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Regional approach in English language teaching

This paper demonstrates the results of the study on realization of regional approach in English language teaching at universities. The regional approach contributes to the formation of student's personality as a worthy representative of any place. When it is included into teaching a foreign language it can also help students become familiar with the treasures of their own country's culture, which is essential for the harmonious development of a modern personality. In addition, the realization of regional approach in the process of teaching English language allows students not only to better understand and assimilate individual linguistic phenomena and cultural realities but also to prepare students for future professional activities in their region. The aim of this research study is to examine students' regional awareness and assess the effectiveness of regional materials in teaching English. The experiment was conducted to determine whether awareness of regional materials in teaching English could enhance students' English language skills. The results of the experiment indicate that the majority of students understand the necessity of including regional content in the teaching process, and regional materials contribute to the development of students' English language skills. The authors of the article believe that their recommendations will facilitate the realization of the regional approach in English teaching.

Keywords: regional approach, teaching, English language, culture, national values, regional awareness, attitude, university

Introduction

All the actions taken in the field of science and culture in the country are aimed at raising education to a higher level for Kazakhstanis on the basis of universal and individual national benefits. One of the most significant state challenges is the formation of an individual who respects the native country, its traditions and customs in order to join the ranks of competitive developed states. Thus, the training of competitive, professionally competent specialists who define the national spiritual character has become an urgent concern in the context of the democratization and humanization of public life.

At this stage of development, as our country has firmly established itself on the international stage and is forging qualitatively new ties with other countries, the ability of specialists to effectively master a foreign language has become essential to society. In this regard, the training of specialists who master English well is very important, since knowledge of English opens up new opportunities for everyone. Knowing English, one can take part in various international conferences, symposiums and seminars devoted to various fields of science. Moreover, specialists who know English well have the chance to work for huge, global corporations that hold prominent positions all around the world.

For English language teaching to be successful, it is essential to enrich the goals of teaching with new content, adopt diverse approaches, and develop innovative teaching methods. The curriculum for teaching English should not only familiarize students with the national values of the country of a target language but also emphasize teaching English in a way that connects to their own national values. In this regard, adopting a regional approach can significantly enhance students' success in learning English. Incorporating a regional perspective fosters students' awareness of their local culture and identity, which should be encouraged as part of international communication.

The integration of a regional approach in language instruction enables students to gain a deeper understanding of both the significance of culture in the modern world and culture itself. It helps students feel more connected to their own culture, fosters tolerance, prepares them for cross-cultural dialogue, and enhances their ability to creatively represent their cultural identity.

Despite these benefits, the regional approach is not fully integrated into the English language teaching process at universities. As a result, students often struggle to communicate effectively in English about the unique aspects of their home region and native culture. They face difficulties in authentic communication because they are unable to express and share their individuality, which could otherwise connect them to global culture. Therefore, within the culturally diverse context of teaching English at universities, it becomes essential to develop students' communicative skills to ensure they can use English as a language of international communication.

The issue concerning a region is not a novel approach in Kazakhstani educational science. The works of 19th-century educators such as A. Kunanbayev, Sh. Ualikhanov, and Y. Altynsarin highlight issues related to native land, country, and folk education within the context of national education. A. Kunanbayev was able to educate the public with his songs and edifying words on values such as duty, debt, friendship, art, education, teaching, life's work, and morals. The thinker motivated young people to understand the importance of becoming decent citizens who serve their people with obedience — the "full man". He encouraged young people to learn a range of new trades and gave them advice on how to work morally for the sake of society.

Through his songs and words of wisdom, A. Kunanbayev taught the people about the noble examples of virtues such as responsibility, duty, friendship, art, education, teaching, hard work, and morality. The poet's intention was to instill in young people the values of being good citizens who serve their people with dedication — the concept of the "whole person," which inspired the thinker. He advised the youth to work honorably for the benefit of society and encouraged them to learn a variety of new skills.

K.K. Tokayev, the president of the Republic of Kazakhstan, advocated for raising Kazakh children as patriotic citizens of their country in his article "Abai and Kazakhstan in the 21st Century". His legacy was a school of patriotism, which serves as the foundation for respect toward his state. We must continue reading Abai's writings if we hope to cultivate an enlightened citizenry. Like Abai, we must love our people. Despite his criticism of his countrymen's shortcomings, the great poet made it his mission to guide his nation toward prosperity and greatness. Abai's rich legacy contributes to the formation of a new national consciousness among Kazakhs. His writings help instill a sense of patriotism and love for the nation, the people, and the land in all young Kazakhstanis [1]. It is crucial to instill in young people the core principles of Hakim Abai and make them guiding principles in their lives. He praised Abai's pedagogical conclusions within the context of enlightenment, stating, "This is one of the main steps in the modernization of the nation."

Each nation has its own way in raising children, according to M. Zhumabayev, who highlighted in his work "Pedagogy" that the ideas of ethnopedagogy and ethnopsychology are the primary variables that determine the aims, objectives, content, and principles of education and training. Teachers have a duty to teach children in the spirit of national traditions because they live and work among their people. He stated that "Every person has certain educational traditions, with the observance of which it is very important to enter the world community" [2]. In the research we conducted, M. Zhumabayev's pedagogical ideas emphasize the value of preserving national customs in young people's education.

The researchers also stressed how important it is to consider and utilize the opportunities of environment in the teaching process as much as feasible. When the topic was discovered to be both a product and a producer of the environment, the question of the educational potential of the surroundings was first seen as crucial. N.S. Gashkov cited in his article P.F. Kapterov's saying that "Pedagogical thought came to life, as if someone sprayed it with live water, new goals and paths emerged right away. The most significant issues surrounding public education were brought forward and added to the agenda" [3].

E.N. Bakurova in her article "Regional component in the content of teaching a foreign language" highlights that thanks to inclusion of regional approach students will be able to develop the ability to represent

their original culture by speakers of other cultures in a language they understand thanks to its introduction and the way the learning process is organized, which is impossible without knowledge of one's own cultural identity [4].

Many studies have been conducted regarding to the inclusion of the regional approach in the content of teaching English as the process of interaction between culture and personality. This reflects mastering the cultural heritage and culture of our days, awareness of one's own cultural identity and the ability to represent one's native culture with its regional specifics in dialogue with speakers of another culture. For example, researcher I. Cakir stated that notwithstanding divergent viewpoints, culture has gained significant attention in the field of foreign language instruction and acquisition. It is often acknowledged that language and culture serve as the primary means of expressing culture. Though "pure information" is helpful, it doesn't always result in learners gaining insight; on the other hand, those who are more culturally aware are able to think more critically. The most common complaint is that although students understand language rules to a large extent, they sometimes struggle to use the language appropriately because they don't know enough about their own culture [5].

Yusniawati and Y. Lestari considered the potential of using local cultural materials in EFL context. Using selected books, review articles and empirical research articles they draw conclusions about use of local culture-related materials in EFL classroom. Their theories suggest that teachers may help students attain English proficiency while opposing the dominance of English content in EFL instruction by incorporating items relating to the local culture [6].

Researcher H. Kaltsum noted that textbooks should contain local potentials with distinctive regional characteristics. He thinks that most of the textbooks contain general discourse and do not have specific characteristics and potential areas where English is taught. He created English textbooks with the local content. In their view incorporating local content in English language teaching will increase students' motivation to study and give opportunities to better understanding of their national values [7].

H.Y. Lu and C.W. Chien believe that local culture in the curriculum in an English Scenario Classroom influences the development of students' environmental and vocabulary knowledge. In their view integrating local culture elements into an English Scenario Classroom provide students with pertinent background information, and the curriculum's execution supported students' contextual learning. In addition, the issue-integrated curriculum is productive in the development of students' environmental knowledge [8].

Scholars Y. Oktarina and others emphasize the significance of including students' native culture elements in the reading materials. They believe that incorporating indigenous culture into English language teaching contribute both the development of students' awareness of their country and English language communication about their own culture. Moreover, these authors maintain the idea that incorporating local culture into readings helps students improve their reading skills [9].

Herdi and other scholars highlighted that the capacity of students to learn English with local culture in intensive course classes is greatly impacted by incorporating local culture into English language instruction. The students gained awareness of the importance of conserving their native culture in addition to learning a new language during the teaching and learning process [10].

Analysis of the sources related to the issue of the study provided explanation that it is important to realize the regional approach in the teaching process of English. The researchers of this study believe that in order to realize the regional approach in the teaching process one needs to know student's regional awareness and their attitude to inclusion of regional materials into teaching process of the English language.

Methods and Materials

The major empirical method was employed. Data were collected through a survey, and students' knowledge was assessed using tests. The aim of the experiment was to determine the efficiency of using a regional approach in teaching English. In the first stage of the experiment, students' attitudes toward using regional materials in teaching English were defined through a survey. First-year students from various universities in Kazakhstan participated in the survey. They were selected because English is taught in the first year of all majors at universities across Kazakhstan. A total of 171 students from eight universities participated in the survey. The survey was adapted from R. Perkins' *Cultural Awareness, Knowledge, Skills, and Attitude (CAKS and Attitude) Survey* [11]. It consisted of 13 questions and covered the questions about history, culture, famous people, etc. and students' attitude to inclusion of regional content into English teaching process. The survey was completed via Google form and distributed among the first-year students of universities.

After we collected these data, two groups of students were formed: an experimental group (EG) and control group (CG). The number of students in both the EG and CG was the same, with 32 students in each group. The experimental group students were majoring in Public Administration and the control group students were majoring in Energetics. The test designed to assess the regional knowledge of EG and CG students consisted of 30 closed test questions in English, covering regional content. The test questions were structured based on increasing levels of difficulty (10 easy questions, 10 medium-difficulty questions, and 10 difficult questions). Each test question had four answer options, with one correct answer to be selected. The test questions included information about historical monuments, cities, cultural landmarks, and other regionally significant information from various parts of the country.

In the formative stage of the experiment the CG students were taught according to the approved curriculum, with no changes made to the content of the course. In the teaching process of the EG, regional materials were integrated. This stage lasted two months. And in the third stage of the experiment the post tests were conducted and the results were compared with the results of the pre-test.

Results and discussions

Table 1 shows the number of participants from different universities enrolled in the survey.

