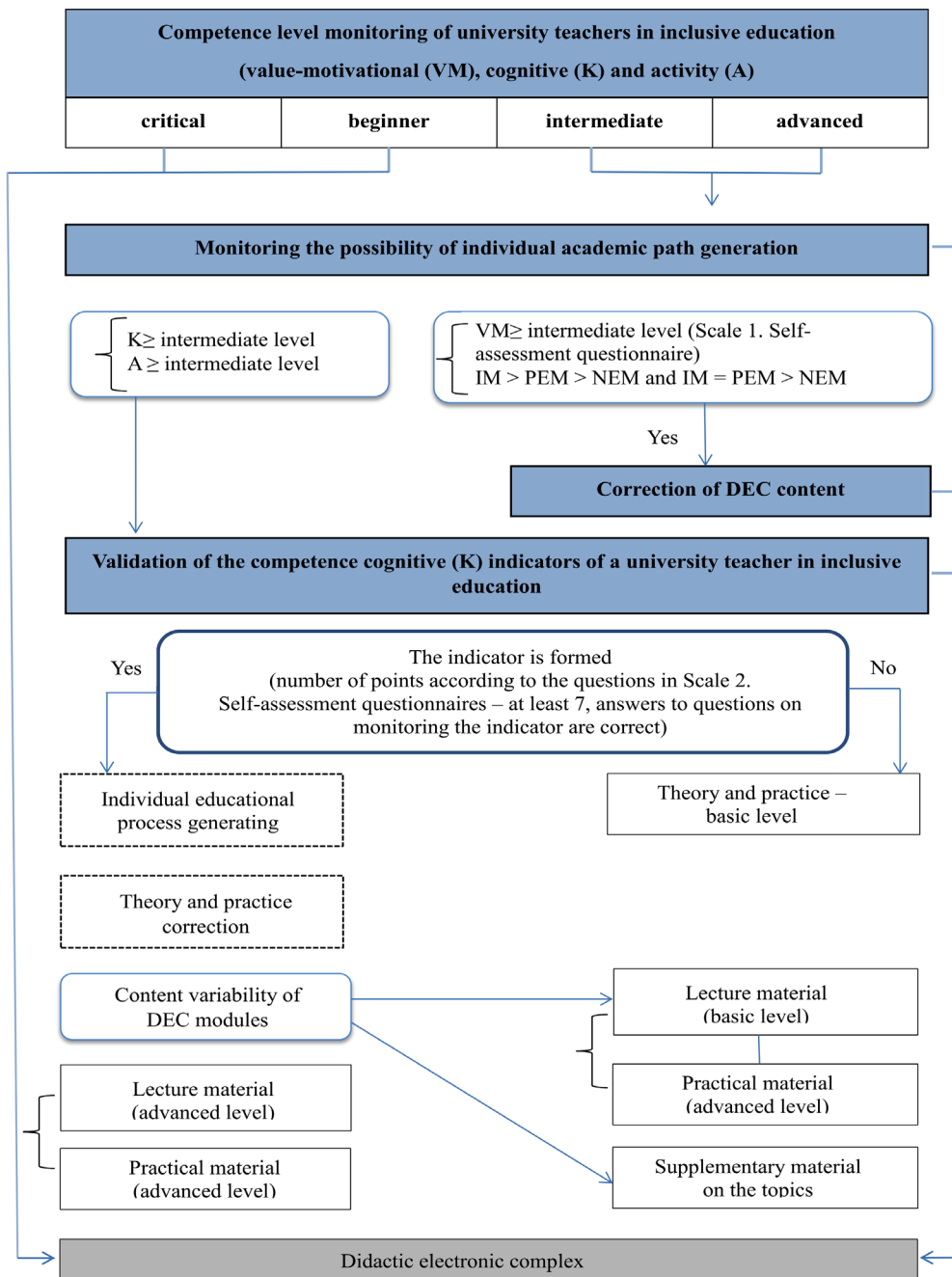


Fig. 1. Implementation plan of the individual academic path generating in DEC

### Experimental Work

Experimental work was carried out in 2020—2021. At the ascertaining stage of the experiment, the selection of subjects was carried out. At the formative stage, the teachers of the experimental group were trained according to the developed additional professional educational program of advanced training implemented with the use of DEC. The teachers in the control group were trained in traditional academic learning conditions using distance learning technologies (an online course containing a single-level lecture and practice material that does not involve an individual academic path, providing mainly the independent work of students). The labor intensity of the professional development programs for the experimental and control groups was 72 hours. The number of classes in the experimental group: 24 hours of lectures, 42 hours of cooperative practical work in the DEC, 6 hours of final assessment, in the control group: 24 hours of lectures, 16 hours of practical work, 28 hours of independent work, 4 hours of final assessment. The duration of the training program was 3 weeks. At the control stage of the experiment, the results of the experimental work were analyzed, statistically significant differences in the results obtained

in the experimental group compared with the control group were checked according to the Pearson criterion.

### Results and their Discussion

According to the training results of the experimental and control groups, changes in the level of development of teachers' competence in inclusive education were diagnosed. A comparison of empirical data presented as a percentage of the number of teachers with critical, beginner, intermediate and advanced levels of competence components in inclusive education in the experimental and control groups at the entry and final diagnostics of the relative total number of teachers in groups is presented in Figures 2—5.

According to the dynamics of the value and motivational component, the following results were obtained: as the training result, the number of teachers in the experimental group at the intermediate and advanced levels of value and motivational component increased by 28.9% and 23%, in the control group — by 9% and 5.4 %, respectively. The number of teachers at the critical and beginner levels in the control group decreased by 10.8% and 3.7%. In the experimental group, the decrease occurred by 24.1% and 27.8%, respectively (Fig. 2).

**Value-motivational component, EG, KG (%)**

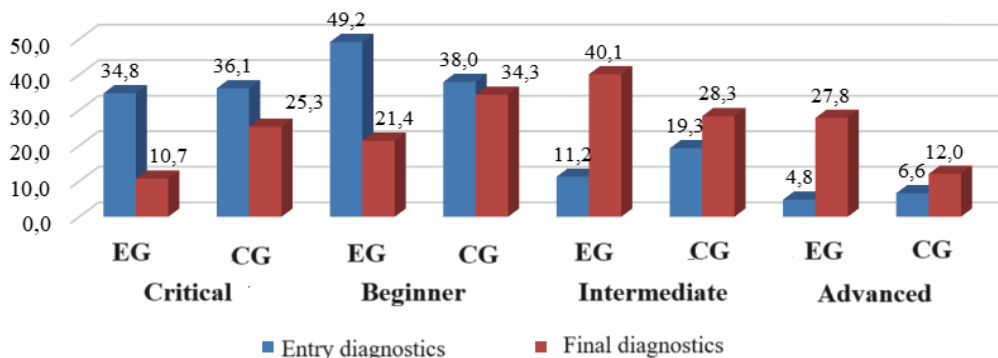


Fig. 2. Value and motivational dynamics

According to the cognitive component dynamics, the following results were obtained: the number of teachers in the experimental group at the intermediate level increased by 27.9% and 43.9% at the final diagnostics, the number of teachers at the advanced level increases by 24.6% and 29.9%. In the control group, the increase at the intermediate and advanced levels is 18.6% and 11.5%, respectively (Fig. 3).

