Training of future primary school teachers for work in an understaffed school

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Article Info

ABSTRACT

This study examined the emotional and psychological environments of primary school students and the role of teachers in maintaining their health. The goal was to understand how the educational environment affects students' physical, psycho-emotional, and social health and to develop methods for training future primary school teachers to support student well-being. The study involved 105 future teachers from Karaganda Buketov University, Republic of Kazakhstan, selected through convenience sampling. The scale emotional response test by Mehrabyan and Epstein was used to assess empathic abilities. The results showed that 16% of participants had high empathy, 37% had average empathy, and 47% had low empathy. The findings highlight the need for enhanced empathy training and health-promoting environments in schools. Practical implications include incorporating empathy modules in teacher education programs and investing in ergonomic infrastructure to improve student well-being and academic achievement.

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1. INTRODUCTION

The current educational environment separates students from their relatives, who previously provided security and emotional comfort [1]. Students enter a new collective that requires adjusting to unfamiliar daily routines and environments. This adaptation involves meeting their physical, psycho-emotional, and social needs through positive emotional support and ensuring physical safety and psychological comfort [2], [3]. Upon reaching a certain age, children encounter peers experiencing similar psychological uncertainty and physical unease [4]. Over time, this forced immersion into a stressful educational atmosphere, characterized by sustained attention demands, impacts their emotional and psychological well-being [5], [6]. Additional stress arises from environmental disturbances such as noises, screams, and external sounds from peers, corridors, or streets [7], [8].

What happens at the level of healthy reflection of nervous system reactions of a primary school student at the level of psychological interaction with these stimuli, how to pay attention to them with an adequate behavioral response that involves motor and speech functions, and what is important is that such a distraction from the attention of the action taking place within the educational process is the norm for

a healthy child [9], [10]. However, this fact on the part of the primary school teacher will be perceived as a violation of discipline with an appropriate reaction to what in modern education implies receiving a remark, which at the level of child psychology will be perceived as punishment, but given the psychophysiological need to turn around and study where; for example, sounds come from, especially considering that for a child his place of stay and the collective of people who surround him are new, then this is a fact of the norm [11].

Modern conditions of pedagogical education should consider the details at the level of children's stay in educational institutions from a versatile position to identify different circumstances at the level of the educational process, the created atmosphere, the form of knowledge presentation, various possible circumstances that may appear during the educational process, personal needs, family circumstances and the family atmosphere of the child's home, as well as, importantly, the teacher must understand all his responsibility for preserving the health of each of his students, both at the psycho-emotional, physical, social levels, which is formed based on behavioral reactions and an example of behavior in different situations on the part of the teacher and other students of the class.

Modern pedagogical education must comprehensively account for children's experiences within educational settings, considering aspects such as classroom atmosphere, teaching methods, and potential situational challenges [12]. It should also thoughtfully integrate students' personal needs, family backgrounds, and home environments into the educational process [13]. Teachers hold significant responsibility in maintaining children's psycho-emotional, physical, and social well-being through their behavior and reactions, which serve as critical examples for students [14].

When addressing this issue, it is essential to establish a health-preserving atmosphere within educational institutions throughout all stages and daily routines. This includes balanced scheduling of rest periods, personal interests, cultural activities, and supplementary education conducted at a comfortable pace [15], [16]. Such a structured approach helps prevent anxiety and reduces the likelihood of situations where students' individual needs remain unmet, thus safeguarding their emotional and social well-being [17]. Given that school years coincide with crucial periods of active personality formation, each aspect of a child's educational experience must prioritize their overall health [18], [19]. Consequently, careful consideration of ergonomic conditions will support harmonious and healthy personal development among students [20].

The educational environment significantly influences the physical, psychological, and social well-being of primary school students. Given the growing significance of mental health and comprehensive child development, it is crucial to comprehend the educational environment and the role of educators in enhancing educational practices and outcomes. This research is innovative in its thorough integration of empathy training and ergonomic factors into teacher education programs, filling a significant gap in the existing literature. This study seeks to improve student well-being and academic performance, thereby contributing to the broader domains of education and child development.