T a b l e 1

Respondents' composition by universities

Universities	Number of students
L.N. Gumilyov Eurasian National University	85
M.H. Dulati Taraz Regional University	8
Khozha Akhmet Yassawi International Kazakh-Turkish University	28
A. Baitursinov Kostanay Regional University	6
O.A. Baikonurov Zhezkazgan University	12
E.A. Buketov Karagandy State University	5
Korkyt ata Kzylorda University	27
Overall	171

Table 2 demonstrates the educational progammes of respondents.

T a b l e 2

Respondents' educational programmes

Educational programmes	Number of respondents
Physics teacher	8
Mathematics teacher	8
ICT teacher	15
Pedagogy	13
Accounting and Audit	8
Public Administration	32
Metallurgy	13

Educational programmes	Number of respondents
Management	14
Civil Construction	15
Energetics	32
Transport	13
Overall	171

The information in the table shows that respondents' educational programmes are diverse. The results of respondents' answers to the questions "What is your attitude to regional culture and history" are given in Table 3.

T a b l e   3

Respondents' answers

Regional culture	Results (in %)	Regional history	Results (in %)
I am not interested.	3.5 %	I am indifferent.	2.3%
I am indifferent.	4.1%	I am not interested.	3.5%
I am highly interested.	25.7%	I am highly interested.	24%
I always develop my knowledge in the regional culture	26.9%	I get experience from it.	25.8%
I respect regional culture	39.8%	I respect regional history.	44.4%

From this table it can be observed that students respect regional culture (39.8 %) and regional history (44.4%). Only 3.5% of students are not interested both in regional culture and regional history. Approximately similar responses we received for students' high interest in regional culture (25.7%) and regional history (24%). These data make us possible to draw the conclusion that students are interested in regional culture and history and they are eager to increase their regional knowledge in these fields. Figure 1 demonstrates the answers for the question "What is a region for you?"
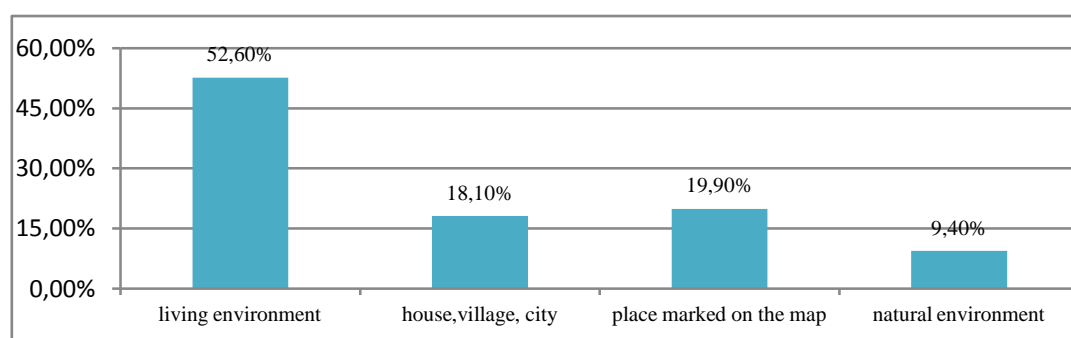
Figure 1. Respondents' answers

The data show that more than half of students (52.6 %) think that it is a living environment. In these answers, "living environment" refers to the broader regional setting, while "house", "village", and "city" represent specific types of spaces where people reside and engage with one another. Only 9.4 % of students consider the region as a natural environment. 18.10% of students suppose that it is a house, a village or a city

and 19.9 % of them think it is a place marked in the map. From these results we can conclude that most respondents accept a region as a living environment and connect it with their life.

The next figures show the answers for the questions "What is regional knowledge for you?" and "Where do you take the regional knowledge?" (Fig. 2, 3)
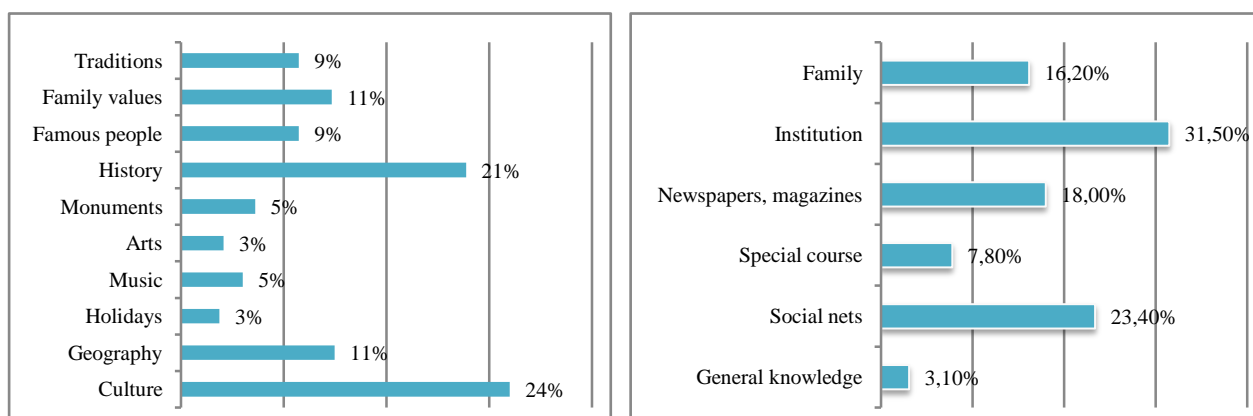
Figure 2. What is the regional knowledge for you? Figure 3. Where do you get the regional knowledge?

From Figure 2 it is obvious that approximately one quarter of respondents think that regional knowledge is historical or cultural knowledge. Only 2.8% of respondents believe that it is holidays and 3.1% think that it is arts. 11% of them consider regional knowledge as family values and other 11 % think that it is geography 8.6 % think that it is traditions and famous people.

31.5 % of students think that they get regional knowledge from educational institutions. Then 23.4% say that they receive it from social nets and from 18 % to 16.2 % think that they acquire it from newspapers and family.

From these results we suppose that most students connect regional knowledge with local history and culture. Moreover, most students think that they accumulate regional knowledge from their studies at universities.

Figure 4 illustrates the answers for the question "How do you feel about discussing regional issues in the lessons?"
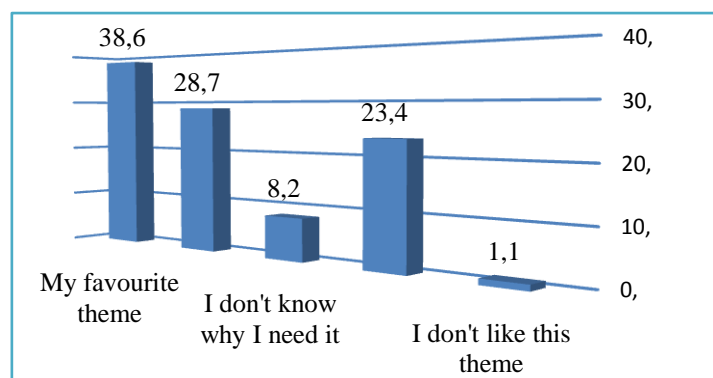
Figure 4. Discussing regional issues in English lessons

From these results we could observe that more than a third of the respondents (38.6%) answered that regional content is their favorite theme and 28.7 % of the respondents think that this should be one of the favorite themes. However, there were respondents (8.2%) who don't know why they need it and 1.1 % of them do not like this theme.

The following figure demonstrates the information about the respondents' opinions on the positive sides of regional knowledge in English teaching process. (Fig. 5)
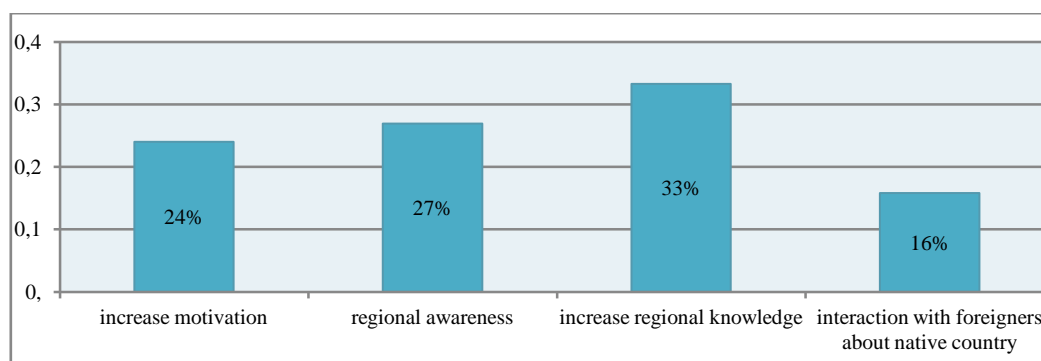
Figure 5. Positive sides of regional knowledge

In these responses, "regional awareness" and "regional knowledge" refer to distinct concepts. Regional knowledge encompasses factual information about a specific region, such as its geography, history, culture, traditions, economy, and demographics. Regional awareness goes beyond knowledge, incorporating sensitivity, respect, and the ability to navigate regional differences appropriately. The data demonstrate that 24 % of respondents answered that regional knowledge increases motivation, it develops regional awareness (26.9 %), it increases regional knowledge 33.3 % and they can talk about their country with people from other countries 15.8 %.

Figure 6 presents information about the challenges respondents may face when engaging with regional content.
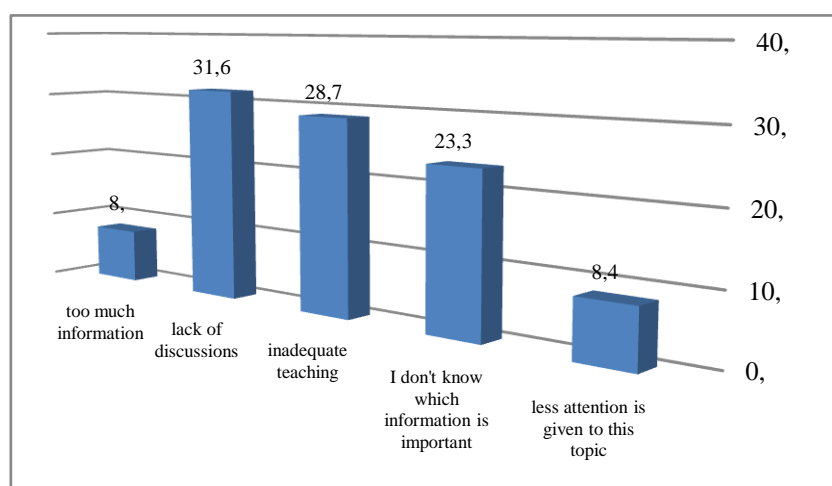
Figure 6. Challenges faced by respondents in engaging with regional content

The data illustrate that a lack of discussions and inadequate teaching are common problems students face when engaging with regional content. Additionally, 8% of respondents believe there is too much information, while 8.4% feel that this topic receives insufficient attention.