According to the activity component dynamics, significant changes were obtained:

the number of teachers in the experimental group at the intermediate and advanced levels increased to 43.8% (> 3.3 times) and 29.4% (> 7.9 times), respectively, compared to the starting data. In the control group, the number of teachers at the intermediate and advanced levels was 32.5% (> 2 times) and 14.5% (> 3 times), respectively (Fig. 4).

According to the reflexive component, the number of teachers in the experimental group

### Cognitive component dynamics, EG, CG (%)

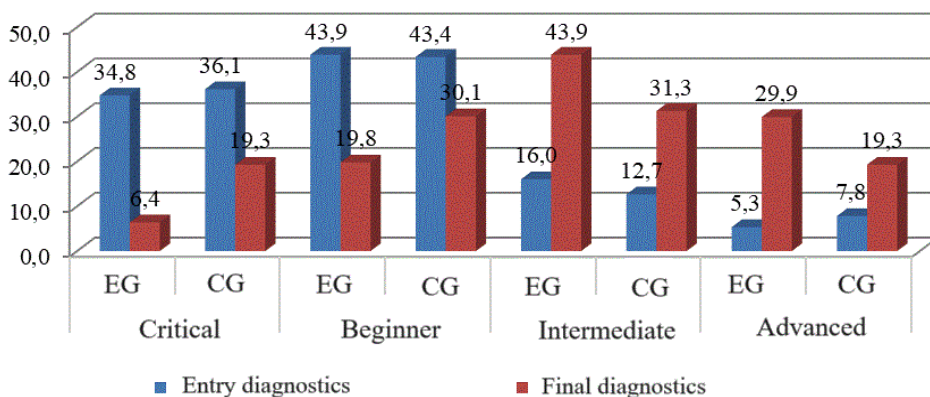


Fig. 3. Cognitive component dynamics

### Activity component, EG, CG (%)

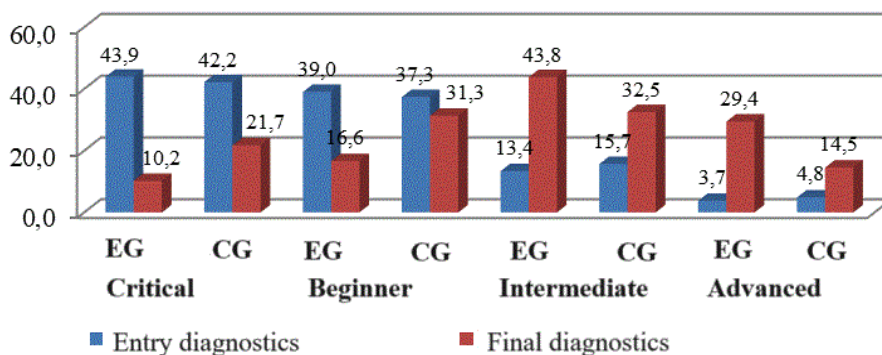


Fig. 4. Activity component dynamics

at the critical level decreased by 29.4%, at the beginner level — by 28.8%, at the intermediate level increased by 28.4%, at the advanced level — by 29.9%. In the control group, the number of teachers at the critical level decreased by 13.9%, at the beginner level — by 13.3%, at the intermediate level increased by 15.7%, at the advanced level — by 11.5% (Fig. 5).

At the ascertaining stage of the experiment, the primary empirical data allow us to state the dominance of the critical and beginner levels of university teachers' competence in inclusive education in both the experimental and control groups. According to the results of the formative experiment, positive dynamics are observed in both groups. However, the experimental group is dominated by the number of teachers at the intermediate and advanced levels in all competence components in inclusive education, in the control group — at the intermediate and beginner levels.

To establish statistically significant differences in the obtained results in the experimental group compared to the control group,  $\chi^2$  — Pearson's criterion was used. While monitoring the differences in the experimen-

tal and control groups, the following empirical values were obtained: for the value and communication component —  $\chi^2_{emp.}=30,3$ ; for the cognitive component —  $\chi^2_{emp.}=23,1$ ; for the activity component —  $\chi^2_{emp.}=27,3$ ; for the reflexive component —  $\chi^2_{emp.}=33,2$ ; The obtained empirical values  $\chi^2_{emp.}$  are significantly higher than the critical value  $\chi^2_{cr.} = 7.8$ . at a significance level of  $p = 0.05$  and the degrees of freedom equal to 3, which indicates a more significant increase in university teachers' competence in inclusive education in the experimental group than in the control group.

### Conclusions

The results of the experimental work allow us to conclude that the use of ITS in additional professional education aimed at academic staff's competence building in inclusive education in the experimental group contributes to progress in the acquiring of knowledge, the consolidation and application in professional and academic activity in inclusive education for each component and it confirms the hypothesis.

The use of the theory of the didactic unity of the content (DEC) and the procedural side

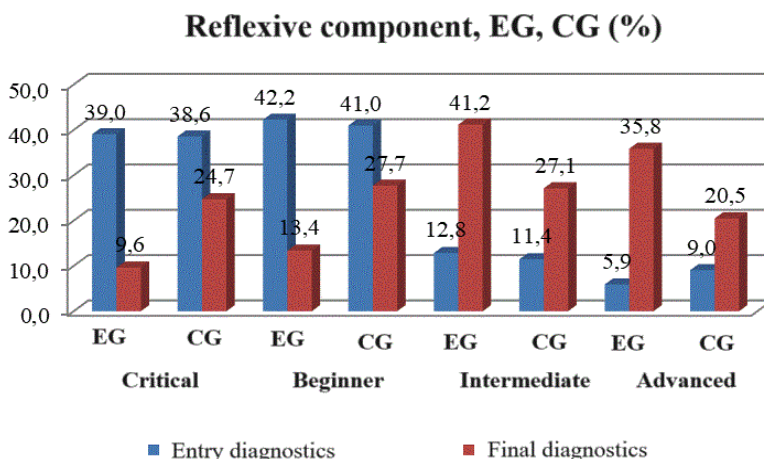


Fig. 5. Reflexive component dynamics



(information technology) in additional professional education allows to achieve the effect of rapid inclusion of the participants in educational and cognitive activity by providing access to necessary information resources in the context of full and adequate provision of information, preparation of didactic materi-

als, educational process personification taking into account the needs and experience of the professional activity of students, the development of academic network communities for exchanging experience and solving professional tasks during communication and interaction.

