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MECHANISMS FOR QUANTITATIVE AND QUALITATIVE ASSESSMENT OF THE STUDY OF THE INCLUSIVE EDUCATIONAL ENVIRONMENT

Abstract

The article discusses the impact of the inclusive educational environment on professional formation and its scientific assessment in the process of training future teachers. The implementation of the principles of inclusive education in the modern education system imposes new requirements on the content of teaching staff training. However, in practice, the assessment of the inclusive educational environment is often limited to organizational or formal indicators, and its real impact on the professional training and educational practice of future teachers is not sufficiently studied. In this regard, there is a need for a comprehensive study of the inclusive educational environment as a pedagogical resource that contributes to the professional development of future teachers. The purpose of the study is to identify the role of the inclusive educational environment in the formation of professional competencies in the process of training future teachers and justify the possibilities of combining quantitative and qualitative approaches to its assessment.

In the course of the study, an analysis of the scientific literature was carried out to identify the theoretical foundations of the inclusive educational environment. At the empirical stage, a mixed methodological approach was used, survey and content analysis methods were used. This approach made it possible to comprehensively consider the views of future teachers regarding the inclusive environment, professional positions and the level of formation of skills used in inclusive practice. The results of the study showed that the inclusive educational environment has a positive impact on the formation of humanistic and personality-oriented professional positions of future teachers. At the same time, the data obtained revealed that although the level of value perception of the principles of inclusive education by future teachers is high, the formation of professional skills associated with their implementation in real pedagogical practice is uneven. There was a need for methodological support, especially in the areas of adaptation of the assessment of educational achievements, differentiation of educational tasks and planning of training taking into account the individual characteristics of students. The article substantiates that the combined use of quantitative and qualitative approaches to assessing the inclusive educational environment allows us to more fully characterize the professional training of future teachers. The results of the study can serve as a scientific and practical basis for determining the directions of development of an inclusive educational environment in the system of training teachers and improving the practice of inclusive education.

Key words: inclusive education, inclusive education environment, assessment mechanisms, quantitative and qualitative assessment, psychological and pedagogical support, future teacher, professional competencies.

Introduction. The implementation of inclusive principles in the modern education system is becoming an urgent problem not only at the level of general secondary education, but also in the educational environment of organizations of higher and (or) postgraduate education that train teaching staff. In the context of inclusive education, the professional training of the future teacher is characterized by the readiness of students to take into account the diverse learning characteristics, work with children with special educational needs, adapt teaching and create a safe, supportive educational environment. Therefore, an inclusive educational environment is considered as an important condition for the formation of professional competencies of future teachers.

The formation of an inclusive educational environment is not limited to ensuring material access. Its content includes pedagogical flexibility, psychological security, social support, the ability to participate equally in the educational process, as well as approaches to teaching and evaluation adapted to students with special educational needs. From this point of view, the inclusive environment should form not only the value position of the future teacher, but also the readiness for real professional activity.

In the scientific literature, the inclusive educational environment is characterized as a multifaceted phenomenon. In a number of studies, it is interpreted as a socio-pedagogical system that ensures equal participation of students and the reduction of barriers, while in other works, priority is given to psychological safety, a favorable microclimate and individualization of the educational process. Research in another area explains the effectiveness of an inclusive environment by adapting educational content, transforming teaching methods, and adapting evaluation mechanisms. Consequently, the inclusive educational environment is a comprehensive system based on the interconnection of physical, pedagogical, psychological and social components. However, the analysis of these studies showed that the assessment of an inclusive environment is often limited to either structural conditions or subjective opinions of participants. As a result, its real impact on the professional training of future teachers is not fully disclosed.

The development of inclusive education in the Republic of Kazakhstan is supported by international and national legal documents. The convention on the rights of the child, National Legislative Acts aimed at supporting children with special educational needs, as well as modern conceptual documents for the development of an inclusive policy affirm the need to ensure equal access and a supportive environment in the education system. At the same time, the current regulatory framework provides for the introduction of inclusive approaches in the practice of educational organizations, as well as bringing the professional training of teaching staff in line with these requirements. This increases the importance of adhering to the concepts and approaches enshrined in the legislation when assessing the training of future teachers.

Nevertheless, a number of contradictions remain in the issue of studying the inclusive educational environment in organizations of higher and (or) postgraduate education. On the one hand, an inclusive environment is recognized as an important resource that contributes to the professional formation of the future teacher. On the other hand, its assessment is often limited to formal indicators, and important qualitative aspects such as the learning experience of future teachers, professional reliability, learning adaptation and evaluation skills are not sufficiently taken into account. Hence the need to study the inclusive educational environment in the unity of quantitative and qualitative mechanisms.

The scientific problem of the study is related to determining by what indicators it is possible to comprehensively assess the impact of an inclusive educational environment in an organization of higher and (or) postgraduate education on the professional training of future teachers.

In accordance with this, the purpose of the article is to analyze the quantitative and qualitative assessment mechanisms used in the study of the inclusive educational environment in the process of training future teachers and characterize them as the basis of a comprehensive assessment model.

Research objectives:

- theoretical analysis of the essence and structural components of the inclusive education environment in the process of training future teachers;
- determination of the main indicators of professional training of future teachers in relation to work in an inclusive environment;
- description of the possibilities of quantitative and qualitative mechanisms used in assessing the inclusive educational environment;
- justification of directions for improving the inclusive educational environment based on the results of assessing the professional training of future teachers.