2. METHOD

The research revealed that many prospective educators lack the necessary empathy to promote student health and well-being. The empathic abilities of 105 prospective primary school teachers were assessed using Mehrabyan and Epstein's scale emotional response test [8]. This assessment helps enhance the intellectual empathic skills of future educators, enabling them to fulfill their professional duties, foster positive student-teacher relationships, and create a supportive, creative atmosphere in both instructional and extracurricular activities. The quality of internal empathy enables teachers to support children's psychological and physical health, influencing their social interactions. Schools serve as a social space where children learn self-fulfillment and cultural development, guided by the teacher's example in handling various emotional and physical situations during the school day. The scale emotional response test is a reliable and valid tool for measuring prospective teachers' empathic abilities, validated against other established measures and found to provide consistent results. The data from the test were analyzed using standard statistical methods, including means, standard deviations, and percentages. The results were presented in figures to illustrate the distribution of empathy levels among the participants.

This test has a number of proposals, which consist of 25 questions-judgments of a different nature within the framework of direct and reverse perception. The subject will evaluate based on positive or negative perception from the perspective of their own understanding of personal level of ability to empathize with deep emotional perception. It will allow at the level of behavioral reaction providing the necessary support and assistance in the considered framework of the educational process, which can determine professional criteria of aptitude for this work, considering its specific features. It assumes great importance in the establishment and development of a person as a member of society at the level of their development and preservation of their health in a holistic understanding.

After the testing, the results obtained were calculated using the keys that allowed determining the level of the presence of empathic property based on an inner feeling that reflects the inner world of a person

with the present motivation in difficult situations to choose ways to solve them within creative conditions that will improve the lives of students at the level of all components on emotional, social, and physical quality with the flexibility of perception of ways to implement targets that will give way to the preservation of a prosperous component of the student's life. When calculating the results of the study, the standard method of mathematical calculation and graphical representation of the results was used. The pedagogical experiment was conducted based on the Karaganda Buketov University, Republic of Kazakhstan. The 105 students from 1st to 4th year with an age parameter from 19 to 26 years were subjected to diagnostic testing. Participation was voluntary, irrespective of gender.

This problem was investigated in three stages. At the first stage, a theoretical analysis of scientific, research, methodological literature on the issue under consideration was carried out as part of the development of methodological aspects of training future primary school teachers, and the relevant problem, purpose research method was identified and an active work plan was created. At the second stage, students were tested and the experimental work was carried out with the analysis of the results and the formulation of conclusions. At the third stage, the conclusions were clarified and the results were systematized.

The evidence presented to support the conclusion consists of various essential elements. Initially, the scale emotional response test was utilized to conduct diagnostic testing and evaluate the empathic capacities of prospective elementary school educators. This assessment facilitated a numerical assessment of the participant's capacity to empathize and offer essential assistance to students. Additionally, a statistical analysis was performed to compute and visually display the test results, illustrating the distribution of empathy levels among the participants. The analysis presented a lucid depiction of the data, emphasizing the distribution of participants with elevated, moderate, and diminished levels of empathy. In addition, a theoretical analysis was conducted, which included a thorough examination of scientific literature and methodological factors about the training of elementary school educators. This analysis established a basis for comprehending the present condition of teacher training and the significance of empathy in educational environments. A pedagogical experiment was carried out in three distinct phases: theoretical analysis, testing, and the formulation of conclusions.

One potential bias in this research is the use of convenience sampling, which may limit the generalizability of the findings to the broader population of future primary school teachers. Additionally, self-report measures, such as the scale emotional response test, may be subject to social desirability bias, where participants provide responses that they believe are socially acceptable rather than their true feelings. To mitigate this bias, participants were assured of the confidentiality and anonymity of their responses.

3. RESULTS AND DISCUSSION

Using a system-active approach, the data from testing were analyzed to identify factors influencing the development and implementation of professional competencies in future primary school teachers within a health-preserving environment. This approach ensures compliance with norms for preserving the physical, psycho-emotional, and social development of school-age children. The younger generation's time in school should be managed at a health-saving level, as the body subconsciously compensates for negative external factors. Primary school teachers must recognize and interpret various child behaviors without emotional misperceptions or administrative pressure, correcting conditions that hinder comfort and contribute to health issues, especially in understaffed classrooms where individual attention is possible [10].