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# Scientific and Methodological Basis for Fofmation of Teachers Working with Students with Disabilities Acquired during Special Military Operations

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The article analyzes modern approaches to adult education in the context of preparing teachers to interact with students with disabilities acquired during combat and special military operations. Existing research and teaching methods for people with disabilities do not take into account the specifics of this population. We described the socio-psychological characteristics of persons with disabilities, affecting the possibilities of adaptation and retraining. We formulated the main areas of necessary changes in educational practice: the formation of motivation for retraining, the creation of a friendly educational environment, the adaptation of the educational process to psychological characteristics of the students and their special educational needs. Emphasis is placed on the methodological aspects of organizing the interaction of teachers and students in the process of professional preparation: the use of pedagogical screening, digital technologies, the gamification method, and the universal design of educational and methodological materials.

**Keywords:** adult education; additional vocational education; professional retraining; digital technologies; gamification; universal design.

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## Научно-методические основы подготовки преподавателей к взаимодействию с обучающимися с инвалидностью, приобретенной в процессе боевых действий и специальных военных операций

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В статье проанализированы современные подходы к обучению взрослых в контексте подготовки преподавателей к взаимодействию с обучающимися с инвалидностью, приобретенной в процессе боевых действий и специальных военных операций. Выявлено, что существующие исследования и методики обучения лиц с инвалидностью не учитывают специфики данного контингента. Описаны социально-психологические особенности лиц с инвалидностью данной категории, влияющие на возможности адаптации и переобучения. Сформулированы основные области необходимых изменений в образовательной практике: формирование мотивации к переобучению, создание дружелюбной образовательной среды, адаптация образовательного процесса к психологическим особенностям и особым образовательным потребностям. Сделаны акценты на методических аспектах организации взаимодействия преподавателей и обучающихся в процессе профессионального

переобучения: использование педагогического скрининга, цифровых технологий, метода геймификации, универсального дизайна учебно-методических материалов.

**Ключевые слова:** обучение взрослых; дополнительное профессиональное образование; профессиональное переобучение; цифровые технологии; геймификация; универсальный дизайн.

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## Introduction

Within the framework of the professional and psychological rehabilitation of people with disabilities acquired during the performance of official duty during combat and special military operations (hereinafter referred to as people (persons) with disabilities of this category), the key area is professional and pedagogical. Since most of them lose the opportunity to continue their professional activities as military personnel, there is a need to organize secondary career guidance and professional retraining.

The methodological basis of these processes is the approaches of domestic scientists towards the problems of adult education (L.N. Bengali, T.A. Vasilkov, M.T. Gromkov, S.I. Zmeev, A.I. Kanatova, I.A. Kolesnikova, A. O.A. Kondratyeva, E.S. Koroleva, A.I. Kukueva, V.I. Podobed, N.A. Toskin, V.K. Shapovalov, etc.), organizations of additional professional education (V.I. Bidenko, V.P. Bespalko, T.Yu. Lomakina, V.G. Bocharov, S.I. Grigoriev, B.Yu. Shapiro, etc.), professional retraining of former military personnel (L.V. Mardakhaev, I.A. Lipsky, S.L. Rykov, etc.), professional and labor adaptation of former military personnel (S.B. Volkov, L.G. Shatvoryan, L.A. Sapozhnikov, etc.).

However, the given range of scientific research is focused on training normative people

in peaceful life conditions. While the modern social situation associated with conducting the Special Military Operation in Ukraine gives rise to a fairly large social stratum of people with acquired disabilities who need to receive additional educational services adapted to their capabilities and special educational needs.

## Main Part

In the context of state and social policy, educational organizations of professional and higher education become an environment for restoring the lost social and professional functions of persons in this category, who are provided with benefits when entering and receiving education. Consequently, teachers must be prepared to organize accessible and effective additional professional education both at the level of selecting the forms, methods, means of the educational process, and the readiness for productive interaction.

Today, thanks to the activities of the network of Resource Educational and Methodological Centers for training people with disabilities (hereinafter referred to as REMC HE), a fairly large reserve of scientific approaches and inclusive practices in teaching persons with disabilities ) has been accumulated, with various educational needs in universities (G.G. Saitgalieva,

L.G. Vasina, V.K. Shapovalov, N.M. Borozinets, G.Yu. Kozlovskaya, etc.) [11; 13], including training teachers to implement an inclusive approach in education (L.A. Guterman, O.A. Denisova, T.F. Krasnopedtseva, N.A. Palieva, etc.) [7].

At the same time, the scientists did not set a special task of studying the essence and content of the professional education of persons with disabilities in this category. At the same time, they are characterized by psychological characteristics that must be taken into account in the educational process.

In domestic and foreign studies, in relation to their psychological state, the term "normal psychological disorders" is used, which include: fear, physical exhaustion, emotional exhaustion, hypervigilance, poor sleep, the "survival effect", anxiety, emotional indifference, etc. Along with this there are also "long-term" stresses: depression, isolation, sudden anger, indifference, alienation, a guilt complex for being alive, anxiety, frustration, hysterical states. For combatants, experiencing a severe stressful event of a threatening nature entails mental trauma, a symptom of which is the motive of avoiding help. Therefore, experts are faced with the fact that, when returning to civilian life, former military personnel do not seek help and often hide negative conditions (A.V. Korovnikov) [8].

According to V.S. Gziryan, people with disabilities in this category have great problems in communicating and understanding situations; they lack the opportunity to organize their lives. They distrust those people who are called upon to provide for their most pressing needs (for example, provide benefits, education, help with employment, etc.). Difficulties also arise in determining one's place in the field of professional activity, which are caused by the narrowness of knowledge about social life in general, the world of professions, available specializations, and opportunities for obtaining professional education [6].

Also, in the works of V.G. Levkina and O.A. Letskaya, it is shown that persons with disabilities in this category have restrictions on self-care, movement and work activity. As a result of disability, people lose part or all of their ability to perform normal activities. After returning to civil-

ian life, they, as a rule, do not have work experience, or sometimes the necessary education or qualification level. The stresses received during combat are superimposed with new ones associated with professional self-determination and employment [9].