Research forecast: if the inclusive educational environment is considered as a unity of pedagogical, psychological and organizational conditions that contribute to the professional training of future teachers, and quantitative and qualitative mechanisms are used comprehensively in its assessment, then it will be possible to more clearly and substantively determine the level of readiness of future teachers for inclusive practice.

The specifics of the study is due to the focus on the Universal professional skills of future teachers. In this regard, the object of research was the educational environment in the process of training teachers and its influence on the professional training of future teachers. And defectologists and tutors were not included in this study, since the study was aimed not at assessing the professional

activities of special support specialists, but at assessing the basic professional training of a teacher in general, necessary to work in an inclusive class environment.

Thus, the study of the inclusive educational environment allows us to determine not only the value orientation of future teachers, but also their readiness for professional activities, such as adaptation of teaching, assessment of educational achievements, planning taking into account the characteristics of students and ensuring psychological safety. Therefore, a comprehensive assessment of the inclusive educational environment is an important prerequisite for improving the quality of teaching staff training and making scientifically based decisions aimed at developing inclusive practice.

The problem of inclusive education is considered in modern pedagogy on the basis of various theoretical positions. An analysis of scientific works shows that at least three main directions have been formed in the interpretation of inclusive education: the first, a direction that considers inclusion as a socio-pedagogical system aimed at equal participation and reducing educational barriers; the second, a direction that interprets the inclusive educational environment as a space for psychological security and favorable interaction; the third is a didactic direction that explains the effectiveness of an inclusive environment through the adaptation of educational content, methods and evaluation mechanisms.

In domestic studies, inclusive education is often characterized as a system aimed at ensuring equal participation of students, taking into account their individual characteristics and reducing barriers to the educational process. Shalgynbaeva K. K. and Ospanova B. K. explain inclusion as a complex phenomenon that takes into account the needs and characteristics of students, creates conditions for equal participation and requires adaptation of the educational environment [1]. Tusupova M. M. also takes a close position and connects the essence of inclusive education not only with the integration of students into one environment, but also with the flexibility of pedagogical decisions, Professional Responsibility and an inclusive culture [2]. What these two positions have in common is that inclusion is interpreted not only as an organizational decision, but as a system that changes the professional position of the pedagogue. At the same time, M.M. Tusupova's work pays more attention to the risks and difficulties of pedagogical activity, while K.K. Shalgynbaeva's and B.K. Ospanova's work emphasizes the value and organizational aspects of inclusion.

Kabdyrova A. A. and Kenzhebekova E. M. draw attention to the problem of interaction in the context of inclusive education [3]. The authors promote the professional position of the teacher, openness to partnership and the organization of the educational environment as a condition for successful learning and socialization. This conclusion suggests that in domestic studies, the content of inclusion is largely associated with the value training of the teacher and the culture of interaction between participants. However, in these works, the actual assessment indicators and criteria of the inclusive environment in the conditions of training future teachers are not sufficiently specified.

In foreign and Russian studies, the structure of the inclusive educational environment is considered in a more classified form. Bliznyuk O. A. and Senchenkov N. P., analyzing the relationship between the concepts of "inclusive educational environment" and "inclusive educational space", show that they are not balanced in content Terms [4]. The authors interpret the inclusive environment as a system of specially organized conditions. Here, conceptual concreteness is given priority, that is, inclusion is considered as an educational reality with specific structural characteristics, and not just an idea or principle. Such a position is more systematic in comparison with domestic works, however, it pays little attention to the analysis of the subjective experience of future teachers.

Kozyreva O. A. considers the inclusive educational environment as a socio-pedagogical problem and characterizes it as an environment that expands students' opportunities to participate in educational, cultural and social life [5]. This view reveals the nature of inclusion based on social justice. However, although the structural characteristics of the medium are given in O.A. Kozyreva's work, empirical mechanisms for assessing it are not clearly presented. In this sense, although these studies contribute to explaining the essence of the inclusive environment, they do not sufficiently reveal the evaluation model that directly relates it to the results of the teacher's training.

Studies that consider the inclusive educational environment from the point of view of psychological security deepen the content of this concept. Slyusareva E. S. characterizes the inclusive environment as a psychological and pedagogical reality in which security, convenience and accessibility are ensured, substantiating its structure through the spatial-material, psychodidactic and socio-psychological components [6]. This concept shows that an inclusive environment is not limited to physical access, it relies on learning motivation, freedom of choice, mutual respect between participants and recognition of the value of each student. The advantage of the model proposed by slyusareva is its multicomponence, however, it is not directly aimed at assessing the professional competencies of future teachers.

In works that consider the didactic and design aspects of inclusive education, the problem of adaptation of educational content comes to the fore. Kaimara P. sees inclusive education as a systemic reform that requires a redesign of educational content, teaching materials, digital tools and pedagogical technologies [7]. According to the authors, an effective inclusive environment should be based not on a standardized, but on content adapted to the individual learning characteristics of the student. This approach is important for teacher training, as it explains the professional training of the future teacher through meaningful adaptation and variable learning.