The training of school teachers needs to be reviewed to prioritize students' physical and emotional health, considering their psychophysiological development and comfortable adaptation to school. It is crucial to address personal needs, including playtime, outdoor activities, rest, and support at physical, psycho-emotional, and social levels. Teachers should provide individualized care to maintain healthy development and nurture each student's talents and creative abilities [15]. The situation of non-compliance with developmental norms, which exacerbates children's conditions, is widespread. This is further intensified when teachers interfere in child-parent relations, presenting a healthy child negatively to parents, influenced by administrative pressure. As a result, the child becomes inattentive, emotionless, and motionless, responding only to questions and following prescribed instructions. This suppresses their psychophysiological development, harming their psycho-emotional state, self-esteem, physical development, and creativity [16].

The parent-child relationship should be based on satisfaction, moral support, physical care, and boundaries that foster a sense of love, care, and protection. Unjustified teacher claims about normal child behavior under strict limits should be addressed, as they hinder student development and impact their personality [4]. Primary school teachers sometimes mistreat students by denying playtime or meals, misinterpreting these activities as non-educational. Such actions harm parent-child communication and deprive children of emotional warmth, leading to negative self-images, antisocial behavior, and emotional

distress. Teachers must recognize the long-term impact of their words and actions on children's psychological and physiological well-being [17]. Therefore, teacher reactions should support children, create a comfortable school environment, and consider age-specific characteristics, fostering talent, creativity, and positive relationships with parents, all vital for healthy development [18].

The results of this research with the created methodological parameters for the preparation of future elementary school teachers were introduced into the educational process in several stages. It include the definition of the value concept of empathy at the level of personal internal motivation among students of pedagogical universities, which will be reflected in the level of their behavioral reactions towards students in their motivational and effective processes at the level of life activity in future professional work, as well as pedagogical observation and clarification of the necessary respondents, and final statistical processing of the results obtained [8]. Subsequently, at a further stage, there was a development and implementation of a model of effective methodological parameters of pedagogical support and the conduct of the educational process in a small primary school for its subsequent implementation in the field of practical education.

The study covered 105 students studying in the specialization of a primary school teacher. Analysis of the results of diagnostic testing allowed concluding that mostly, future teachers do not have a decent, high level of personal empathy properties that will determine their psychological and physical behavior at the level of health care in relation to their students. These studies were determined within the present highlighted framework of the degree of personal ability based on emotional response and empathy with respect to the condition or needs of other people:

a. The 16% (17 students) have shown a high level of this criterion, showing a great potential for mutual assistance, altruistic behavior, empathy, flexibility, understanding, and wisdom.

b. The 37% (39 students) had an average level of empathy, which reflects the level of condemnation of another due to misconduct, without understanding the causal relationship of its origin. This level shows a superficial, thoughtless attitude towards their future students, without worries about the consequences affecting their health and fate after the manifestation of their personal emotions and speech influences, behavioral manifestations. This is determined by a superficial judgment at the level of emotional aggression from the personal inconvenience caused by external factors from others. In this case from students, it does not allow them to express themselves at the level of health, creative self-expression within the framework of creative behavior, which does not fit into their teaching understanding of good behavior at school on the part of students [19].