However, in order to continue a normal life, persons with disabilities in this category need to obtain new or improve existing professional training. Consequently, thanks to professional retraining, a positive effect of their rehabilitation can be achieved.

However, not everyone has the motivation to receive professional retraining. Based on the analysis of the motivational resource of a serviceman's personality conducted by N.M. Borozinets, O.D. Salnikova, N.N. Kryzhevskaya, we can conclude that, in general, the motivation for learning, in the usual sense, among the majority of persons with disabilities in this category is insufficiently formed. At the same time, it is the external motivation for learning activities that is specifically highlighted. Individuals with a high level of motivation are characterized by the presence of internal motives, the ability to set goals, the desire to achieve significant academic, scientific and creative results, and a personal meaning of learning. Individuals with a low level of development of motivational resources were noted to have weakly expressed motives for learning in general [1].

In connection with these reasons, teachers, according to M.M. Tavakalova, should be focused on improving the quality of professional training and the motivation of the subjects of the educational process by adopting a value-based approach towards disability; the formation of mechanisms for destigmatization of the educational environment; on improving the methodology and technology of inclusive education, creating a favorable educational or "friendly" environment [12].

Existing studies of "friendly environments" do not take into account the experience of social trauma ("societal trauma") by persons with disabilities, which manifests itself in the experience of misunderstanding, non-acceptance, rejection and discrimination in society. However, despite the lack of relevant context in this area, it would

be legitimate to base our research on the works of V.E. Popova, V.D. Bulavtseva, E.V. Mitasova, V.I. Kutinova, P.P. Ivanova, M.M. Tavakalova, N.V. Ageeva, V.A. Petrosyan, E.S. Shcheglova and others.

A friendly environment, according to V.D. Bulavtsev, is one of the central factors in ensuring the successful interaction between teachers and students with disabilities, and is also the central starting point for eliminating possible barriers of various origins that arise during training and socialization [12].

And finally, teachers are faced with the task of adapting the educational process and presenting educational material to the psychological characteristics and special educational needs of persons with disabilities in this category.

First of all, it should be noted that in the educational process it is necessary to focus on the real capabilities and educational level of students. Therefore, before starting the implementation of an educational program, it is necessary to establish contact and identify the level of training, learning ability, motivation to acquire a new profession and awareness of the employment prospects in it. Such a screening will help to communicate with the student "in the same language," arouse an interest in learning, and stimulate the motivation to master a particular profession.

In the learning process, the main approaches will be individual, personality-oriented and practice-oriented. Each of them, independently or in integration with the others, will make learning meaningful and personally significant. For a teacher, a subject-object position will be ineffective and may cause protest from a student who has significant life experience. Therefore, it is important to take a partner position and provide consultation and support to students, similar to that of a tutor (V.N. Vinogradova, E.K. Isakova, A.A. Makarenka, N.N. Surtaeva, etc.) [10].

When choosing methods and technologies, the static presentation of information in oral language (lecture) or text formats should be avoided. Here, digital technologies come to the aid of the teacher (M.V. Vakulenkova, A.I. Shutenko, O.D. Garanina, etc.) [2].

The use of digital educational resources (electronic textbooks, infographics, online courses,

electronic testing) allows for you to make the educational process systematic, dynamic, attractive, and visual.

In the context of the use of digital technologies, emphasis should be placed on the use of the gamification method. Gamification tools in the practice of modern education are described in the works of M.V. Dvorkova, E.A. Kurenkova, M.A. Krotovskaya, M. Peterson and others; An analytical review of the practices of using gaming technologies in education is presented in the works of M.V. Ozerova, K.V. Pavlenko et al. [5].

A computer game or a game-modified task that has a direct or indirect educational goal is an effective tool for explicit or implicit learning.

The correctional and rehabilitation potential of computer games in the context of e-sports training and their role in the social adaptation of students with disabilities is revealed in the works of M.G. Vodolazskaya et al. [3].

When organizing the educational process, it is necessary to take into account that its subjects can be students with different levels of readiness for learning and ability to perceive educational information. Therefore, the key principle of designing the educational process is the principle of universal design. The applicability of the principle of universal design in the practice of inclusive education is substantiated by S.V. Alyokhina, E.V. Samsonova, A.Yu. Shem-anov and others.

According to scientists, universal design provides for variability, simplicity, ease, and different opportunities for communication and obtaining information. In the educational process, principles of universal design are relevant when developing educational materials, using them in training sessions, taking into account the level of complexity of tasks, taking into account the interests of students and the methods of motivating them (L.M. Volosnikova, I.V. Patrusheva) [4].

Universal design principles are especially important in digital education settings. Not only in the development of educational content accessible to people with different intact modalities of perception, but also in equipping the computer workplace with special technical learning aids and assistive technologies ensures versatility for users (N.M. Borozinets, O.D. Salnikova, etc.) [13].

## Conclusion

Thus, the scientific and methodological foundations for training teachers to interact with persons with disabilities of this category include not only modern approaches to teaching adults in the process of additional professional education, but also taking into account the socio-psychological characteristics of persons with disabilities of this category. It is

the understanding and acceptance of problems and deficits, the creation of conditions for comfortable interaction, the organization of training using modern educational technologies, and the reliance on the principles of universal design that contribute to the satisfaction of special educational needs, and, therefore, ensure the success of additional professional guidance and retraining.

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— PSYCHOLOGY OF EDUCATION | ПСИХОЛОГИЯ ОБРАЗОВАНИЯ —

# Research and Experience of Teaching the Subject “Chess” in the Educational System of the Republic of Armenia

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In this article, are considered the achievements and problems of the innovative educational project “Chess” implemented by Armenian State Pedagogical University named after Khachatur Abovyan in secondary schools. The purpose of the study: to identify the mechanisms of research and pedagogical interaction, as well as to analyze and summarize the results of many years of research of psychological and pedagogical support of the educational course “Chess in elementary school”. The main research methods were the analysis and synthesis of the conducted studies, as well as the generalization of previously done empirical studies. Various empirical methods and methodological developments were applied: sociological survey, structured interview methods, focus group method, document content analysis, questionnaire method, testing, contextual questionnaires, projective drawing techniques, etc. The results of the research made it possible to correlate the educational results of the university subject “Theory and Practice of Teaching Chess” with the characteristics of qualifications in the specialty “Pedagogy” in the general educational standards for the subject “Chess”. Accordingly, the methodological component was revised, providing educational results in the subject, which made it possible to ensure the diversity and expediency of the chosen teaching methods. Research results were taken into account, indicating the need to integrate chess with mathematics and other subjects, since chess have high potential for the development of such cognitive processes and skills of the 21st century as: decision making, critical thinking, cooperation and creative thinking is high. We determined the main provisions of the correlations between the research and educational activities of the university and educational institutions and revealed, the mechanisms of this interaction.