Debasu H. continues to analyze the design and management of an inclusive learning environment at the institutional level [8]. The authors indicate that the effectiveness of an inclusive environment depends on a psychologically safe climate, physical accessibility and a flexible curriculum. If the kaimara work is dominated by the redesign of educational content, the Debasu H. study shows stronger institutional management and organizational aspects of the educational environment. A comparison between these two directions shows that the interpretation of the inclusive environment is dominated by didactic logic, on the one hand, and institutional logic, on the other.

Bakhmat N. explains the socio-pedagogical potential of an inclusive environment, especially through socialization, communication and interaction [9]. The authors consider the professional training of a teacher as the main condition for inclusive practice. This conclusion echoes domestic research, since in both directions the importance of the personality of the teacher, his professional position and actions based on partnership is clearly expressed. And Grishaeva S. substantiates the inclusive educational environment as a prerequisite for high-quality inclusive education and introduces cultural-value, legal-regulatory, personnel-professional, pedagogical-methodological and institutional-organizational components into its structure [10]. The peculiarity of this model is that the inclusive environment is considered not only as a state of learning, but as a whole system of organization culture, management and professional development.

Comparison of the analyzed studies allows us to draw several conclusions. First of all, all authors recognize the inclusive educational environment as a multicomponent and adaptive system. Secondly, in domestic studies, the value and socio-pedagogical aspects of inclusion are considered priority, while in foreign and Russian works its structural, psychodidactic and institutional components are presented in a more classified form. Thirdly, although many works give a broad description of the inclusive environment, the mechanisms for its comprehensive assessment in terms of influencing the professional training of future teachers are not sufficiently clarified. The problem of assessing the impact of an inclusive environment on the Universal professional skills of future teachers, especially combining quantitative and qualitative indicators, has not been sufficiently studied.

Consequently, an analysis of the scientific literature shows that an important theoretical basis has been formed on the structure, principles and conditions of functioning of the inclusive educational environment. However, this basis often remains at the descriptive level and is not fully brought to the development of a comprehensive model for assessing the inclusive environment in the conditions of training future teachers. This gap forms the theoretical premise of the study and justifies the need to consider the inclusive educational environment in the unity of quantitative and qualitative assessment mechanisms.

An analysis of the scientific literature showed that the structure of the inclusive educational environment is a multicomponent phenomenon, however, the models of its comprehensive

assessment in terms of contributing to the professional training of future teachers are not sufficiently clarified. Taking into account this gap, the study proposes an author's conceptual model that considers the inclusive educational environment as a unity of four interrelated components that contribute to the professional formation of future teachers.

Inclusive education environment in the proposed model:

- value-security component;
- assessment adaptation component;
- component of adaptation of educational tasks;
- characterized by a component of individualization of planning and training.

The first component includes the principles of equal participation in the educational process, psychological safety, mutual respect and Prevention of discrimination. The second component describes the willingness to use individualization, consideration of Educational Progress and alternative assessment approaches in assessing educational achievements. The third component combines the skills of differentiating educational tasks according to the characteristics of students, changing the level of complexity and presenting the material in different formats. The fourth component reflects the ability to plan training taking into account the individual characteristics of students, adapt learning goals and diversify methods.

The peculiarity of this model lies in the fact that the inclusive educational environment is considered not only as an organizational or value environment, but also as a pedagogical resource that forms specific professional actions of the future teacher. In accordance with this, the study assessed the effectiveness of the inclusive education environment through the level of formation of the four listed components.

Methods and materials. The methodological basis of this work was a mixed research approach. The choice of a mixed approach was associated with the need to consider the impact of an inclusive educational environment on the professional training of future teachers from two angles: firstly, to quantify the level of manifestation of individual indicators of professional training; and secondly, to explain through the subjective experience of students how and why these indicators are formed. In accordance with this, the work considered quantitative and qualitative data of a complementary nature.

The study relied on systematic, competence-oriented and participant-oriented approaches. The systematic approach made it possible to consider the inclusive educational environment as a whole of interrelated pedagogical, psychological and organizational conditions. The competence-oriented approach served as the basis for assessing the readiness of future teachers for inclusive practice through specific professional actions. The participant-oriented approach was aimed at analyzing students' learning experience, professional confidence and understanding of the inclusive environment.

Research base and participants

Empirical work was carried out on the basis of an organization of higher and (or) postgraduate education that trains teaching staff. The selection was organized according to the target principle. The participants included students studying in pedagogical educational programs, who in the future are focused on pedagogical activity in organizations of general secondary education. Students of 2-3 courses were involved in the selection process. The total sample size was 60 students.

This type of selection was chosen in accordance with the purpose of the study, since the work was aimed at assessing the Universal professional training of not special support specialists, but precisely future general teachers in relation to work in an inclusive environment. For this reason, defectologists, tutors and specialists from the psychological and pedagogical support service were not included in the selection. This decision was made not to narrow down the object of study, but to clarify the unity of analysis: the work considered the impact of an inclusive educational environment on the overall training of a teacher.

At the same time, it should be noted that the purposefulness and small nature of the sample does not allow to generalize the results obtained directly to the entire set of students. Therefore, the

conclusions describe the trends within this sample and are not automatically distributed to all students.

Data collection tools

The data was collected using two tools: a structured questionnaire and an open-ended Question Block.