c. The 47% (49 students) have a low empathic property, which shows their internal aggression directed at the personality of students against the background of indifference towards their needs, conditions, with prerequisites for behavioral reactions built based on conflict, in which they feel confident increasingly expressing aggressive behavior at a level that humiliates the personality of the student, as presented in Figure 1.
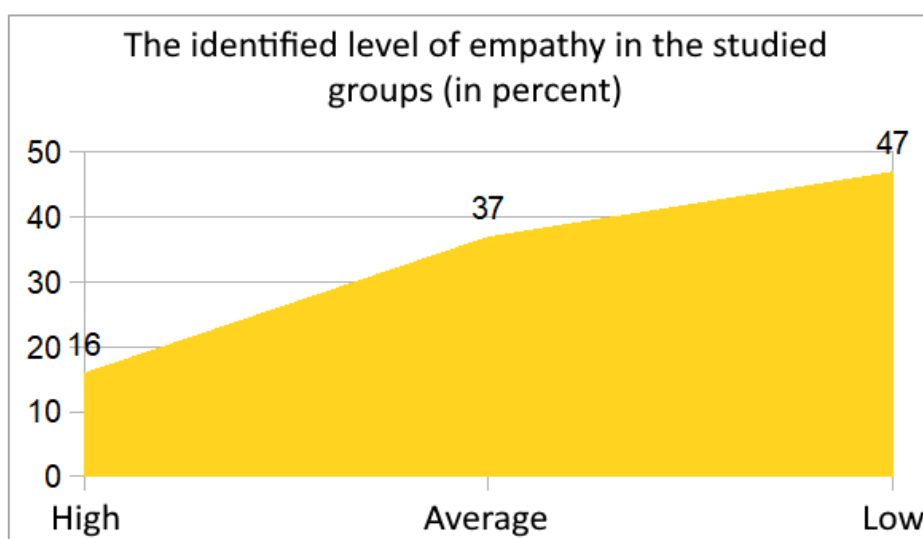

Figure 1. Distribution of students by levels of the identified degree of empathy in the studied contingent

The reflexive evaluation criteria reveal that low indicators stem from the respondent's lack of willingness to help others, lack of personal motivation for the well-being of others, and inability to analyze life events. In health-preserving classrooms, this can lead to neurotic behaviors and self-defense reactions in students, which teachers may misinterpret as disobedience, exacerbating aggression. From a creative perspective, improving teachers' psychological culture and intellectual empathy considered during admission to pedagogical universities will foster harmonious student development based on psychophysiological age criteria. A teacher with high cultural awareness can creatively address issues, promoting calm and harmony while enhancing the student's self-esteem by identifying solutions [21]. Teachers have developed methodologies for primary education, focusing on small equipment, emotional care, and organizational support to preserve students' physical, psycho-emotional, and social health [22]. This includes creating a more relaxed emotional atmosphere at school and recognizing that long periods of discomfort hinder learning, as it diverts the child's focus from the material [23].

Teachers should develop factors of care for students based on their physical and emotional needs, providing active support without negatively affecting the parent-child relationship. Complaints about students or circumstances inconvenient to teachers should be avoided, and administrative pressure should be minimized. Praise should be used to motivate and encourage students, focusing on positive feedback [24]. Therefore, evaluation at the primary school level should be based solely on positive criteria. Educators should teach children organizational skills, such as using office equipment, keeping notebooks, making plans, highlighting key information, scheduling time, and making notes to improve their learning process [25], [26]. Teachers should also guide students in step-by-step homework completion, schoolbag packing, setting up study or recreation areas, and planning. These skills will help students develop independence in the future, based on the teacher's organizational example [27]. The developed criteria for the methodological component of the training of future teachers were put into practice. At the control stage of the study, data were identified in dynamics at the level of a considerable increase in understanding of the importance of expressing the properties of empathy and care on the part of future teachers in relation to students, which are shown in Figure 2.