**Keywords:** chess; professional education; research activities; psychological and pedagogical justification; advanced training.

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## Исследования и опыт преподавания предмета «шахматы» в системе образования Республики Армения

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Рассматриваются достижения и проблемы реализованного в общеобразовательных школах АГПУ имени Хачатура Абовяна инновационного учебного проекта «Шахматы». Эти результаты представлены в контексте проблемы обеспечения качества профессионального образования. Проведенное исследование было направлено на выявление механизмов научно-исследовательского и педагогического взаимодействия в процессе психолого-педагогического сопровождения образовательного учебного курса «Шахматы в начальной школе». Главной задачей работы было проанализировать и обобщить результаты многолетних исследований по этой теме. В качестве основных методов работы выступили анализ и синтез проведенных исследований, а также обобщение результатов ранее проделанных эмпирических исследований. Отмечается, что междисциплинар-

ный характер работы требовал применения разнообразных эмпирических методов и методических разработок, отвечающих поставленным целям и задачам: социологический опрос, методы структурированного интервью, метод фокус-групп, контент-анализ документов, метод опросников, тестирования, контекстуальные опросники, проективные рисуночные методики и т.д. Также отмечается, что материалы исследований позволили соотнести образовательные результаты университетского предмета «Теория и практика преподавания шахмат» с характеристиками квалификаций по специальности «Педагогика» в общеобразовательных стандартах по предмету «Шахматы». Соответственно, была пересмотрена методическая составляющая, обеспечивающая образовательные результаты по предмету, что позволило обеспечить многообразие и целесообразность выбранных методов обучения. Были учтены результаты исследований, свидетельствующие о необходимости интегрировать шахматы с математикой и другими предметами, так как высок потенциал шахмат для развития таких познавательных процессов и навыков 21-го века, как: принятие решений, критическое мышление, сотрудничество и креативное мышление. Определены основные положения взаимосвязи научно-исследовательской и учебной деятельности университета и общеобразовательных учреждений, выявлены механизмы этого взаимодействия.

**Ключевые слова:** шахматы; профессиональное образование; научно-исследовательская деятельность; психолого-педагогическое обоснование.

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## INTRODUCTION

In the XXI century, in the context of ensuring the quality of vocational education, the problem of the relationship between research and educational activities of universities and educational institutions has become one of the most urgent. In recent years, in order to solve this problem, quite a lot of reforms have taken place in educational programs of the Republic of Armenia, which are aimed at developing innovative projects that promote the intellectual development of the youth of our country.

The most effective of the projects, in our opinion, is the "Chess" implemented educa-

tional subject for secondary schools. Being a new subject, it, in turn, opened a new page in the method of education of the Republic of Armenia.

In the chess education of the Republic of Armenia, all research and educational components are closely intertwined and integrated, but until sometime, formally, they concerned mainly the research of teaching chess in the field of secondary schools.

Unfortunately, a full-fledged attempt has not yet been made to combine the curriculum and research activities of universities. The active and effective mutual communication of teaching and scientific research, in our opin-

ion, will allow researchers of the Scientific Research Institute of Chess of the Armenian State Pedagogical University (hereinafter: CSRI ASPU) to ensure harmony in the work to improve the quality of general and university education.

**The purpose of the study** is to identify the mechanisms of research and pedagogical interaction, as well as to analyze and summarize the results of many years of research and the process of the psychological and pedagogical support for the “Chess in Elementary School” educational training course. To achieve this goal, it is necessary, first of all, to analyze and then compare the results of many years of research in the field of chess education and the experience of teaching the “Chess in Elementary School” course. Research in this area can be divided into the following stages:

1. In 2011—2017, the results of teaching chess in schools of the Republic of Armenia were analyzed. At this stage, socio-psychological and cognitive factors were mainly studied, showing the effectiveness of teaching chess without purposefully comparing their results with the practice of teaching chess at university [6; 18].

2. In 2017—2020, research in the field of chess education was conducted mainly in line with republican quantitative research [10; 16], among which it is possible to highlight republican research aimed at identifying chess knowledge and the relationship between teachers and parents. At this stage, the research results were mainly introduced into the practice of teacher retraining, as well as into the process of training future chess teachers.

3. 2020—2023, research [4; 5; 17; 19; 20; 21] in the field of chess education, was already mainly conducted in experimental and quasi-experimental conditions, and the research tasks were mainly related to the need to identify specific effective teaching methods, which were subsequently introduced into the practice of teaching and retraining teachers.

Since 2011, a chess training project has

been introduced into secondary schools of the Republic of Armenia as a compulsory academic subject. A lot of time has passed, and there are serious developments that today will allow us to talk about the accumulated significant experience in the field of research on the process and results of teaching chess as an innovative project for the school education system and university teaching.

Since 2012, the “Theory and practice of teaching chess” subject has also been included in the professional educational program of the “Pedagogy and Methods of Primary Education” Bachelor’s degree of the ASPU named after Khachatour Abovyan.

In 2018, the ASPU Scientific Research Institute of Chess was established, which includes an interdisciplinary research team dealing with the main areas of research in chess teaching: cognitive and psychological, educational and methodical, chess and methodical, as well as sociological and inclusive. The aim of the ASPU CSRI is to identify and use the potential of chess education to improve educational achievements and the quality of life of citizens of the XXI century.

The Institute systematically and quite effectively cooperates with many organizations that deal with the problems of chess education. In particular, in cooperation with the International Chess Federation (FIDE) and the European Chess Union (ECU) statistical data on educational chess in the world was collected and analyzed.

In 2022, the International Chess Federation (FIDE) approved the international teacher training/qualification program developed at CSRI. The course program includes many modern teaching methods adapted for the online training of chess teachers. The CSRI has become a partner in the process of evaluating the quality of training and certification of chess teachers [5].

The “Theory and Practice of Teaching Chess” academic subject is included in the “Pedagogy and Methods of Primary Education” bachelor’s degree program and is stud-

ied for two semesters: a total of 240 academic hours (8 credits).

It should be noted that we conducted a study at the initial stage (March—April 2022), according to the specification, curricula, subject descriptions and thematic weekly plans.