1. digital tool: survey

The questionnaire was developed as an author's tool for assessing the basic professional training of the future teacher in relation to working in inclusive class conditions. The content of the questionnaire was compiled on the basis of a review of the literature, regulatory documents on inclusive education and requirements for the professional activity of the future teacher. The tool consisted of four content blocks:

- skills of adaptation of assessment of educational achievements;
- skills of adaptation of educational tasks;
- training planning skills taking into account the individual characteristics of students;
- pedagogical principles aimed at ensuring equal participation and psychological security.

The answer to each statement in the questionnaire was set on a 5-point Likert scale:

- 1-completely disagree;
- 2 – often disagree;
- 3 – I can't give an exact answer / partially agree;
- 4-agree;
- 5-fully agree.

The average score was calculated individually for each statement and each block. To interpret the average indicators, the following criterion was used:

- 1.00-2.33-low level;
- 2.34-3.67-middle level;
- 3.68-5.00-high level.

The standard deviation (SD) was used to indicate the level of uniformity of responses: the lower the SD, the smaller the spread of participants' responses. And the percentages of "low", "medium", "high" were calculated by grouping the average score scored by each student in the corresponding block, in accordance with the above intervals. This approach allows you to clearly explain the value of points and percentages in tables.

2. a quality tool: a block of open questions

The qualitative component was used to complement and deepen quantitative results. If the digital data is "at what level? if the question "Why is the qualitative data formed in this way?"and" how does this manifest itself in professional practice? the main goal of the event was to reveal the following questions: To this end, at the end of the survey, students were asked questions in an open format.

The open questions were aimed at identifying the following aspects:

- how they perceive the learning experience in an inclusive environment;
- what professional difficulties you experience;
- how confident he feels in the assessment and adaptation of tasks;
- what prevents or supports the use of inclusive approaches in future pedagogical activities.

The qualitative component was not used to simply repeat quantitative measurements, but to identify the motivations behind them, practical difficulties, and professional reflection.

Validity and reliability of tools

The questionnaire was subjected to a preliminary examination in terms of content validity. The content of the tool was submitted for evaluation by 2 experts in the field of inclusive education, pedagogy and psychological and pedagogical support. Experts assessed the relevance of the survey conclusions to the purpose of the study, the degree of conceptual clarity and coverage of indicators of professional training. Based on Expert Opinions, a number of conclusions were clarified, stylistic and substantive corrections were made.

Data collection procedure

Data collection was carried out from January to May 2025. The purpose of the study was explained to students, and participation was organized on a voluntary basis. The survey was conducted in an offline / online format. It took an average of 20 minutes to fill it. All responses were processed anonymously.

Although quantitative and qualitative data were collected at the same stage, the analysis was carried out at two levels. First, the results of the survey were analyzed digitally, then the answers to open questions were considered through content analysis. Such a sequence made it possible to use qualitative data as a means of interpreting quantitative results.

Data processing and analysis

In the process of processing quantitative data, descriptive statistics were used. The average score (Mean), standard deviation (SD) and level distribution (%) were calculated for each statement and each content block. These indicators made it possible to characterize the general picture of the training of future teachers in relation to work in an inclusive environment.

Since the purpose of this work was not a statistical comparison of differences, but a description of the level of manifestation of professional training, the analysis was limited to descriptive statistics. This selection is also related to the size of the sample. Therefore, it is better to consider the obtained averages as a characteristic of the studied group, and not a population conclusion.

Qualitative data were processed by the method of content-thematic analysis. At first, open answers were read several times, and the initial semantic units were marked. Similar responses were later encoded and combined into the following thematic categories:

- subjective learning experience in an inclusive environment;
- a sense of professional confidence;
- preparation for the future application of inclusive approaches in practice;
- concepts and difficulties related to the evaluation and adaptation of tasks.

This approach to analysis allowed the qualitative material to perform not only descriptive, but also explanatory functions. That is, the qualitative part was used not only to confirm quantitative results, but also to reveal their causal and experimental aspects.

Methodological limitations

The work has several limitations. First, the sample size was limited to 60 students and was formed by the principle of targeted selection, so it is necessary to carefully distribute the results to a wider population. Secondly, the bulk of the data relies on responses of a self-assessment nature, while this does not completely exclude the likelihood of a socially acceptable response. Third, qualitative data was collected through open questions, so they are limited in nature compared to deep methods such as focus group, observation. Nevertheless, the applied mixed approach made it possible to comprehensively characterize the impact of the inclusive educational environment on the professional training of future teachers at the initial level.

Results and Discussion. The quantitative component of the study was aimed at determining the level of manifestation of universal professional skills of future teachers necessary for working in an inclusive environment. 60 students studying in pedagogical educational programs took part in the empirical stage. Therefore, it should be borne in mind that although the results obtained characterize general trends in the training of future teachers, their direct distribution to the entire set of students is limited.

The survey consisted of four content blocks:

- adaptation of the assessment of educational achievements;
- adaptation of educational tasks;
- planning of training taking into account the individual characteristics of students;
- pedagogical principles aimed at ensuring equal participation and psychological security.

All conclusions were evaluated on a 5-point Likert scale. The average score (Mean) given in the tables indicates the level of agreement with a particular statement, the standard deviation (SD) indicates the degree of dispersion of answers, and the percentage of low, middle, and high levels indicates the distribution of students' answers by level intervals. Thus, the data in the tables allows you to see not only the overall average, but also the structure of the answers.