The effectiveness of this integrated approach lies in its ability to change attitudes toward education, positioning the teacher not only as an information provider but also as a caring friend who helps students solve personal problems [28], [29]. Organizational skills can address issues that hinder academic performance, allowing students to progress at their own pace while developing basic cognitive skills and overall culture [30]. The study's correctness was ensured by aligning the test characteristics and methodological parameters. The analysis of results showed that these criteria significantly enhance the effectiveness of the educational process, contributing to the development of a healthy student personality. In contemporary education, high-quality service delivery and effective adaptation are key [31]. The search for methods that provide strong methodological support, an individualized approach, psycho-emotional support, and health-preserving conditions is crucial. These factors, along with the development of cultural personalities and cognitive interest, are essential for improving teacher training. In understaffed schools, teachers must create conditions that meet modern educational demands, as outlined in the developed methodological parameters [32].
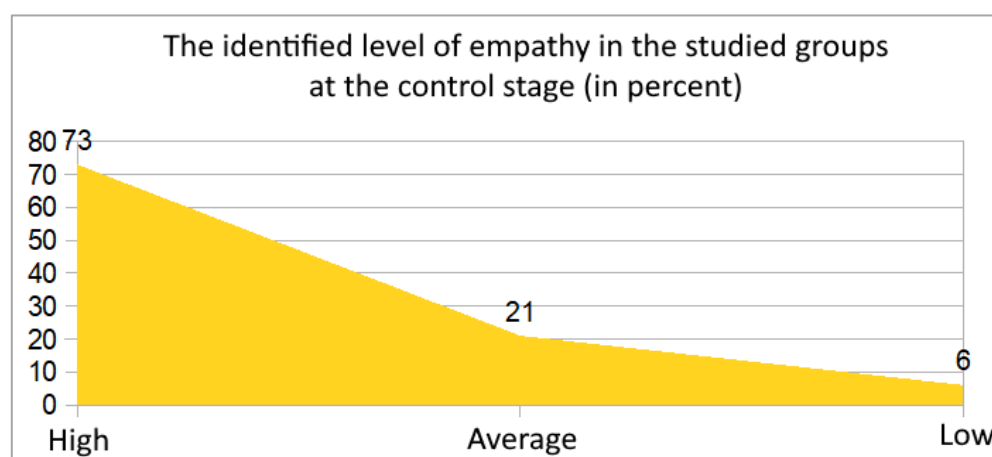

Figure 2. Distribution of students according to the levels of the identified degree of empathy in the studied contingent in dynamics at the control stage of the study

The developed methodological components establish an integrated approach aimed at fostering high-quality intellectual empathy among students of pedagogical universities [33]. This empathy cultivates personal values and professional qualities, equipping future educators with the skills needed to build friendly, supportive, and effective communication with their students [34]. Consequently, this promotes an atmosphere of mutual trust and well-being, enabling learners to engage actively, attentively, and confidently in their educational pursuits [35], [36].

The developed methodological parameters will contribute to the development of the moral component among teachers, which is necessary for the development of a psychological culture of health-saving so that they can notice the emotional background in the classroom and correct it in a timely manner by positively directing it. In fact, this form, due to the created empathy, will allow referring to the teacher's altruism towards their students. Due to a small number, they will be able to fully perform all duties at a high level and considering the individual needs of young schoolchildren. The considered approach in the educational process will also show a good example of behavior at a creative social level to students, which will be built on the visible part of friendly relations among classmates, teachers and students. This is important for the development of a common cultural component of the personality, which in the future will manifest itself in favorable social behavior in society, and thus moral qualities of students will be formed at an active level [37].

A competent approach based on knowledge of the psychophysiological development of young primary school students in conditions that, from the standpoint of ergonomics and a freer mode of behavior within the lesson, will allow the student to maintain health at the physical and psycho-emotional level, as well as such a form will allow the teacher with a large number of pedagogical tools to find constructive ways to resolve conflict situations even during their stay and considering the interests and needs of participants in this. The development of relations based on mutual support and assistance will contribute to the harmonious holistic development of the student's personality with the manifestation of positive results at the motivational, value, cognitive, active, sociable, emotionally respectful, creative, cultural, and aesthetic levels. It will allow solving many practical tasks that the field of education faces [38].

This study's results align with prior research highlighting the importance of empathy in teacher-student relationships. Hobri *et al*. [2] found that teachers with higher empathy levels were better at meeting the emotional and academic needs of their students. O'Connor *et al*. [27] showed that empathy training improves healthcare professionals' empathic skills, which can also apply to education. Other studies, such as Faiola *et al*. [7], have shown that ergonomic furniture and comfortable seating improve student well-being and academic performance, while Nishanthi [23] emphasized the importance of positive communication between educators and parents. The findings of this study not only confirm previous research but also make distinct contributions to educational research and teacher preparation. A comparative analysis reveals both confirmatory and new insights. The finding that only 16% of prospective elementary teachers showed high empathy aligns with Morgan [13] research on emotional competency deficiencies among pre-service teachers. However, this study extends the existing literature by exploring the relationship between empathy levels and health-promoting environments in understaffed schools, a previously underexplored context.