During the analysis of learning outcomes, special attention is paid to:

- formulation of the objectives of the professional training program;
- learning outcomes and their correspondence with the characteristics of national and sectoral qualifications frameworks (SQF), which will allow for systematic and level-structured teaching content;
- the use of teaching/learning methods and the evaluation of learning outcomes in the professional education program;
- compliance of the educational professional program with the learning outcomes;
- compliance with learning outcomes according to the subject descriptions of the planned results in the educational professional programs;
- the conformity of the used subject educational products (thematic content, teaching methods used and training tasks) to the learning outcomes;
- the mandatory presence in the specifications of the teacher’s/educator’s qualification of pedagogical knowledge, subject descriptions and their compliance with the results of the use of educational products (general education standards, connection with other subjects and programs taught in secondary schools).

Analytical discussions, seminars, round tables, etc. were held periodically on the listed “correspondences” and other issues noted above.

It should also be noted that the professional bachelor’s degree educational program for the department of Pedagogy and Methods of Primary Education is defined as the “Theory and Practice of Teaching Chess”.

In 2020, according to the results of research conducted by the ASPU CSRI, there

was a need to improve the theory and practice of teaching the subject of “Chess”, some components of the weekly topical breakdown, etc. Subsequently, in 2021, a draft Concept of teaching chess in primary schools of the Republic of Armenia was put into circulation. It should be noted that later the subject was included in the new draft of the State Standard of General Education [2]. It should be noted that the prerequisites for the above-mentioned innovations were previously conducted socio-psychological and educational studies of the ASPU CSRI.

The main research goal of the ASPU CSRI subsequently became the identification and use of ***the potential of chess education to improve educational achievements and the quality of life of citizens of the XXI century.***

It should be noted that in 2019, the educational standard of the “Chess” academic subject was revised based on a comparison of available and expected learning outcomes in primary school.

According to these results, the following fundamental amendments were made:

- the new version of the standard was compiled based on the principle of the dominance of the game component;
- complex topics were excluded from the program, and several chess tactics were added;
- according to the principle of consistency, the strategy section began to be presented in a spiral;
- attention is paid towards the organization of lessons-contests, which demonstrate previously obtained information in an exciting playful way;
- a project-based method of teaching chess was introduced [8].

## RESEARCH METHODS

It should be noted that in this article, the main research methods were the analysis and synthesis of conducted studies, as well as the generalization of previously conducted

empirical studies. As part of our research, we studied the main goals and ideas noted in the concept and program, the expected and key measurable success indicators, the objective parameters of which make it clear how close we are to achieving the goal, as well as their compliance with the basic provisions of the concept and training programs on the subject of “Chess” for secondary schools. We paid special attention to weekly topical planning and subject description of the university course, where a description of teaching methods and learning tasks was given to all topics, which makes it possible to assess the degree of ensuring the effectiveness of training and working methods of teaching.

Taking into account the interdisciplinary approach in the CSRI, the staff of the Institute applied various empirical methods and methodological developments: the sociological survey, structured interview methods, the focus group method, the content analysis of documents, the questionnaire method, testing, contextual questionnaires, projective drawing techniques, etc. In the course of individual studies, the Egoscope complex was used — an innovative tool for psychological and psychophysiological diagnostics. The IBM SPSS program was used for the statistical analysis of the obtained results.

## RESULTS

In the context of research on the impact of chess on cognitive development, as well as on the emotional and behavioral characteristics of schoolchildren, numerous studies have been published by the staff psychologists of the ASPU CSRI.

The interrelation of chess knowledge and other school subjects was studied and shown, it was proved that, thanks to the teaching of the “Chess” subject, it is possible to form and develop students’ thinking, logic, analytical ability, imaginative thinking, independent work skills and a sense of responsibility, as well as the ability to acquire personal qualities that are necessary for socialization into soci-

ety [10; 12; 18; 20]. Of particular importance were those studies aimed at identifying the influence of school chess on the development of students’ critical thinking [15; 17].

Investigating the interrelation of the “Chess” and “Mathematics” subjects and their influence on the divergent thinking of students, V.S. Karapetyan, S. Misakyan, Sh. Sargsyan conducted a comparative analysis of the stages of solving mathematical and chess problems. It was revealed that the actions included in these tasks are based on almost the same logic. In terms of correlations, their data are quite close to each other (the correlation coefficient is 0.9065). A comparison of the components of divergent thinking in mathematics showed that their relative correlation was 0.5783, and the correlation of divergent thinking in chess was 0.5353 [14].

The authors argue that the inclusion of tasks and exercises with chess pieces and the use of a chessboard in the educational process has great potential for the development of cognitive and logical actions, spatial thinking and the ability of elementary school students to act in their minds. The inclusion of the developed tasks in the educational process will also contribute to the formation of positive motivation among primary school students to learn chess and mathematics.

It should be noted that the research results partially coincide with the studies of R. Trincherо and G. Sala. According to them [25], chess is an effective tool for solving mathematical problems for primary school children, but only if the training includes the heuristic methods of these solutions. Heuristics helps novice chess players recognize and interpret game situations, shorten moves for analysis and make the right moves without overloading the players’ cognitive system.

Within the framework of the sociological research of chess education, it is important to note the research of K. Tanajyan, N. Melkonyan and S. Movsisyan, according to which chess is perceived by elementary school students as one of their favorite subjects.



Thus, 43% of respondents ranked chess among the top three favorite subjects, for 11% — chess was in the first place, for 5% — in the second, and for 27% — in the third. Sociological studies have also revealed that chess contributes to the formation and development of linguistic, logical and algorithmic thinking in children, foresight and influence on the situation, the assessment of the importance of education through the development of imagination and creativity. In addition, each chess problem is aimed at creating and developing a certain quality, i.e. moderation, active memory, cooperation, etc. [24].

Considering the problem of chess education in the context of the individual psychological characteristics of schoolchildren and the connection of chess education with other academic subjects, it was reliably revealed that “The diversification of chess teaching methods, the introduction of interactive teaching methods, as well as the psychological support for the chess learning process, taking into account the identified individual psychological characteristics of children, will significantly increase the effectiveness of chess teaching” [4, pp. 116—117].

It should be noted that in the context of inclusive education, there was cooperation with the FIDE Commission on Social Issues, with which the Endless Chess project was evaluated to identify the impact of autism spectrum

chess interventions (ASD) on children with disorders.

As a result, data was revealed on the positive impact of chess on children with ASD, as well as the fact that various behavioral manifestations have different effects on chess skills. As a result of learning chess, all behavioral indicators of children with ASCH, in particular, have improved significantly:

- the ability to ask and answer questions (figure 1);
- eye contact (figure 2);
- verbal communication and interpersonal relationships (figure 2).

However, it should be noted that the mechanisms by which these effects lead to the desired results have not yet been fully disclosed (Figure 1).

A peculiar challenge was the need to introduce sections into the program aimed at teaching chess to children with special educational needs.

Thus, we have managed not only to diversify the teaching methods for students, but also to improve the quality of student learning.