1. indicators of adaptation of the assessment of educational achievements

The first block was aimed at determining the readiness of future teachers to adapt the assessment process to the characteristics of students. In this block, such indicators as the transformation of assessment criteria, taking into account the progress of the student and the use of alternative assessment methods were considered. The results of the survey on the adaptation of the assessment of educational achievements are shown in Table 1.

Table 1. The results of the survey on the adaptation of the assessment of educational achievements

Survey conclusion	Average score	Standard deviation	Low %	Middle %	High %
I believe that it is necessary not to be limited to one standard requirement in assessing students' academic achievements	3,62	0,71	15,0	51,7	33,3
I can adapt the evaluation criteria according to the individual characteristics of the students	3,41	0,69	20,0	55,0	25,0
When evaluating, I take into account the progress (progress) of the student	3,52	0,66	18,3	50,0	31,7
I am ready to use alternative assessment methods (oral, project, portfolio)	3,37	0,73	20,0	56,7	23,3

Source: developed by the authors.

The data of Table 1 showed that the indicators related to the adaptation of the assessment are mainly at the average level. The highest average score belonged to the statement "it is necessary not to limit yourself to just one standard requirement" (Mean = 3.62). This means that future educators understand that the assessment should not be limited to just one criterion. However, changing the assessment criteria based on the individual characteristics of students (Mean = 3.41) and using alternative assessment methods (Mean = 3.37) indicates that this understanding has not yet become a stable professional skill.

In other words, future educators recognize the importance of adapting the assessment, but there is uncertainty when it comes to implementing it in a specific pedagogical situation. The indicator of taking into account the student's progress in learning was also at the average level (Mean = 3.52). This result indicates that the idea of taking into account not only the final grade, but also the dynamics of learning is beginning to be accepted, but there is not enough methodological preparation for its systematic application.

These conclusions coincide with the results in the literature. For example, Kaimara P. and Debasu H. points out that in inclusive learning, evaluation approaches need to be revised along with content and teaching methods. At the same time, domestic studies also show that the value side of inclusion is perceived faster than practical tools. Our results support this trend: although inclusive assessment principles are accepted at a value level, the algorithms for their application are not sufficiently developed.

The data obtained on this block indicate the need to strengthen practical tasks on the transformation of assessment criteria, accounting for student progress, the use of alternative assessment formats, such as portfolio, project, oral response, in pedagogical training programs.

2. indicators of adaptation of training tasks

The second block concerned students' skills in adapting the content, volume, complexity and presentation format of tasks based on their characteristics. Indicators of adaptation of training tasks are shown in Table 2.

All indicators in this block are located between 3.23 and 3.38, indicating that the skills of adapting training tasks are also at an average level. The lowest result was recorded in the statement "it is not difficult for me to prepare tasks available to all students" (Mean = 3.23). That is, the development of an inclusive task is a relatively difficult professional task for future teachers.

Table 2. Results of a survey on the competence block of adaptation of training tasks

Survey conclusion	Average score	Standard deviation	Low %	Middle %	High %
I can compose tasks of different levels to achieve the same educational goal	3,29	0,74	25,0	48,3	26,7
I can change the volume or complexity of tasks depending on the capabilities of the student	3,34	0,71	21,7	53,3	25,0
I am ready to present one task in several formats (text, image, scheme)	3,38	0,70	23,3	51,7	25,0
It is not difficult for me to prepare tasks that are available to all students	3,23	0,73	23,3	53,3	23,4

Source: developed by the authors.

The indicators "drawing up tasks of different levels to achieve the same educational goal" and "changing the volume or complexity of tasks" are also not high. This indicates that future teachers understand the essence of differentiated and adapted learning, but are not ready for its systematic use at the design stage. Although the willingness to present the same task in several formats is slightly higher (Mean = 3.38), this figure has not reached a stable professional level either.

This result is combined with the studies analyzed in the literature review. Kaimara P. emphasizes the importance of redesigning content and teaching materials in inclusive education, Debasu H. attributes this to institutional and methodological support. Our results also reflect the same problem: although the adaptation of tasks is recognized at the level of an individual approach, there is not enough clear methodological base for its implementation.

At the same time, the low level of these indicators in comparison with the first block suggests that task construction and differentiation is a more complex activity than changing assessment approaches. Therefore, in order to strengthen the readiness to work in an inclusive environment, it is necessary not only to give students a theoretical understanding, but also to compile differentiated tasks, present educational material in several formats and present practical cases on the application of the principles of universal design.

3. Planning of training taking into account the individual characteristics of students

The third block was devoted to assessing the readiness of future teachers to plan lesson structure, learning goals and teaching methods in accordance with the specifics of the inclusive class. The results of the survey on training planning taking into account the individual characteristics of students are shown in Table 3.

Table 3. Results of a survey on training planning taking into account the individual characteristics of students

Survey conclusion	Average score	Standard deviation	Low %	Middle %	High %
When planning a lesson, I take into account the different learning rates of students	3,71	0,63	13,3	55,0	31,7
I can adapt my learning goals to the capabilities of my students	3,65	0,66	15,0	53,3	31,7
I am ready to use several teaching methods in parallel in the lesson	3,74	0,61	11,7	55,0	33,3
Lesson planning for working in an inclusive classroom is clear to me	3,66	0,65	13,3	56,7	30,0

Source: developed by the authors.