According to the conducted survey, the majority of respondents view the area as their home's secondary regional education system, as well as its regional culture and history. The majority of respondents stated that they get regional knowledge from educational institutions, and that they adore discussing regional concerns in class. This suggests, in our opinion, that the respondents would prefer that the classes include content from the locality. The majority of respondents would like to have broad knowledge about the area and their future profession. In response to inquiries about the benefits of regional education, how it impacts their development, they responded that regional approach raises regional awareness and education. This indicates that respondents think regional knowledge is important and will help them in their future careers. Lack of adequate training and discussions on the subject are noted by respondents as challenges in working with regional materials.

The regional materials presented to the EG students covered regional historical, geographical, and cultural content about five regions of Kazakhstan (southern, western, central, eastern, and northern) across five chapters. The materials were sourced from Sacred Kazakhstan [13], National Sacred Sites of Kazakhstan [14], and other books, organized and compiled according to the requirements for preparing educational materials. These materials were processed, taking into account the necessary standards, and then translated into English. A total of 34 reading texts and 15 listening texts were provided to students, accompanied by pre-, while-, and post-learning activities. Table 4 provides some of the topics covered by the regional materials.

T a b l e 4

Regional materials topics

Topics	Reading materials	Listening materials	Topics in the curriculum
Welcome to Central Kazakhstan! The picturesque mountains of Central Kazakhstan	Bektau Ata, Karkaraly – the legend of the steppe mountain	Edyge Peak	Cultural and historical basis
Historical complexes in Central Kazakhstan	Alzhir, Karlag complexes	Zhuban Ana Mausoleum	Art, Music, Literature
Worth-seeing lakes	Lake Balkhash, Lake Korgalzhyn	Shaitankol	Art, Music, Literature
Welcome to Eastern Kazakhstan!	Amazing places in the East Lake Markakol, Mount Muztau	Lake Alakol	Education
Historical sites in the East	Berel Complex, Shilikti Complex	Akbauyr Complex	Education
A trip to historical sites	Konyr Aulie Cave, Kazy Korpesh Baiyan Sulu Mausoleum	Zhidabai-Borili Abai Historical and Cultural Complex	My profession

Although the regional topics we proposed do not exactly match the topics in the curriculum, we can see that the gap between them is not significant. Therefore, the materials we suggested enhanced the teaching content and provided an opportunity to improve the regional knowledge and language skills of the EG group students. Additionally, since this is a "Foreign Language" course, our goal was not only to improve students' regional knowledge but also to expand their vocabulary in English through regional materials, as well as to help them learn to analyze topics based on regional content. As a result, new words or phrases in English were italicized in each regional text, and a series of exercises was suggested to help students master them.

The test results were measured using a ratio scale, which is commonly applied in pedagogical research to evaluate correct and incorrect responses [12]. Each correctly answered easy question was awarded 2 points, each medium question 3 points, and each difficult question 5 points, with a total possible score of 100.

Thus, the data obtained were converted from a ratio scale to an ordinal scale, as an ordinal scale assigns levels to the measured objects. Thus, the levels of students' regional knowledge were determined on the basis of the following scale:

Less than 40: low level

41–70: medium level

71–100: high level

The initial results of the regional knowledge of EG and CG students are presented in Table 5.

The results of the regional knowledge of EG and CG students

Groups	Indicator	Levels			Overall
		Low	**Medium**	**High**	
EG	Numerical	13	18	1	32
	%	40.63	56.25	3.12	100
CG	Numerical	14	17	1	32
	%	43.75	53.13	3.12	100

From the above data, we could conclude that more than half of the students have medium-level regional knowledge: 56.25% in EG and 53.13% in CG. Fewer than half of the students have low regional knowledge: 40.63% in EG and 43.75% in CG. The number of students with high-level regional knowledge is just one in each group, making up 3.12%. Based on the methodology applied, we conclude that greater attention should be given to students' regional knowledge during the formative stage of the experiment.

The tasks for learning new words and phrases included matching the words with their synonyms, antonyms, and definitions, creating a glossary with new words, forming sentences using the given words, constructing sentences by arranging the given words, creating crosswords and word searches from the words, and so on.

After our intervention, we conducted the test with students from both the EG and CG again. The test results at the beginning and end of the experiment are presented in Table 6.

The levels of regional knowledge of EG and CG students at the beginning and end of the experiment

Groups	Indicators	Period	Levels			Total
			low	**medium**	**high**	
EG	numerical	beginning	13	18	1	32
	%		40.63	56.25	3.12	100
	numerical	end	8	22	2	32
	%		25	68.76	6.24	100
CG	numerical	beginning	14	17	1	32
	%		43,75	53.13	3,12	100
	numerical	end	13	18	1	32
	%		40.62	56.26	3.12	100

According to the results obtained, we observed the dynamics of change in the knowledge of the EG students. Before the experiment, the share of students with low level was 40.63%, and after the formative experiment, it decreased by 25%. Conversely, the number of students with medium-level knowledge increased from 56.25% to 68.76%. The number of students with high-level knowledge rose from 3.12% to 6.24%, which corresponds to an increase of one student.

The results of the regional knowledge test for EG and CG students were processed using SPSS software and compared using the T-value. The independent samples test information is provided in Table 7.

Independent Samples Test

Groups			Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	upper	lower
CG	Equal variances assumed	Equal variances assumed	,709	,403	-,503	62	,617	-1,063	2,113	-5,286	3,161
	Equal variances not assumed	Equal variances not assumed	-	-	-,503	61,972	,617	-1,063	2,113	-5,286	3,161
EG	Equal variances assumed	Equal variances assumed	,073	,788	4,510	62	,000	7,906	1,753	4,402	11,410
	Equal variances not assumed	Equal variances not assumed	-	-	4,510	61,478	,000	7,906	1,753	4,402	11,411

The data represent the results of an independent samples t-test for two groups: CG (Control Group) and EG (Experimental Group). According to the results in CG the difference in means is not statistically significant, as indicated by the p-value of 0.617 and the confidence interval that includes zero. In EG the difference in means is statistically significant, as indicated by the p-value of 0.000 and the confidence interval that does not include zero. Thus, the intervention had a significant impact on the EG group, but not on the CG group.

Our findings indicate that incorporating regional materials not only broadens students' understanding of the region but also significantly benefits their language skills when applied in English lessons. Additionally, integrating region-focused content makes learning more engaging and contextually relevant, promoting both cultural awareness and language development. Activities such as reading, listening, and discussing regional topics encourage students to build critical thinking and communication skills in English, creating a more comprehensive and enriching educational experience. This research made it possible to give the following recommendations:

1. To select, systematize and construct the regional materials in order to use them in English classes.

2. Different effective methods and techniques should be utilized for incorporating regional content into English lessons at universities.

Conclusion

The paper presented the results of the study on regional approach in English teaching process at universities. Realization of the regional approach in the content of foreign language teaching is dictated by the desire to bring the learning process closer to reality. The conducted research emphasizes the significant role of regional content in students' education. While some express concerns about information overload, the majority of respondents support incorporating local topics into educational materials. They believe such integration is valuable for expanding their knowledge and skills, particularly in relation to their future professional endeavors. However, challenges such as inadequate discussion opportunities and insufficient teacher training need to be addressed to enhance the effectiveness of utilizing regional materials in the educational process. These issues require focused attention to ensure better implementation and overall educational improvement.

Our findings highlight the positive impact of incorporating regional materials into the educational process, particularly in language learning. By integrating local topics into English lessons, students not only

deepen their understanding of the region but also enhance their language skills. Regional approach implies, on the one hand, the knowledge of students about their region, and, on the other hand, it is the knowledge about the country of the target language. It is feasible to familiarize students with the facts of the native country and the cultures of the countries of the target language in comparison to one another through the proper selection of subject content [15].

This approach enables students to develop a deeper understanding of cultural features and differences, thereby fostering intercultural competence. Integrating a regional component into the educational process not only increases students' interest in the language being studied but also enhances their ability to apply the acquired knowledge in professional and everyday contexts.

For the effective implementation of the regional approach, it is important to consider aspects such as adapting educational materials to the specific characteristics of the region, using local texts that reflect the cultural, historical, and social features of the area, and including tasks in the curriculum that encourage students to conduct comparative analyses. Thus, the regional approach to teaching English promotes the integration of local context into the learning process, making it more relevant, engaging, and practically meaningful for students.

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Ағылшын тілін оқытудағы аймақтық тәсіл

Мақалада университеттерде ағылшын тілін оқыту үдерісінде аймақтық тәсілді жүзеге асыру бойынша зерттеу нәтижелері көрсетілген. Аймақтық тәсіл кез келген аймақтың лайықты өкілі ретінде студентті жеке тұлға ретінде қалыптастыруға ықпал етеді. Шет тілін оқытуда аймақтық тәсілді жүзеге асыру студенттерге өз елінің мәдени құндылықтарымен танысуға көмектеседі, бұл қазіргі заманғы тұлғаның үйлесімді дамуы үшін қажет. Сонымен қатар, ағылшын тілін оқыту үдерісінде аймақтық тәсілді жүзеге асыру студенттерге жекелеген тілдік құбылыстар мен мәдени құндылықтарды жақсы түсінуге және игеруге ғана емес, сонымен қатар студенттерді өз аймағындағы кәсіби қызметіне дайындауға мүмкіндік береді. Зерттеудің мақсаты студенттердің аймақтық хабардарлығын зерттеу және ағылшын тілін оқытуда аймақтық материалдарды пайдаланудың тиімділігін бағалау. Зерттеу нәтижелері көрсеткендей, студенттердің көпшілігі оқу процесіне аймақтық контентті енгізу қажеттілігін түсінеді, ал аймақтық материалдар тілдік дағдыларды дамытуға ықпал етеді. Қорытындыда мақала авторлары ағылшын тілін оқытуда аймақтық тәсілді жүзеге асыруға көмектесетін ұсыныстар берген.