It should be noted that, as part of the research of ASPU CSRI, one of the most informative projects on chess education has become periodic nationwide research, in which students, teachers, experts and parents from all regions of the country take part. On the basis of the general education program, tests are used as tools to test knowledge of the

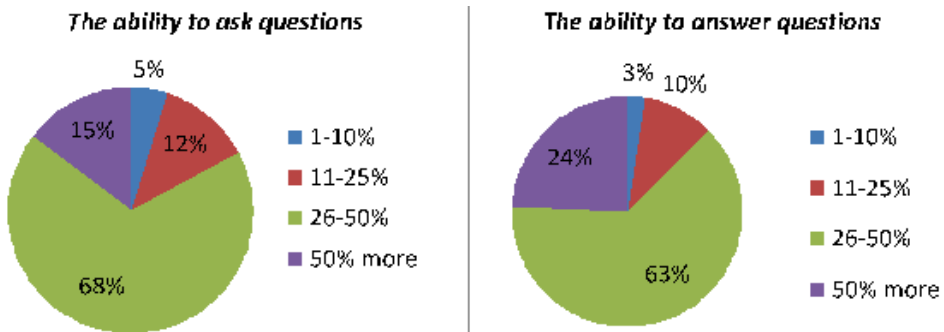


Figure 1. Expert assessments of the indicators and responses of children with AS engaged in chess to them

game of chess, socio-psychological contextual questionnaires are conducted, children's drawings, essays, discussions of student performance, etc. are analyzed. Since 2015, these studies have been conducted every two years [5, p. 11].

Based on this study, the staff of ASPU CSRI made key conclusions, identified numerous factors (family upbringing, the socio-economic status of the family, parents' attitudes to children's education, etc.) that affect the results of effective chess learning [10; 16; 19]. Thus, being a new academic subject included in the national school system, **chess has opened a new page in the methods of Armenian education.**

It should be noted that previously unpublished research results on the motivational factors of chess education indicate that, among the many motivational factors, only the factors of responsibility and valuable action have a significant positive impact on chess achievements. In other words, in teaching chess, the internal motivation of students is obviously crucial.

Analyzing the process of studying chess positions and check-mate situations, V. S. Karapetyan concluded: the algorithmic way of thinking greatly contributes to the development of systematic knowledge and skills, including in the study of the chess discipline [13, p. 52].

Based on the above-mentioned studies, the ASPU CSRI is conducting work aimed at **evaluating and revising textbooks and teaching aids, as well as training and re-training teachers and educators.**

Research practice, within the framework of various projects, has significantly expanded cooperation with international chess and educational organizations. A special direction in the work of ASPU CSRI can be noted, in particular, the organization of international scientific and practical conferences, at which the "Chess in the Education System of the Republic of Armenia" innovative project of Armenian developers was highly appreciated [3].

One of the most important activities of the Institute was also the analysis of the impact of the results of chess education on the development of skills in the 21st century. To this end, in cooperation with the Singapore-based "Logic mills" organization, the world's only computer gaming method "Mir me" was applied [23], aimed at assessing skills of the 21st century.

Preliminary research results [4] at a statistically significant level revealed the natural influence of chess skills on skills of the 21st century. The results obtained made it possible to expand the research goals by setting the tasks of analysis not only of the relationship of the above-mentioned variables, but also of such intermediate factors as teaching methods, learning style, etc.

As part of the assessment of the quality of education and for a comprehensive study of the relationship between research and educational practice in the field of chess education, an assessment of the teaching of the "Theory and Practice of Teaching Chess" course was undertaken. The study involved 178 students who studied in this subject.

The results of the study showed that the majority of students positively assess the acquired knowledge in terms of its possible application in the teaching process, as well as the methodological equipment of lessons. The content of the "Chess" subject, according to the students, meets the requirements for teaching at school. Relatively low scores, compared to other criteria, were obtained for the integration of the subject with other subjects.

At the same time, some students suggested making the course content more practice-oriented and giving students the opportunity to "play chess during lessons", others — to increase the number of hours for classes; to carry out a deeper study of all topics; to be more consistent in working with those students who are able to record great success in the studied the course.

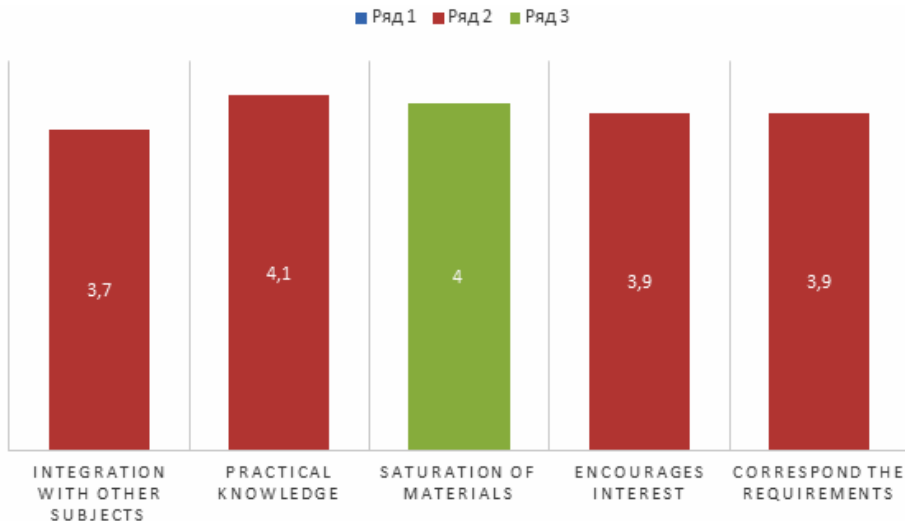


Figure 2. Average Student Ratings of the Parameters of the "Theory and Practice of Chess" University Course

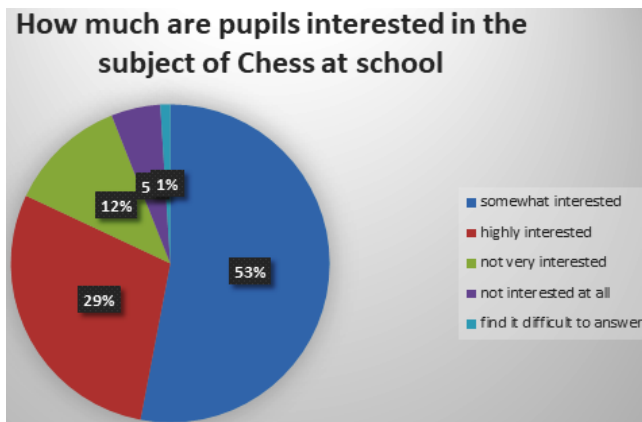


Figure 3.