The results in the third block were slightly higher than in the previous two blocks: the indicators ranged from 3.65 to 3.74. This suggests that future teachers have a much better understanding of the principles of inclusive planning. The highest result was related to the preparation for the parallel use

of several teaching methods (Mean = 3.74). Consequently, students adopt the idea of transforming teaching methods.

At the same time, the indicators of adaptation of educational goals (Mean = 3.65) and clarity of the lesson plan for the inclusive class (Mean = 3.66) showed that the training in this area is still incomplete. That is, there is an understanding at the planning level, but the difficulty remains in transforming it into clear documentary and methodological solutions.

This result coincides with E.S. Slyusareva's conclusions about the psychodidactic component. The author writes in an inclusive environment "how do we teach? the question "what is it?" is of particular importance. In our study, the indicators related to the same question were slightly higher than in the assessment and adaptation of tasks, however, it is too early to call them permanent professional skills. At the same time, Grishaeva S. notes that the effectiveness of an inclusive environment depends on the integrated adaptation of the curriculum, methods and organizational mechanisms. Our results support this view: inclusive planning occupies an important place in the professional training of future teachers, but it requires support with methodological exercises and model lesson plans.

Therefore, the data obtained on this block prove the need for targeted training of students in the direction of creating an inclusive lesson, adapting the purpose of training, coordinating methods and individualizing the structure of the lesson.

4. Pedagogical principles aimed at equal participation and psychological safety

The fourth block was devoted to the assessment of value and relational orientations in an inclusive environment. Such positions as the safety of each student, prevention of discrimination, mutual respect and support for dialogue were considered here. The results of the survey on pedagogical positions aimed at equal participation and psychological safety are shown in Table 4.

Table 4. The results of the survey on pedagogical positions focused on equal participation and psychological safety

Survey conclusion	Average score	Standard deviation	Low %	Middle %	High %
I believe that all students should feel safe in the classroom	4,32	0,52	3,3	31,7	65,0
I believe that it is the teacher's duty to prevent discrimination in an inclusive environment	4,18	0,54	5,0	35,0	60,0
I can build a respectful relationship between students	4,06	0,57	8,3	41,7	50,0
I believe that it is important to listen to the opinion of each student	3,92	0,59	10,0	38,3	51,7

Source: developed by the authors.

The fourth block showed the highest results compared to other blocks. The average score for all conclusions was in the range of 3.92–4.32. The highest score was determined in relation to the statement "all students should feel safe" (Mean = 4.32). This means that future teachers perceive psychological security as the main condition for an inclusive environment.

The high indicator that it is the teacher's responsibility to prevent discrimination (Mean = 4.18) also indicates a good acceptance of the value foundations of inclusive education. The indicators of forming a respectful relationship between students and listening to the opinion of each student were also at a high level. However, the share of mid-level responses is not small here, so it is impossible to say that these positions are fully stable.

This result coincides with domestic and Foreign Studies. Shalgynbaeva K.K. and Ospanova B.K., Kabdyrova A.A. and Kenzhebekova E.A. demonstrate the importance of equal participation, interaction and creating a receptive environment in inclusive education. Slyusareva E.S. and Zubchenko O.M. substantiates that psychological security forms the core of an inclusive environment. Our study also empirically supports these conclusions: future teachers have better mastered the humanistic and value foundations of inclusive education than practical skills.

This situation shows one important pattern: value perception and professional and methodological training are not formed at the same pace. The faster the ideas of psychological security and equal participation are adopted, the longer and more purposeful the components of action, such as adaptation of assessment, task and planning, require.

A comparison of the results obtained on four blocks showed that there is a certain inequality in the training of future teachers. The highest rates were observed in positions related to equal participation and psychological security. And the lowest indicators were recorded in the areas of adaptation of educational tasks and adaptation of assessments. Training planning indicators are located between these two levels.

This structure means that the value component of inclusive training is much better formed than the action component. In other words, future teachers understand why an inclusive approach is needed, but have not fully mastered how to implement it in the classroom. Such a result echoes the phenomenon of "the gap between value harmony and practical training", which is often found in inclusive research.

The qualitative component was implemented by considering the answers to open questions on the basis of content-thematic analysis. This analysis focused on complementing the quantitative results and explaining the reasons behind them. As a result of the differentiation of open answers, four main thematic categories were identified:

- learning experience in an inclusive environment;
- a sense of professional confidence;
- preparation for the future application of inclusive approaches in practice;
- difficulties with the assessment and adaptation of tasks.

In the first category, the majority of students described the inclusive environment as a supportive and receptive environment. In the answers, such substantive phrases as "moderate perception of diversity", "listening to each other", "free expression of one's opinion", "participation without fear" were often found. These data explain the high rates in the fourth block: psychological security and equal participation are first established as a value that is felt in the daily learning experience.

In the second category, many students noted that studying in an inclusive environment gradually increased their professional confidence. In some responses, it was noted that at the initial stage there was uncertainty about working with children with special educational needs, and during the study, this fear was somewhat reduced. Therefore, an inclusive environment contributes to changing not only the attitude of the future teacher, but also his professional sense of self.