Кілт сөздер: аймақтық тәсіл, оқыту, ағылшын тілі, мәдениет, ұлттық құндылықтар, аймақтық хабардарлық, өзара байланыс, университет.

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Региональный подход в обучении английскому языку

Статья посвящена результатам исследования по реализации регионального подхода в процессе обучения английскому языку в университетах. Региональный подход способствует формированию личности студента как достойного представителя определенного региона. Реализация регионального подхода в преподавании иностранного языка может помочь студентам познакомиться с культурными ценностями своей собственной страны, что необходимо для гармоничного развития современной личности. Кроме того, реализация регионального подхода в процессе преподавания английского языка позволяет студентам не только лучше понимать и усваивать отдельные языковые явления и культурные реалии, но и готовить студентов к их профессиональной деятельности в своем регионе. Целью данного исследования является изучение региональной осведомленности студентов и оценка эффективности использования региональных материалов в преподавании английского языка. Эксперимент был проведен с целью определить, может ли осведомленность о региональных материалах в преподавании английского языка способствовать улучшению языковых навыков у студентов. Результаты эксперимента показали, что большинство студентов понимают необходимость включения регионального контента в процесс обучения, а региональные материалы способствуют развитию языковых навыков. В заключении авторы статьи дают рекомендации, которые помогут реализовать региональный подход в преподавании английского языка.

Ключевые слова: региональный подход, обучение, английский язык, культура, национальные ценности, региональная осведомленность, отношение, университет.

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EFL students' motivation and its relatedness with their academic performance

The purpose of this study was to identify factors that motivate EFL teachers to acquire knowledge, as well as the connection between these motives and academic performance. Prospective first-year EFL teachers studying after school and college took part in this experiment. Each participant filled out a questionnaire in *Google Forms* where they ranked motives for learning activities in order of importance. Then the results were analyzed with an independent t-test analysis. At the end of the semester, students passed an exam in the course "Introduction to Linguistics" and based on the exam results, it was determined whether there was a relatedness between motives and students' academic performance. The results showed that student motivation is related to students' academic performance. It was found that the highest motive among post-secondary students is the motive "everyone is studying, and so am I" (8.32), second place is "I don't want to let the group down" (8.15), third place is "this is what my parents wanted" (7.97). In technical and vocational education groups the leading place is occupied by the motive "avoiding complaints" (8.17), the next motive is "everyone is learning and so am I" (7.77), "I don't want to let the group down" (7.62).

Keywords: EFL teacher's motivation, academic performance, academic achievements, student success, motive, motivational theories, motivational processes, higher education.

Introduction

Motivation is a vital factor for achieving academic success. Currently, a significant amount of research is being conducted to study student motivation from the point of view of sociology, psychology, linguistics, etc. In the present study, motivation is considered from the perspective of psychology, since the study is aimed at identifying the motives of educational activities, which will help teachers find out students' attitudes to learning, motives, and also identify their connection with academic performance. According to Harmer [1] motivation is "some kind of internal drive which pushes someone to do things in order to achieve something". Brown [2; 152] defines motivation as a term that is used to define the success or the failure of any complex task. Ryan and Deci [3] argue that motivation is the urge to do something. According to other studies [4, 5], the presence of motivation indicates an interest in acquiring knowledge. Analysis of this concept allows us to conclude that motivation is an integral factor for achieving academic success.

Scientists distinguish two main types of motivation: intrinsic and extrinsic. Intrinsic motivation is characterized by the pursuit of satisfaction derived from engaging in activities, whereas extrinsic motivation is focused on performing actions to achieve specific goals. For instance, students driven by intrinsic motivation find enjoyment in studying for its own sake, rather than for the purpose of attaining good grades. Conversely, students with extrinsic motivation study primarily to achieve high grades. Research has explored the relationship between intrinsic motivation and learning effectiveness, consistently finding that intrinsic motivation positively influences students' learning outcomes. However, there is no consensus regarding the impact of extrinsic motivation on learning effectiveness; some studies indicate that extrinsic motives can lead to high performance, while others link them to increased psychological stress. In this study, we will examine the motivations that guide students in their pursuit of knowledge [6].

It should also be noted that there are motivational theories that are directly related to the psychological, social and cultural aspects of activity. Scholars argue that theories fall into three main categories: content theories, process theories, and modern theories [7], which build on earlier theories of motivation. These include Maslow's hierarchy of needs, Herzberg's theory of motivation and hygiene, and V. Vroom's theory of expectations. According to Maslow, every person has five different levels of needs (physiological needs, safety, love and belonging, esteem needs, the need to be unique, self-esteem, self-actualization). The essence of this theory is that the satisfaction of one need leads to the desire and ability to achieve the next need [8]. Herzberg's theory of motivation and hygiene is aimed at identifying factors that contribute to satisfaction and dissatisfaction with work and communication [9]. Vroom considers motivation as a process of managing the

choice and predicting people's behavior [10]. Process theories study the causes of motivation and the ways of achieving satisfaction (Porter-Lawler's model). Contemporary theories of motivation include theories of equity, control, and agency, as well as theories of goal setting, reinforcement, and job design. According to Badubi R.M. et al. [11] to achieve a result, it is necessary to combine content theories and process theories. Modern dominant social-cognitive theories include achievement goal theory and expectancy-value models [12].

For example, Pintrich [13] contended that expectancy-value models have oriented on the role of individuals' expectations of success and task-values, and their relation to future performance and achievement-related decisions but have not examined how these variables might be related to goals. On the other hand, achievement goal theory has not taken into account the possibility that goals function differently at different task values. Accordingly, researchers may be able to comprehend motivational processes in a way that is not entirely captured by a single perspective through the combination of expectancy-value and achievement goal theories. According to achievement goal theory, there are two primary reasons why people participate in different achievement activities, and these reasons impact how they perceive and respond to events connected to achievement. These justifications apply to performance goals, which center on proving or validating competence in relation to others, and mastery goals, which center on learning and the development of competences [14]. Knowledge of these theories allows us to better understand the factors and aspects that influence student motivation.

In recent years, research on student motivation and its impact on academic performance has become a prominent area of study. However, studies focusing on the motivational factors of future EFL teachers in a specific context remain rare. Unlike previous works that mainly examine student motivation in different educational settings or generalize motivation theories across disciplines, this study focuses on prospective EFL teachers in Kazakhstan.

Understanding this niche adds depth to the existing literature and acknowledges the cultural and contextual factors that influence prospective teachers' motivation in the Kazakhstani educational landscape. The study not only seeks to explore current motivations, but also lays the foundation for future research by identifying gaps and suggesting new avenues for understanding teacher motivation.

The relevance of the study lies in its unique contribution to the existing body of literature examining student motivation and academic performance by focusing on the motivation of prospective EFL teachers in Kazakhstan. Identifying the motivations of future teachers' educational activities will help create more effective conditions for better learning.

This study attempts to provide a critical review of research on future teachers' motivation in order to respond to ongoing challenges and lay the foundation for future research. Acquiring this knowledge will lead EFL teachers to greater awareness of the specifics of their professional activities, satisfaction with it, and the ability to competently teach the younger generation.

Therefore, the aim of the study is to examine the motivations of future EFL teachers' educational activities and identify the relationship between motivations and student achievement. The results will have direct implications for educational policy and practice, providing information on how best to create a supportive environment for future EFL teachers. Identifying specific motivations and their relationship with student outcomes can lead to targeted professional development initiatives that will improve both teacher satisfaction and student achievement. The novelty of this study lies in its focused examination of prospective EFL teachers' motivation in a specific cultural context, an aspect that remains critically under-explored in the current academic discourse.

Literature review on investigating students' academic achievements.

Academic achievement is a complex process influenced by a variety of factors that interact differently in the educational environment. Researchers and educators are constantly researching the factors that influence student achievement. Among them, socioeconomic status, family involvement, quality of instruction, and student engagement affect academic performance.

One of the important areas of research focuses on the impact of socioeconomic status on academic achievement. Studies conducted by several scholars Tahir, T., et al. have found a correlation between socioeconomic status and academic achievement, emphasizing that students from families with higher SES tend to have more opportunities and resources respectively higher academic performance [15, 16].

Family involvement is also vital factor influencing students' academic success. The results of the study by Wilder, S. [17] indicate that active parental involvement contributes to creating of a positive learning environment and increases motivation to learn. However, it was noted that parental expectations of their children's academic achievement have a more positive influence than parental help doing homework.

The instructor's experience also affects student achievement. Research confirms that teacher qualifications, teaching methods, teacher feedback, and teacher-student relationships are important elements in achieving high student achievement [18]. Student engagement is a fundamental component of academic success. Lei, H., Cui, Y., & Zhou, W. found a strong relationship between behavioral, emotional, and cognitive engagement of learners. Their study shows that actively engaged students perform better academically, which is also influenced by the method of engagement reporting, gender, and cultural values [19].

Peer relationships also play an important role in students' socialization and academic performance. Wang, M. T., Kiuru, N., Degol, J.L., & Salmela-Aro, K. [20] investigated the influence of peers on adolescents' academic engagement. Emotional, cognitive and behavioral aspects were studied, the analysis showed that one of the important factors is the students' involvement in school, the more interaction with peers occurs, the greater influence it has on the aspects studied and academic achievement. Positive interaction with peers with high academic performance has a favorable effect on students and increases their motivation to study as they strive to meet the standards of friends.

Simões S., Oliveira T., & Nunes C. [21] studied the usefulness of computers in education and found that students who use them for entertainment have lower grades compared to students who use them for educational purposes. The scientists also found that computers hurt the social factor as students become less sociable. Students from small families are more prone to this factor. Peng P. and Rogier A. Kievit [22] observed the connection of cognitive abilities and academic achievements and came to the conclusion that direct academic instructions have a positive effect on academic performance in comparison with intensive short-term cognitive training.

Another research made by Gustems-Carnicer J., Calderón C., & Calderón-Garrido D. [23] revealed the relationship between stress and academic achievements in Iranian university. Their experiment showed that students experience different types of stress during their studies, which leads to poor academic performance. Students who sought psychological help and applied strategies to reduce stress levels had good academic performance, unlike students who avoided or ignored the problem of stress.