## DISCUSSION

Research in the field of chess education has shown that chess as a general education subject has great potential for the development of children: in particular, their cognitive, social development, for the development of certain specific skills such as problem-solving and decision-making, creativity, divergent and algorithmic thinking, mathematical knowledge

and skills, etc. But as numerous studies by outstanding researchers in the field of chess psychology and education show, the transfer or transfer of knowledge from one field of knowledge to another can be considered one of the most pressing problems of modern educational psychology [11].

The transfer of learning, in our case, is defined as the transfer of previously learned

reactions or knowledge to a new or changed situation or requirement. Transfer occurs when learning in one context or with one set of materials affects performance in another context or with other related materials. There are *positive, negative, lateral, vertical or hierarchical, sequential, specific and non-specific transfers* [22].

Thus, we can state that the competent management of this transfer is the task of the teacher. This is especially relevant in light of the trend of the integration of different disciplines, which undoubtedly takes place in modern education. Moreover, according to R. Trinchero's research, the transfer of learning is limited to the extent to which the two areas have common elements [25]. And this, in fact, implies that in order to effectively integrate chess with related subjects, it is necessary to clearly present the goals and methods of this integration and adapt the teaching process to this goal.

A completely different question arises if these subject areas have common prerequisites as cognitive or other, more general, abilities. A meta-analytical review conducted by G. Sala and F. Gobet indicates that the optimism about a long-distance transfer is not justified, although cognitive abilities correlate with subject-specific skills [9, p. 5]. In other words, transferring knowledge from chess to other non-adjacent disciplines is very difficult, if not impossible. It can also be assumed that the training includes the common elements necessary for teaching more or less non-specific knowledge, which, in turn, may negatively affect the students' chess knowledge. At the same time, our preliminary results show that chess knowledge leads to the development of 21st century skills, precisely at the required level of chess knowledge. Motivational factors are also an important factor, which, in turn, are determined by the optimal complexity of the tasks. Therefore, we suggest that there is an optimal level of chess knowledge, which, on the one hand, can positively influence the development of 21st century competen-

cies, by motivating students, and on the other hand, are not specific enough to transfer to other subjects and knowledge.

Longitudinal studies are interesting and necessary for a vertical transfer, which would give an unambiguous answer to the question: how much does chess education affect academic performance, motivation and other significant indicators of schooling.

Thus, O.V. Glukhova, S.V. Volikova, Yu.V. Zaretsky and V.K. Zaretsky concluded on the basis of 11 years of research that "When conducting a comparative study of the influence on the dynamics of the development of higher mental functions, as well as the ability to act in the mind of children engaged and not engaged in chess, the following pattern was revealed: indicators are higher in children who study chess using the "Chess for general development" technology... Despite the practical alignment of the development of cognitive functions by the ninth grade, the overall academic performance of children studying in the Chess for General Development technology is significantly higher than that of non-students using this technology" [1, p. 71].

Based on the results of the research and practice of teaching chess in schools of the Republic of Armenia, it became possible to revise and reformulate the purpose of the subject, as well as improve learning outcomes, bringing them in line with the goals of the "Pedagogy and Methods of Primary Education" professional bachelor's degree educational program. The close interrelation of scientific and educational work made it possible to correlate the learning outcomes of the "Theory and practice of teaching chess" university subject with the characteristics of qualifications in the "Pedagogy" specialization in general education standards for the "Chess" subject. Accordingly, the methodological component that provided learning outcomes in the subject was revised, which made it possible to ensure the diversity and expediency of the chosen teaching methods.

In the process of teaching the "Chess" subject, on the basis of research data, the need for the formation of the ability to test and evaluate the skills of primary school children came to the fore (which became a real challenge at the beginning of the introduction of the program in schools), as well as the formation of students' basic principles of didactics and skills of applying health regulations in the process of learning the "Chess" subject in elementary school. Accordingly, research results were taken into account, indicating the need to integrate chess with mathematics and other subjects, since chess has a high potential for developing such cognitive processes and skills of the 21st century as decision-making, critical thinking, collaboration and creative thinking.

Based on the problems identified in the ASPU CSRI, necessary steps were also taken to implement measures aimed at ensuring the personal growth of primary school children through the subject of "Chess".

All these activities have been included in the school curriculum, in new updated textbooks, as well as in the teacher retraining program.

## CONCLUSIONS

1. Chess as an educational subject has significant potential for the overall development of children, both in terms of transferring knowledge and skills to individual subject areas, and for use in inclusive education. The development of this potential is significantly conditioned by a variety of such direct and contextual factors as teacher training, the individual psychological characteristics of students, the goals, methods and technologies of teaching, the optimal complexity of the subject, the cooperation between teachers and parents, etc.

2. Summarizing the example of effective experience in the interaction of research and teaching activities, we can conclude that our approach can be useful for other academic subjects and subject blocks of secondary

schools, as it will create the prerequisites for the successful interaction between a pedagogical university and schools in the 21st century.

3. Based on research practice and taking into account the empirical data obtained, active steps have been taken at ASPU CSRI to improve the quality of teaching the "Theory and Practice of Teaching Chess" university subject.

4. A detailed analysis of the implementation of research results in the field of chess education and in the training program for future teachers on the subject of "Chess" allowed us to identify a list of priority tasks for the effective development of chess education.

In particular:

a) ensuring the relevance and validity of the content of the subject from the point of view of introducing the results of research on chess education into the practice of teaching chess at a university;

b) ensuring compliance between the expected results of chess education at school, the requirements of new general education standards and the chess teaching program at the university;

c) the introduction of scientifically based and proven methods of teaching chess into the student's curriculum and teaching practice;

d) to what extent is the training program consistent with the programs and implemented in the system of training and retraining of chess teachers;

e) overcoming objective barriers in the process of determining and ensuring the necessary knowledge of future teachers, both in terms of the subject knowledge of chess, and in terms of the pedagogical knowledge and skills necessary for teaching chess in schools.

5. In order to qualitatively improve the content of teaching the "Theory and Practice of Teaching Chess" subject, we have proposed recommendations for **the formation of students' ability to implement effective individual and group forms of organizing the**

**learning process** in secondary schools, using the appropriate teaching methods provided for in the program of the “Chess” subject.

6. Taking into account **the possibilities of using project-based and game-based teaching methods, measures were identified to take into account the age of pri-**

**mary school students, psychological and developmental forms of education and the methods of organizing the education of children with special educational needs. The need for a more targeted integration of chess teaching methods with other primary school subjects** was also identified.

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