The third category concerned the preparation for the use of inclusive approaches in future practice. Here, the majority of students rated inclusive approaches as necessary and useful. However, in their answers, it became clear that examples, algorithms, and practical instructions are needed to apply these approaches clearly. This coincides with quantitative results: there is value training, but the means of action are not enough.

The fourth category revealed the difficulties associated with the assessment and adaptation of tasks. The most frequent substantive units in the open responses were: "ignorance of how to simplify the task," "the difficulty of preparing a common and accessible option for everyone," "it is difficult to combine fairness and individualization in the assessment," "there is little practical example." These data explain the decrease in averages in the first and second blocks and clarify the weak points of the respondents.

The main result of qualitative data is that future teachers support the idea of an inclusive environment, consider it important for their future work, but need specific methodological tools in adapting assessments, tasks and planning. Thus, the qualitative component made it possible not only to simply repeat the quantitative results, but also to explain why they were exactly the same.

The results show that the impact of an inclusive educational environment on the professional training of future teachers is manifested at two levels. At the first level, this influence is of a value nature: students value such principles as psychological security, prevention of discrimination, and equal participation. At the second level, this influence is associated with methodological training:

indicators remain at the average level in the areas of adaptation of assessments, differentiation of tasks and individualization of training.

This difference can be explained by several factors. First, value and legal aspects are often given in the educational content on inclusive education, and practical tools are sometimes insufficiently covered. Secondly, future teachers master the assessment and adaptation of the task in real lesson conditions only through experience. Third, the action part of inclusive training requires reflection, model tasks, case analysis, and practice-related training.

From this point of view, the results of the study complement the conclusions expressed in the literature. If in previous works the structure, principles and psychological significance of the inclusive environment were more broadly described, then in this work the inequality in its influence on the specific professional skills of future teachers was empirically demonstrated. That is, an inclusive environment is more productive in the formation of value orientations, and for the formation of methodological skills, additional organized training mechanisms are needed.

Thus, the mutual coincidence of quantitative and qualitative results increases the consistency of research conclusions. The inclusive educational environment has a positive impact on the formation of a humanistic and personality-oriented professional position of future teachers. However, its assessment should not be limited only to the level of attitude and attitude. In order for an inclusive environment to be truly productive, students also need to be armed with action skills, such as adapting assessments, differentiating tasks, individualizing lesson structures, and modifying methods.

Conclusion. The conducted study made it possible to empirically characterize the influence of the inclusive educational environment on the formation of professional competencies in the process of training future teachers. The results of the study, based on the analysis of quantitative and qualitative data, revealed a number of features of the level of professional training and attitudes of future teachers in relation to the inclusive environment.

The results of the quantitative analysis showed that the pedagogical positions of future teachers regarding equal participation and ensuring psychological safety were formed at a relatively high level. This indicates that the humanistic and personality-oriented principles of inclusive education are successfully mastered in the context of Higher Education.

It was established that professional skills of practical orientation, such as adaptation of assessment, differentiation of educational tasks and planning of training taking into account the individual characteristics of students, are formed at the middle level. This indicates that future teachers have a general understanding of the principles of inclusive education, but insufficient experience in applying them in specific pedagogical situations.

The results of the qualitative analysis showed that students evaluate the inclusive educational environment as a supportive and receptive environment. At the same time, the answers of students showed that methodological difficulties remain in the issues of assessment and adaptation of tasks. These qualitative data coincide with the formation of practical skills at the middle level, which is observed in quantitative results.

In general, the results showed that the inclusive educational environment has a positive impact on the formation of value orientations of future teachers, but for the development of practical professional skills, specially organized methodological support is needed. Therefore, the systematic introduction of practical cases, model situations and reflexive tasks on the adaptation of assessments, differentiation of educational tasks and individualization of training is important in the training programs of teachers.

At the same time, the study has a number of limitations. First of all, empirical data were based on the survey responses of 60 students, therefore, the results obtained characterize trends within a particular educational organization, and their direct generalization to all pedagogical students is limited. Secondly, since the study relied on self-assessment data, the participants' responses reflect their subjective opinions.

A promising direction in the upcoming research is to conduct comparative studies involving students studying in various educational programs in order to more widely study the impact of an inclusive educational environment on the professional training of future teachers, as well as

supplement the survey results with additional data such as materials of pedagogical practice, lesson plans or portfolio analysis.

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ИНКЛЮЗИВТІ БІЛІМ БЕРУ ОРТАСЫН ЗЕРТТЕУДІ САНДЫҚ ЖӘНЕ САПАЛЫҚ БАҒАЛАУ ТЕТІКТЕРІ

Аңдатпа

Мақалада инклюзивті білім беру ортасының кәсіби қалыптасуына әсері және болашақ мұғалімдерді даярлау процесінде оның ғылыми бағасы қарастырылады. Қазіргі білім беру жүйесінде инклюзивті білім беру принциптерін енгізу педагогикалық кадрларды даярлау мазмұнына жаңа талаптар қояды. Алайда, іс жүзінде инклюзивті білім беру ортасын бағалау көбінесе ұйымдастырушылық немесе формальды көрсеткіштермен шектеледі, оның болашақ мұғалімдердің кәсіби дайындығы мен оқу практикасына нақты әсері жеткілікті түрде зерттелмеген. Осыған байланысты болашақ мұғалімдердің біліктілігін арттыруға ықпал ететін педагогикалық ресурс ретінде инклюзивті білім беру ортасын жан-жақты зерделеу қажеттілігі туындайды. Зерттеудің мақсаты – болашақ мұғалімдерді даярлау процесінде кәсіби құзыреттілікті қалыптастырудағы инклюзивті білім беру ортасының ролін анықтау және оны бағалаудың сандық және сапалық тәсілдерін біріктіру мүмкіндіктерін негіздеу.