The importance of ergonomic considerations in classroom design, highlighted in our methodology, builds upon Aithal and Kumar work [21] demonstrating a 27% improvement in student engagement when utilizing adaptable furniture. Similarly, Waller [10] found that flexible seating arrangements increased student comfort and reduced reported back pain by 35%. This study contributes by integrating these physical considerations with psychological well-being metrics in understaffed settings. The analysis of the data obtained during testing, using a system-active approach, allowed for the identification of key features influencing the development and implementation of professional competencies among future primary school teachers. These competencies are essential for creating a health-preserving environment for students within a highly professional educational process. This process must comply with all norms related to the preservation of the healthy development of school-age children at the physical, psycho-emotional, and social levels [15].

The educational environment for younger students should prioritize health preservation. A healthy organism instinctively seeks factors to compensate for external discomforts. Primary school teachers must recognize and address these factors, avoiding emotional misinterpretations and administrative pressure. They should correct conditions that cause discomfort, particularly in understaffed classes, where individual attention is possible. For example, prolonged sitting in uncomfortable positions can lead to posture problems, which can be prevented with ergonomic, adjustable furniture and flexible movement during lessons. This study developed methodological parameters for primary education, focusing on organizational and emotional care that prioritizes students' physical, psycho-emotional, and social health. It emphasizes ergonomic classrooms, positive communication to support parent-child relationships, and individual approaches to meet students' personal needs and creative potential. Creating a health-promoting environment ensures overall well-being in the educational setting. Implementing the established

methodological parameters for training primary school teachers will help educators develop advanced knowledge and professional competencies grounded in empathy. This approach will support students, create conducive classrooms, and foster an empathetic educational environment that enhances students' physical, psychological, and social well-being.

4. CONCLUSION

The application of the developed methodological parameters for the training of primary school teachers will allow the teacher to acquire both high-level information. This is currently professionally taught in pedagogical universities and qualitative professional skills based on personal empathy, which is needed to work with children, support them, and create comfortable classrooms. The developed methodological areas allow organizing the educational process at the level of mental activity development while preserving individual needs and creative self-expression, allowing mutual support and assistance to develop a common culture and creative social behavior. Based on intellectual empathy, teachers can predict student reactions to identified situations and provide them with support and assistance through competent cultural and emotional communication. Methodological prerequisites include finding schoolchildren in favorable conditions for the development of physical and psycho-emotional components based on the teacher's organizational and emotional care for young schoolchildren, maintaining a prosperous child-parent relationship by creating a comfortable classroom environment and teaching organizational skills.

This work improves educational pedagogy by addressing a significant gap in the inclusion of empathy and ergonomics training in elementary school teacher education. The innovation is to create methodological parameters aimed at improving teachers' competence in creating emotionally supportive and physically appropriate learning environments, especially in under-resourced schools. The study illustrates the impact of empathy on students' physical, psycho-emotional and social well-being, presenting a holistic approach that integrates emotional intelligence with health promotion interventions. The findings of the study support the systematic integration of these factors into teacher preparation programs to improve student achievement and overall educational quality, offering a distinctive contribution to teacher education practice.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C	:	**C**onceptualization	I	:	**I**nvestigation	
M	:	**M**ethodology	R	:	**R**esources	
So	:	**So**ftware	D	:	**D**ata Curation	
Va	:	**Va**lidation	O	:	Writing - **O**riginal Draft	
Fo	:	**Fo**rmal analysis	E	:	Writing - Review & **E**diting	

Vi	:	**Vi**sualization
Su	:	**Su**pervision
P	:	**P**roject administration
Fu	:	**Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

ETHICAL APPROVAL

This study aligned with the ethical principles of research, including anonymity, confidentiality, and beneficence. Ethical approval of the study was obtained from the Health Research Ethics Commission of the Karaganda Buketov University with No. RA-283.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author [AO], upon reasonable request.

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