Thus, the literature review revealed a multifaceted relationship between student academic achievement and various factors including socioeconomic status, family involvement, teaching quality, student engagement, peer relationships, technology, and stress. All of the factors examined have a strong relationship with student academic achievement, some to a greater extent, some to a lesser extent. In our paper, we will explore the relationship between motivation and academic performance, what motivates students to achieve high academic performance.

Research questions:
(1) Are the motives of post-secondary and TVET students the same?
(2) Do motives influence student academic performance?

Methods and materials

In the process of working on the study, the following methods were used: analysis of Kazakh and foreign literature on the research topic, questionnaire, analysis and synthesis of the data obtained.

Post-secondary students (148 students) and TVET students (40 students), majoring in languages took part in the experiment at a selected university in Kazakhstan during one semester. The study examines the motives of educational activities on the questionnaire adapted by M.M. Kalashnikova, V.N. Kosyrev, O.V. Shchekochikhin. The Google Forms questionnaire included 12 motives for educational activities, which students ranked in order of perceived effectiveness, with the most important motive listed first. The proposed motives reflected both intrinsic and extrinsic types of motivation. The questionnaire was originally compiled in Russian to ensure better understanding of the research topic; the results were later translated into English for publication.

We focused on first-year students since lack of motivation can lead to dissatisfaction with their future profession, change of profession or student dropout. The earlier determination of students' interest is useful for lesson design and active involvement.

The experiment was held on the "Introduction to linguistics" course. It featured a well-structured format, comprising one lecture and one practical lesson each week. Lectures utilized a problem-solving and discussion-oriented approach, encouraging active participation and engagement among students. This interactive format facilitated deeper understanding of linguistic concepts, allowing learners to explore various theories and applications in a collaborative environment. The practical lessons provided opportunities for hands-on experience, reinforcing the knowledge gained in lectures. Overall, this course design fostered critical

thinking and effective communication skills, essential for comprehending the complexities of language and its role in human interaction. Students left equipped with valuable insights into the field of linguistics.

Data gathered was analyzed using an independent t-test analysis (t-test), at the level of 0.05 significance to determine the effectiveness of the training on the dependent variable (student motivation). The results were reflected in tables for visualization. This analysis allows us to determine a statistically significant relationship between students' motivation levels and their academic performance for two independent samples. For this purpose, we compared the mean scores of these two parameters for PS and TVET students.

The author also analyzed the exam results and their relatedness with motives and academic performance. The examination was conducted orally. Students chose a ticket consisting of three questions on the course material covered.

Student participation in the study was voluntary, students were informed about the purpose of the study and the anonymity of the data obtained.

Results and discussion

The Table 1 data shows that post-secondary students and TVET students have a slight difference in indicators by motives. However, there is a difference in their ranking. The independent t-test of PS students sample as indicated in Table 1 has shown that the first place among the motives is occupied by the motive "everyone is studying, and so am I", where the mean score was 8.32 (SD=3.06), in second place is "I don't want to let the group down" (Mean=8.15; SD=3.25), in third place is "this is what my parents wanted" (Mean=7.97; SD=3.29). In TVET group the leading place is occupied by the motive "avoid complaints" (Mean=8.17; SD=3.06), the next motive is "everyone is studying, and so am I" (Mean=7.77; SD=3.36), "I don't want to let the group down" (Mean=7.62; SD=3.62), in last place for both groups are "I want to become a good teacher" (PS Mean=4.52; SD=3.35; TVET Mean= 4.92; SD=3.66) and "to achieve complete and deep knowledge" (PS Mean= 3.92; SD=3.04; TVET Mean=4.67; SD=3.32). These indicators show an unconscious choice of profession and unawareness of the importance of the future profession; students do not have a sufficient level of internal motivation to acquire a future profession. Basically, students are guided by their environment and the desire not to be worse than others, which indicates external motivation.

T a b l e   1

Results of motives for educational activities

Motives for educational activities	Ranking place of motive among PS students		Ranking place of motive among TVET students	
	Number of students	Mean score (Standard deviation)	Number of students	Mean score (Standard deviation)
1	2	3	4	5
My duty obliges me to do this	148	6.68 (3.26)	40	6.2 (3.46)
To achieve complete and deep knowledge	148	3.92 (3.04)	40	4.67 (3.32)
I don't want to let the group down	148	8.15 (3.25)	40	7.62 (3.62)
I like getting good grades	148	5.38 (3.03)	40	5.07 (3.25)
I want to become a good teacher	148	4.52 (3.35)	40	4.92 (3.66)
To avoid complaints	148	7.73 (2.75)	40	8.17 (3.06)
I don't want to be worse than others	148	6.73 (3.19)	40	6.67 (2.48)
This is what my parents wanted	148	7.97 (3.29)	40	6.65 (3.45)

1	2	3	4	5
Like being a student	148	6.59 (3.01)	40	6.5 (3.39)
Higher education diploma required	148	4.92 (3.47)	40	5.12 (3.67)
Everyone is learning and so am I	148	8.32 (3.06)	40	7.77 (3.36)
Just wondering	148	7.11 (3.40)	40	6.92 (3.87)

The second research question is the existence of relatedness between the motives of educational activities and students' academic performance. To analyze this aspect, the author took the results of the exam in the course "Introduction to Linguistics."

The results in Table 2 have shown the mean and standard deviation in exam results. The participants in TVET group (Mean=86.15; SD=7.67) and PS group (Mean=80.02; SD=10.86) have a good level of academic performance. This implies that students of both groups succeeded in their studying, which is proven by the mean score.

Table 2

Exam results in the course "Introduction to Linguistics"

PS students		TVET students	
Number of students	**Mean score (Standard deviation)**	**Number of students**	**Mean score (Standard deviation)**
148	80.02 (10.86)	40	86.15 (7.67)

Table 3

Summary of the Pearson correlation analysis

Group	Mean score of motivation	Mean score of the exam
PS	3.2	80
TVET	3.8	86

The Table 3 data shows that TVET students have higher average motivation scores (3.8) compared to PS students (3.2). Similarly, TVET students also have higher average examination scores (86) compared to PS students (80).

The correlation analysis confirms the positive correlation between motivation and academic performance. The Pearson correlation coefficient is 0.45, indicating a moderate positive relationship. The figure shows that as students' motivation increases, their academic performance tends to increase.

Figure 1. The Pearson correlation analysis

These results suggest that students with higher motivation scores tend to have higher examination scores. This highlights the importance of motivation in students' academic success and points to the need to encourage and maintain motivation among students to improve their learning outcomes.

This study was conducted to compare the motives of post-secondary students and TVET students, as well as to identify the relatedness between motives and students' academic performance. The result of the study shows that students of both groups do not fully understand the importance of their future profession. In other words, the main motives of students are external factors rather than internal ones. The results also attested to the fact that external motivation has a positive effect on students' academic achievements just like internal motivation. This finding therefore upholds previous studies.

The influence of internal motivation has been studied by many scientists and it has been proven that it has a long-term positive effect, any activity is performed with pleasure and desire, while external motivation depends on achieving a result that is separate from the action itself. For example, a student may study diligently to attain a high GPA. However, not all forms of external motivation are the same. They differ in degree and autonomy, i.e., motivation can come from an internal perceived locus of causality and a sense of personal will. Therefore, even if an activity is driven by external motivation, it can be internally regulated rather than externally controlled [24].

Researchers in Indonesia explored the connection between mindfulness, academic motivation, and academic performance in students studying English as a foreign language. Their empirical study revealed that mindfulness positively influences both motivation and academic outcomes. Students exhibiting higher levels of mindfulness demonstrated greater academic motivation, which correlates directly with improved academic performance. The authors propose that fostering mindfulness practices in educational settings could enhance student engagement and overall academic success [25].

A comparable study on the impact of intrinsic and extrinsic motivation on academic achievements, as well as the multiplier effects of motivation was caried out by Chinese scientists. The study discovered that individuals with high levels of intrinsic motivation performed worse academically when exposed to extrinsic motivation. On the other hand, extrinsic motivation improved academic achievements for students with poor intrinsic motivation [26]. So, the Chinese, Indonesian and our own research show that both types of motivation have positive effect on students' academic performance.

A possible reason of obtained results of our research may be that students are studying in their first year and are still going through the stage of adaptation to new conditions and requirements at the university. According to earlier research, "adult approval" and "peer approval" belong to important factors in diverse societies that determine the way students do academically [27, 28]. Fuligni [29; 61] noted that "sense of obligation to the family" influences students' inspiration. A number of studies show that motivational factors influence students' academic performance. For example, Zeynali S., Pishghadam R., Fatemi A.H. [30] examined the motivational and demotivational factors that influence academic performance in teaching English as a foreign language. Scientists have identified five variables: demotivation/motivation, collective/individual, perfectionist/non-perfectionist, intrinsic/extrinsic, and cooperative/competitive; they established that these variables correlate with each other and require the formation of abilities and leaving the comfort zone.

Ekiz S., Kulmetov Z. [31] studied parental, environmental, and teacher's attitude-related factors influencing students' motivation in the process of learning English. They found that parental support, strengthening student beliefs, and a supportive learning environment increased motivation. According to Khalifa, Mahmoud [32] and Al Hasani and Wilkins [33] student satisfaction and a HEI's service quality are strongly and directly correlated. Students who are happy with their university experience will enjoy their time there, go more frequently, and be more motivated to support and participate in university life.

Thus, one of the key elements influencing academic success is the environment. Factors such as approval of adults and peers, family support, teacher's belief in the student, and students' satisfaction with higher education institutions significantly increase motivation and engagement. Understanding these dynamics is necessary to create a favorable learning environment that promotes academic success among students.

The second research question identified the relatedness between motives and students' academic performance. Nowadays researchers and organizations like Organization for Economic Co-operation and Development (OECD) and PISA pay a great attention to social and emotional factors as indicators of student well-being and psychological development. According to a study by York T., Gibson C. and Rankin S. [34], academic performance or success is measured in grades obtained and the GPAs. Yurtseven N., Bülent A., Karataş H. [35] investigated this topic and concluded that academic performance in an English course is influenced by autonomy and relatedness, which are among the components of motivational orientation and basic psychological needs, competence and interest in mastering a foreign language. Betoret and Artiga [36] found that satisfaction of basic psychological needs has a positive impact on motivation to learn. Therefore, the interaction between teacher and student is one of the key factors in creating a motivational climate in the classroom. The teacher's interest and enthusiasm for his subject can develop the students' interest and even develop a high level of intrinsic motivation. The teacher leading the classes should be aware of the students' motivation levels and design the curriculum to promote active engagement in the learning process, as student involvement significantly enhances academic success. Moreover, providing constructive and timely feedback helps students better understand their progress and evaluate possible ways to improve their learning. An interested student is likely to persist in their studies, even when faced with challenging tasks, and derives personal value from the learning experience. An analysis of works on the study of motivation, as well as the conducted research, confirm the opinion that the academic performance of students is influenced by motivational factors, basic psychological needs, and environment. The motives chosen by the students indicate that external motives, as well as internal ones, have a positive result on the academic performance of students. However, internal motivation is more effective and enduring in the long-term.