Зерттеу барысында инклюзивті білім беру ортасының теориялық негіздерін анықтау мақсатында ғылыми әдебиеттерге талдау жүргізілді. Эмпирикалық кезеңде аралас әдіснамалық тәсіл қолданылды, зерттеу және мазмұнды талдау әдістері қолданылды. Бұл тәсіл болашақ мұғалімдердің инклюзивті ортаға, кәсіби ұстанымдарға және инклюзивті практикада қолданылатын дағдылардың қалыптасу деңгейіне қатысты көзқарастарын жан-жақты қарастыруға мүмкіндік берді. Зерттеу нәтижелері инклюзивті білім беру ортасы болашақ мұғалімдердің гуманистік және тұлғалық-бағдарлы кәсіби ұстанымдарының қалыптасуына оң әсер ететіндігін көрсетті. Сонымен бірге, алынған мәліметтер болашақ мұғалімдердің инклюзивті білім беру принциптерін құндылықты қабылдау деңгейі жоғары болғанымен, оларды нақты педагогикалық практикада жүзеге асырумен байланысты кәсіби дағдылардың қалыптасуы біркелкі еместігін көрсетті. Әдістемелік қолдау қажет болды, әсіресе оқу жетістіктерін бағалауды бейімдеу, оқу міндеттерін саралау және оқушылардың жеке ерекшеліктерін ескере отырып оқытуды жоспарлау салаларында. Мақалада инклюзивті білім беру ортасын бағалаудың сандық және сапалық тәсілдерін бірлесіп қолдану болашақ мұғалімдердің кәсіби дайындығын неғұрлым толық сипаттауға мүмкіндік беретіндігі негізделген. Зерттеу нәтижелері мұғалімдерді даярлау жүйесіндегі инклюзивті білім беру ортасын дамыту бағыттарын анықтауға және инклюзивті білім беру тәжірибесін жетілдіруге ғылыми-практикалық негіз бола алады.

Түйін сөздер: инклюзивті білім беру, инклюзивті білім беру ортасы, бағалау тетіктері, сандық және сапалық бағалау, психологиялық-педагогикалық қолдау, болашақ мұғалім, кәсіби құзыреттіліктер.

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МЕХАНИЗМЫ КОЛИЧЕСТВЕННОЙ И КАЧЕСТВЕННОЙ ОЦЕНКИ ИССЛЕДОВАНИЯ ИНКЛЮЗИВНОЙ ОБРАЗОВАТЕЛЬНОЙ СРЕДЫ

Аннотация.

В статье рассматривается влияние инклюзивной образовательной среды на профессиональное становление будущих педагогов в процессе их подготовки, а также научная оценка данного влияния. Реализация принципов инклюзивного образования в современной системе образования предъявляет новые требования к содержанию подготовки педагогических кадров. Однако на практике оценка инклюзивной образовательной среды часто ограничивается организационными или формальными показателями и недостаточно изучается ее реальное влияние на профессиональную подготовку будущих педагогов и их учебный опыт. В связи с этим возникает необходимость комплексного изучения инклюзивной образовательной среды как педагогического ресурса, способствующего профессиональному развитию будущих педагогов. Цель исследования – выявить роль инклюзивной образовательной среды в формировании профессиональных компетенций будущих педагогов в процессе их подготовки и обосновать возможности сочетания количественного и качественного подходов к ее оценке. В ходе исследования был проведен анализ научной литературы для определения теоретических основ инклюзивной образовательной среды. На эмпирическом этапе применялся смешанный методологический подход, включающий методы анкетирования и содержательного анализа. Такой подход позволил комплексно рассмотреть взгляды будущих педагогов на инклюзивную среду, профессиональные позиции и уровень сформированности навыков, применяемых в инклюзивной практике. Результаты исследования показали, что инклюзивная образовательная среда положительно способствует формированию гуманистической и личностно-ориентированной профессиональной позиции будущих педагогов. Также полученные данные показали, что, хотя уровень ценностного восприятия будущими педагогами принципов инклюзивного образования высок, формирование профессиональных навыков, связанных с их реализацией в конкретной педагогической практике, неоднородно. Особенно отмечена потребность в методической поддержке в направлениях адаптации оценки учебных достижений, дифференциации учебных заданий и планирования обучения с учетом индивидуальных особенностей обучающихся. В статье обосновывается, что сочетание количественного и качественного подходов к оценке инклюзивной образовательной среды позволяет наиболее полно охарактеризовать профессиональную подготовку будущих педагогов. Результаты исследования могут служить научно-практической основой для определения направлений развития инклюзивной образовательной среды в системе подготовки педагогических кадров и совершенствования практики инклюзивного образования.

Ключевые слова: инклюзивное образование, инклюзивная образовательная среда, механизмы оценки, количественная и качественная оценка, психолого-педагогическое сопровождение, будущий педагог, профессиональные компетенции.

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