Conclusion

In conclusion, this study was aimed at studying the relatedness between the motivation of EFL teachers (PS and TVET) and academic performance. The pedagogical experiment revealed a clear connection between motivation and academic outcomes. Notably, the primary motivational drivers among post-secondary students included a desire not to fall behind their peers and parental expectations, while TVET participants specifically cited a need to avoid complaints alongside similar peer pressures. This indicates that external factors predominantly shape educational motivations in both groups.

Looking ahead, it is crucial to delve deeper into the nuances of teacher motivation, particularly on how it impacts student learning over time. Future research should investigate not only the existing motivations but also the mechanisms through which internal motivation can be developed among educators. By fostering intrinsic motivation, which tends to produce more sustainable and effective educational outcomes, stakeholders can enhance the overall quality of instruction and student success in EFL settings. Understanding these dynamics will be essential for implementing strategies that cultivate a more engaged educational environment, ultimately leading to improved academic performances across the board.

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Ж.М. Сагитова

Болашақ ағылшын тілі мұғалімдерінің мотивациясы және оның академиялық нәтижелермен байланысы

Зерттеудің мақсаты болашақ ағылшын тілі мұғалімдерін білім алуға ынталандыратын факторларды, сонымен қатар осы мотивтер мен оқу үлгерімі арасындағы байланысты анықтау. Экспериментке мектеп пен колледжде бірінші курста оқитын болашақ ағылшын тілі мұғалімдері қатысты. Әрбір қатысушы *Google Forms*-те сауалнаманы толтырды, онда оқу әрекеттерінің мотивтерін маңыздылығына қарай орналастырды. Содан кейін нәтижелер t-Стьюдента тесті арқылы талданды. Семестр соңында студенттер «Тіл біліміне кіріспе» пәнінен емтихан тапсырып, емтихан нәтижелері бойынша студенттердің мотивтері мен оқу үлгерімі арасында байланыстың бар-жоғын айқындады. Зерттеу нәтижелері студенттердің мотивациясының оқушының үлгеріміне тікелей байланысты екенін көрсетті. Мектептегі білім негізінде оқитын оқушылар арасында ең жоғарғы мотив «бәрі оқиды, мен де оқимын» (8,32), екінші орында «Топты жібергім келмейді» (8,15), үшінші орында «әке-шешемнің қалауы осы болды» (7,97) деген сияқты мотивтер айқындалды. Колледж базасындағы топта жетекші орынды «шағымдарды болдырмау үшін» мотиві (8,17), келесі мотив «барлығы оқиды, мен де оқимын» (7,77), одан кейін «топты жібергім келмейді» мотиві анықталды (7,62).

Кілт сөздер: болашақ ағылшын тілі мұғалімдерінің мотивациясы, оқу үлгерімі, оқу жетістіктері, студенттердің жетістігі, мотив, мотивациялық теориялар, мотивациялық процестер, жоғары білімі.

Ж.М. Сагитова

Мотивация будущих учителей английского языка и ее связь с академической успеваемостью

Целью данного исследования было выявление факторов, мотивирующих будущих учителей английского языка к приобретению знаний, а также связь данных мотивов с успеваемостью. В эксперименте приняли участие будущие учителя английского языка, обучающиеся на первом курсе на базе школьного образования и колледжа. Каждый участник заполнил анкету в *Google Forms*, где расположил мотивы учебной деятельности в порядке важности. Затем результаты были проанализированы с помощью критерия t-Стьюдента. В конце семестра студенты сдавали экзамен по курсу «Введение в языкознание» и по результатам экзамена определяли, существует ли связь между мотивами и успеваемостью студентов. Результаты исследования показали, что студенческая мотивация напрямую связана с их успеваемостью. Установлено, что у студентов, обучающихся на базе школьного образования, самым высоким мотивом является мотив «все учатся, и я тоже» (8,32), на втором месте «не хочу подвести группу» (8,15), на третьем месте «это то, чего хотели мои родители» (7,97). В группе на базе колледжа ведущее место занимает мотив «чтобы избежать нареканий» (8,17), следующий мотив — «все учатся, и я тоже» (7,77), «не хочу подводить группу» (7.62).

Ключевые слова: мотивация будущих учителей английского языка, академическая успеваемость, академические достижения, успехи студентов, мотив, мотивационные теории, мотивационные процессы, высшее образование.

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Methodology of programmed chemistry lessons on the topic: "Hydrocarbons"

In modern education, the relevance of using innovative methods in the teaching of chemistry is significant. The complexity and volume of material that students need to master in chemistry lessons require new methods of delivery and comprehension. Programmed learning, using various technological tools and methods, makes it possible to individualise the learning process, taking into account the individual needs and learning pace of each student. This is particularly important given the different levels of students and the differences in their backgrounds and abilities. To date, there are few reliable and relevant developments on programmed learning in school education, especially in the field of chemistry. Therefore, the purpose of our work is to develop and evaluate a chemistry lesson on the topic: "Hydrocarbons". The development of the programmed lessons was carried out in 4 stages: in-depth study of the theory, selection of the topic of the lesson, development of the programmed lessons, and selection of the service to use in the classroom. The experimental group was class 10 "B" and the control group was class 10 "C". The experimental group was taught in the programmed learning format through the CopeApp website and the control group received the material in the traditional format using the explanatory-illustrative method and presentation. The points of the final test showed a significant increase of 12.5 % in the quality of knowledge in the experimental class. This suggests that programmed learning enhances students' ability to understand and master chemistry more effectively. A questionnaire survey was also carried out among the students in the experimental group, the results of which showed that the majority of the students evaluated the method of programmed learning positively.

Keywords: programmed learning, chemistry, 10th grade, questionnaire, test, hydrocarbons, secondary school.

Introduction

The modern educational system of the Republic of Kazakhstan has many tasks aimed at the development of students, contributing not only to their knowledge but also to the development of skills necessary for successful adaptation to the rapidly developing world. In contrast to traditional methods, programmed learning can develop each of these skills among students at an appropriate level.

The core of programmed learning in schools lies in its ability to focus on the individual needs of students, allowing everyone to progress at their own pace. This method provides a more personalised approach to the educational process, allowing students to master material in accordance with their level of knowledge and speed of learning. Programmed learning also promotes student independence, as students are allowed to take control of their learning and develop by following a structured learning programme [1].

The main value of computer-assisted learning in schools is that this method contributes to a deeper understanding of the material and teaches the ability to independently search for information and solve problems. It can also be an effective tool for individualising education and improving the educational process as a whole [2]. Programmed Learning (PL) is a teaching method based on the systematic delivery of structured information to master specific skills or knowledge. It is based on the principles of cognitive psychology and behavioural theory and can be used in a variety of contexts, from language learning to vocational training

Programmed learning is based on several key principles:

• Breaking down the material into small, digestible chunks to avoid information overload and improve learning.

• Active participation of students in the learning process by answering questions, solving problems and completing tasks, helps to consolidate learning and allows teachers to assess levels of understanding.

• Feedback: Students receive immediate feedback after each activity or answer, allowing them to correct their mistakes and improve their understanding of the material.

• Personalised: Learning is tailored to each student's individual needs and pace, providing an optimal learning experience and allowing students to absorb the material at their own level of understanding.

• Sequence: material is presented in a logical sequence from simple to complex, helping students to develop their knowledge and skills progressively.

• Progress tracking: Students can track their progress, which encourages continued learning. Teachers can also use this information to evaluate the effectiveness of learning and make changes if necessary [3].

Programmed learning is not only effective for standard curricula, but can also be used in corporate training, online courses, professional skills training and many other areas of education and training. It provides a systematic and structured approach to learning that makes the learning process more effective and accessible to a wide range of learners [4]. In addition, programmed learning can be adapted to suit different learning styles and student needs. Some learners may prefer visual materials, while others may prefer textual ones. Programmed learning allows you to choose the format of the material according to individual's preferences and needs.

One of the main advantages of programmed learning is its flexibility and accessibility. With the help of online platforms and digital technologies, learning material is easily distributed and available for learning at any time and from any location. This is particularly important in today's world where learning needs to be flexible and open to all types of learners. Finally, programmed learning increases the efficiency of the educational process and leads to better learning outcomes. It helps to assess students' progress and achievements more accurately and to tailor learning material to their needs and level of preparation. As a result, students can achieve better results and successfully apply their knowledge and skills in real life [5].

As a global method, programmed learning is divided into many types. Each of them is used in one way or another depending on the needs of the teacher and the students [6]:

• Linear programmed learning. This represents the most fundamental form of programmed learning, where instructional material is delivered in a linear sequence, enabling students to progress step by step from simpler concepts to more complex ones. Linear programmed instruction usually involves text-based lessons with questions and answers [7].

• Branching programmed learning. This type of instruction gives learners choices in the learning process. By answering questions or completing tasks, learners are exposed to different areas of material, allowing them to tailor their learning to their individual needs and levels. Branching of programmed learning arguably allows for the most personalized approach possible, where the learner does not have to spend time on tasks that are too easy for them [8].

• Programmed learning through modelling and simulation. This method uses the modelling of real-life situations or learning tasks. Learners can interact with the virtual environment and practice skills in a safe and controlled environment, leading to a deeper understanding and better retention of the material [9].

Computer programs for programmed learning:

A) Faculty members at Karaganda Buketov University have created a programme called "Nentwig Chemical Simulator", which allows for the creation of lessons using programmed learning methodology. The programme is free, but it is not publicly available and it is still under development. The program uses the SQLiteStudio database, which contains all the material divided into volumes and sections. Each section is a separate page of the lesson (theoretical material, question, message about the correctness or incorrectness of the answer). The user fills the database according to his/her needs. What is particularly important for programmed learning in chemistry is the possibility to use and add pictures. "Nentwig's Chemistry Simulator" has such a possibility. The programme allows you to add images to both the question and answer boxes. This is useful, for example, in organic chemistry when you want to check how well the student understands the structural formula of a substance and its appearance in space. "Nentwig Chemical Simulator" has a very important advantage — the possibility to use it without going online. In summary, the programme is acceptable for use in school chemistry lessons, but not for permanent use [10]. Kokibasova et al. [11], based on the results of the experiment, concluded that the use of a simulator with elements of programmed learning in the study of individual topics of the basic course of chemistry increases the success of learning material by students. To achieve the goal of the experiment, the authors developed the content of the course for programmed learning of chemistry in secondary schools. Based on this material the interface of the application automating the study of the material was developed. A database of tasks was created. A working test version of the application, implementing the designed functionality, was developed. The application was tested in a school environment. The results of the analysis of the application logs and the questionnaires of the participants showed that the developed complex can be used in the study of chemistry at school.

B) Another example of a service that uses programmed learning is the CoreApp website. The site allows you to create any type of lesson by adding an unlimited amount of text, audio, video, quizzes, open-ended questions and programmed learning modules. The service supports the Russian language, which makes it easy to create lessons without language barriers. In addition, this site has a simple interface ensures accessibility even for individuals with minimal experience using computers.

The site also offers several advantages. One of these is the ability to import images into the questions. This plays an important role in the creation of chemistry lessons, as the display of structural formulae is the basis for some topics. Lessons on this service can be created from both a computer and a mobile phone. The mobile version of the site is well-designed and has no visible bugs. This service also allows you to assign a certain number of points to each question, which allows you to emphasise the difficulty/importance of a certain part of the lesson. Once the student has completed the task, the teacher can analyse the quality of the student's understanding of the topic and, if necessary, suggest additional study material. The learner will not be able to move freely through any module of the programmed lesson until he reaches it by answering the questions correctly. The learner will have to progress sequentially through the pre-designed modules, which can have either a direct or branched format of programmed learning. When designing a branched lesson, it is possible for a student to fail a section intentionally. The site provides the possibility to set a threshold number of points which, if not met, the student will receive an appropriate message about the lack of points. In such instances, the student will need to revisit the entire material to ensure a comprehensive understanding [12].

The purpose of our work is to develop and test programmed chemistry lessons on the topic: "Hydrocarbons" for 10th-grade students.

Methods and materials

Development of programmed lessons on the topic "Hydrocarbons":

1. *In-depth study of the theory.* It is necessary to study the topic of programmed learning in detail. Also, to facilitate further work, it was necessary to assume in advance what advantages and disadvantages both teachers and students can expect when working with such a method [13].

2. *Selected topics and classes.* Together with the teachers, we chose three topics from the "Hydrocarbons" section: "Alkanes", "Alkenes", and "Alkynes". They were chosen because they seemed to us to be the most relevant topics in the hydrocarbon section. They also lent themselves well to the format of programmed learning. Since we believe that programmed learning cannot be used as a stand-alone teaching method, but should be combined with other teaching methods, this factor also influenced the choice of topics. The students first studied an introduction to organic chemistry, Butlerov's theory, and had the basic concepts of this section. Then they moved on to the topics we had chosen in the programmed learning format. It was these topics that had to be thoroughly prepared and developed [14].

3. *Preparation of programmed lessons.* Before designing the lesson, we studied in detail the chemistry textbook by Ospanova M.K., Aukhadieva K.S., and Belousova T.G. [15] for the tenth grade to consolidate the material and prepare for its structuring. It was crucial for students to access the material as modular sections within the textbook. This ensured that examination content and test papers aligned perfectly with the freely accessible resources, maintaining consistency with the textbook material.

There was only one small difficulty in designing the lessons: how to integrate the structural formulae of substances into them. And how to integrate them in such a way that the students would have to construct such formulas themselves and choose the correct answers. We studied the material and identified the points that needed to be presented to the students. We divided these points into separate modules and prepared questions for each of them. Three possible answers are the optimal format for such lessons, as the chance of guessing is only 33 %, but at the same time there are not so many options and it will be easier for the children to orientate themselves in the material.

4. *Choosing a service to use in the classroom and exporting prepared scenarios.* The choice was between two services: "Nentwig Chemical Simulator" and "the CoreApp website". The ability to use the site on mobile devices was the key factor as the chemistry classroom at the school is not equipped with computers and the students were to be taught using mobile devices only. We registered on the CoreApp site and then moved on to the lesson creation module. At this stage, you need to enter the name of the lesson, its description, if necessary, and add any modules from the menu on the left. In this case, the item called "Dialogue Simulator" is the module of programmed learning (Fig. 1).
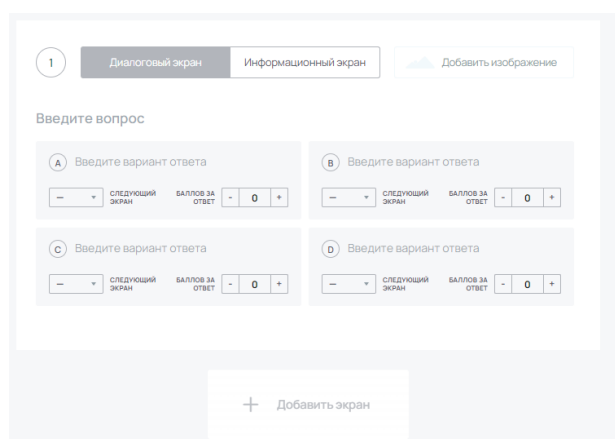
Figure 1. CoreApp site dialogue simulator

There are two module options here: a dialogue screen and an information screen. The dialogue screen is used to create questions directly (in the "Enter question" section). By default, the service offers four answer options, but you can remove unnecessary ones. In the image, you can see the "Add Image" option, which allows you to insert any image into the question field. The "Next page" option will take you to the next module. For example, a correct answer will take the student to Module 2 and an incorrect answer will take the student to Module 3. The Tutor will mark the answer at their discretion or leave this field blank. "Information Screen" — a module that does not contain a question but provides information and / or pictures. After reading the Information screen the student will also be redirected to the module selected by the tutor. In this way, each item from the prepared scenarios is entered. The student does not see the whole list of modules, but only one, and moves sequentially between them (Fig. 2).
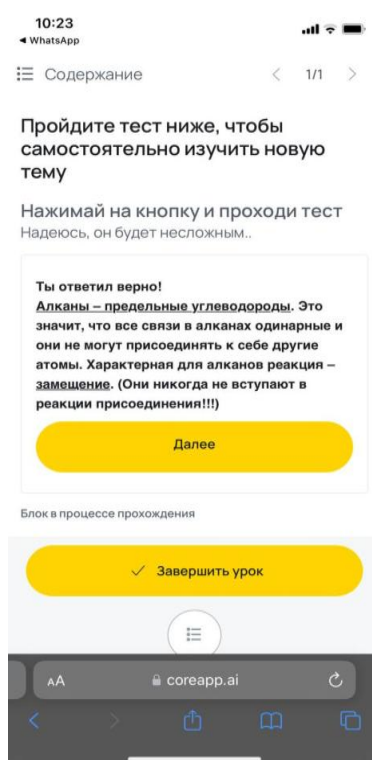
Figure 2. An example of a programmed lesson from a mobile device

Once the lesson script is fully entered into the service, the lesson should be published. You can share the lesson with your students either through a link or by giving them a lesson code that they will enter on the site. After the students have completed the lesson, the teacher will see the number of points they have scored

(provided the students have registered on the site before the lesson). All that remains is to send the link to the students and the lesson can begin.

Results

The 10 "B" and 10 "C" grades were chosen for the programme lessons. The tenth grades were chosen because the students already had general knowledge of the section "Hydrocarbons" from the previous year, and now there was an opportunity to use this as a basis for entrance testing in addition to the final testing. Three lessons from the section: "Alkanes. Products of combustion of alkanes", "Alkenes. Alkene addition reactions", "Alkynes".

Thus, this study involved 10 "B" classes as the experimental group and 10 "C" classes as the control group. The experimental group was taught in the format of programmed learning through the CopeApp website, and the control group — received the material in the traditional format using the explanatory-illustrative method and demonstration of presentation. Entrance and final tests were given to the students. Both the entrance and final tests were based on the three-unit topics selected and listed above. The tests consisted of fifteen questions and a student received one point for each correct answer. All the students in class 10 "B" (experimental) — 16 students — and class 10 "C" (control) — 15 students — took part in the entrance test.

1. Points for correct answers in the entrance test:

• In the experimental class (10 "B"): 2–4 points were obtained by 3 students, i.e., 18.75 % of the total number of students; 5-6 points were obtained by 6 students, i.e., 37.5 % of the total number of students; 7 and more points were obtained by 7 students, i.e., 43.75 % of the students. Accordingly, the quality of knowledge was 43.75 %.

• In the control class (10 "C"): 2–4 points were obtained by 3 students, i.e., 20% of the class; 5-6 points were obtained by 5 students, i.e., 33.3% of the class; 7–10 points were obtained by 7 students, i.e., 46.7% of the class.

In summary, the percentage of students with the same scores is about the same in both the control and the experimental classes. However, in the control class, the average grade is slightly lower. After the entrance test, the control class (10 "C") continued to study in the usual mode; the experimental class (10 "B") received knowledge in the format of programmed learning (Fig. 3).
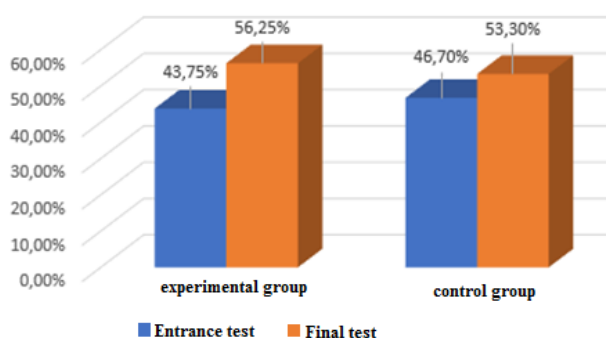
Figure 3. Results of entrance and final testing

2. Points for correct answers in the final test:

• In the experimental class (10 "B"): 2–4 points were obtained by 3 students, i.e., 20 % of the class; 5-6 points were obtained by 5 students, i.e., 33.3 % of the class; 7–10 points were obtained by 7 students, i.e., 46.7 % of the class were obtained by 5 students, i.e., 31.25 % of the class; 7–10 marks were obtained by 9 students, i.e., 56.25 % of the class.

• In the control class (10 "C") that 3 students scored 2–4 points, accounting for 20% of the class; 4 students scored 5-6 points, representing 25% of the class; and 8 students scored 7–10 points, comprising 53.3% of the class.

In the experimental class (10 "B") increased the quality of knowledge from 43.75 % to 56.25 %, while the control class increased the quality of knowledge from 46.7 % to 53.3 %. The experimental class increased the quality of knowledge by 12.5 %, while the control class increased the quality of knowledge by 6.6 %.

In addition, a seven-question survey was carried out in the experimental class to determine the general attitude of the students towards the programmed learning method.

Questions for the survey:

1. Did you like the lessons in the programmed learning format?
2. Would you like to have such lessons regularly?
3. Was it difficult to learn the material on your own?
4. Is programmed learning more difficult than traditional teaching?
5. Do you find it convenient to use electronic resources in class?
6. Would you like to use electronic resources more often, but in a different format?
7. Do you find it easier to absorb the material in programmed learning rather than when it is explained by the teacher?

The questionnaire was distributed to 16 students of experimental class 10 "B". Figure 4 shows the number of "yes", "no" and "neutral" responses to each question on the questionnaire.
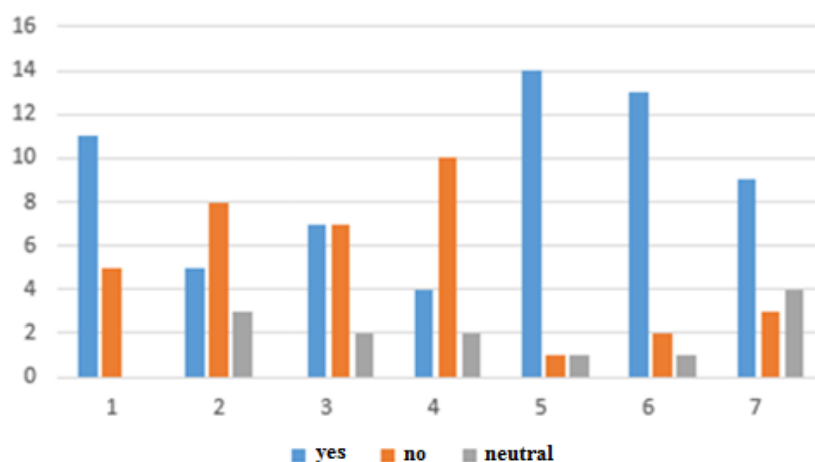
Figure 4. Results of the questionnaire in the experimental class

Eleven students answered "yes" to the first question and 5 students answered "no". This indicates that more than half of the students liked this teaching method. The second question was answered "yes" by 10 students, "no" by 5 students and only one pupil doubted his answer. From this, we can conclude that the majority of the learners would like to participate in the "programmed learning" format again, but not regularly. Perhaps in alternation with other methods.

Seven students responded positively to the third question, while an equal number answered negatively, and two expressed uncertainty. These responses indicate that independent study of the material poses challenges for some students but is manageable for others. The fourth question received positive responses from four students, negative responses from ten students, and uncertain responses from two students. These results suggest that the students did not view programmed learning as a method more complex than traditional teaching.

Fourteen students responded positively to the fifth question, while one student answered "no" and another provided a "neutral" response. This indicates that students enjoy using electronic resources in class, as they find it to be a familiar and comfortable learning environment. The sixth question revealed that 13 students expressed a desire to combine electronic resources with other teaching methods, while two students opposed this approach, and one was uncertain. These responses suggest that the majority of students are open to incorporating electronic resources into alternative learning methods. For the final, seventh question, nine students answered "yes", three responded negatively, and four expressed uncertainty. The majority of students believe that this presentation style facilitates better understanding and retention of material compared to traditional teaching methods.

To summarise the results of this questionnaire, the majority of the students of class 10 "B" evaluate the method of programmed learning positively. They like this format; it is not difficult or incomprehensible for them. They also expressed their interest in the use of electronic resources and, in general, in the idea of inde-

pendent acquisition and analysis of knowledge. Students agree to use this method often, but not regularly. They prefer to combine it with other equally interesting teaching methods, which may also require the use of electronic resources.

Discussion

Programmed learning is an effective teaching method, but like any other educational approach, it has its limitations and drawbacks [16]:

1. *Transfer of knowledge and skills.* Knowledge that requires creativity or active interaction can be difficult to transfer through unit-based curricula. This is particularly true in areas where the development of critical thinking, analytical or problem-solving skills is essential.

2. *Lack of individualisation of learning.* Curricula can be structured to accommodate different learning styles, but they cannot always be adapted to the individual needs of each student. Materials need to be adapted so that they are accessible to both less and more capable students. This requires the creation of a variety of materials and tasks that meet the individual needs and ability levels of each student.

3. *Limited interaction with the teacher.* Limited opportunity for teacher-student interaction to solve complex problems or to ask for additional explanations of difficult concepts. Preparing a lesson involves developing a clear structure, and identifying key concepts and the steps that need to be followed to understand the material. This requires a thorough understanding of the subject and the ability to organise information in a way that is accessible and understandable to learners.

4. *Technical constraints.* Lack of access to the necessary equipment or internet connection can make it difficult or impossible for some learners to use software-based learning programmes, as not everyone has a computer and/or even a smartphone with internet access. Evaluating the effectiveness of programme-based learning can also be challenging because of difficulties with assessment. Not all services provide sufficient data to assess student performance.

The practical part of the work also showed the need to combine programmed learning with other interactive methods — this will give students not only practical but also theoretical skills. It is important to emphasise that programmed learning can be a very useful tool, but its use as the only method of learning can lead to the omission of important aspects of education, such as social interaction, creative thinking and the development of social skills. It is therefore important to find a balance between programmed learning and other learning methods to ensure a comprehensive and effective educational process [17].

Conclusion

Based on the results obtained it is possible to conclude about the positive impact of programmed learning on the learning process and the ability to interest students. The results of the final test showed a significant increase in the quality of knowledge in the experimental class from 43.75 % to 56.25 %. This indicates that programmed teaching allows students to better assimilate the chemistry material.

A questionnaire survey was carried out among the students in the experimental group, according to which 68 % of the students rated the method of programmed learning positively and liked it. According to the students, this method should be alternated with other methods. At the same time, almost 63 % of the students would like to use this method more often.

There are several reasons for these results:

Firstly, the increased interest of the students in this method of teaching, the comfortable pace of work — all this ensured the interest of the students.

Secondly, the division of the material into small modules made it easier for the students to understand the subject and the topics. A small amount of information is much easier to comprehend than, for example, a whole paragraph of a textbook.

Thirdly, it is simply more interesting for students to use mobile devices in class because it is a familiar environment for them. All these factors increase the quality of knowledge and general interest in the subject, which are undoubtedly important advantages of programmed learning.

However, it is important to note that such a small number of respondents (n=16) cannot guarantee the validity of the survey results. For a better understanding and more accurate results, many more students should be interviewed.

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«Көмірсутектер» тақырыбы бойынша бағдарламалық химия сабақтарын өткізу әдістемесі

Қазіргі білім беруде инновациялық әдістерді қолданудың өзектілігі химияны оқытуда ерекше маңызды болып отыр, себебі химия сабақтарында оқытын материалдың күрделілігі мен көлемі оқушыларға оны жақсы игерудің жаңа тәсілдерін қажет етеді. Бағдарламаланған оқыту әр түрлі технологиялық құралдар мен әдістер арқылы әр оқушының жеке қажеттіліктері мен оқу қарқынын ескере отырып, оқу процесін жекелендіруге мүмкіндік береді. Бұл әсіресе сынып оқушыларының әртүрлі деңгейлерін және оқушылардың дайындығы мен қабілеттеріндегі айырмашылықтарды ескеруі өте маңызды. Бүгінгі таңда мектеп білімі шеңберінде, әсіресе химия саласында бағдарламаланған оқыту бойынша қажетті және өзекті әзірлемелер аз. Сондықтан, біздің жұмысымыздың мақсаты — «Көмірсутектер» тақырыбында химия сабақтарын әзірлеу және сынақтан өткізу. Бағдарламаланған сабақтарды әзірлеу 4 кезеңде жүргізілді: теорияны терең зерттеу, сабақ тақырыбын таңдау, бағдарламаланған сабақтарды әзірлеу, оны сабақта қолдану үшін сервис таңдау. Эксперименткe 10 «Б» — эксперименттік сынып, 10 «С» — бақылау сыныбы ретінде қатысты. Эксперименттік топ

CopeApp веб-сайты арқылы бағдарламаланған оқыту форматында, ал бақылау тобы түсіндірме — иллюстрациялық әдіс пен презентацияны қолдана отырып, материалды дәстүрлі форматта оқыды. Қорытынды тестілеу нәтижелері эксперименттік сыныптағы білім сапасының 12,5 %-ға айтарлықтай өскенін көрсетті. Бұл бағдарламаланған оқыту оқушылардың химия материалын жақсы меңгеруге мүмкіндік бергенін көрсетеді. Қосымша эксперименттік топ оқушылары арасында сауалнама жүргізілді, оның нәтижелері бойынша білім алушылардың көпшілігі бағдарламаланған оқыту әдісін оң бағалады.

Кілт сөздер: бағдарламаланған оқыту, химия, 10-сынып, сауалнама, тестілеу, көмірсутектер, орта мектеп.

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Методика проведения программных уроков химии по теме: «Углеводороды»

В современном образовании актуальность использования инновационных методов на уроках химии становится особенно важным в обучении. Сложность и объем материала, который необходимо усвоить учащимся на уроках химии, требует новых способов его подачи и усвоения. Программированное обучение с помощью разнообразных технологических средств и методов позволяет индивидуализировать процесс обучения с учетом индивидуальных потребностей и темпа обучения каждого ученика. Это особенно важно, учитывая разный уровень учеников классов и различия в подготовке и способностях учащихся. На сегодняшний день имеется недостаточно достоверных и актуальных разработок по программированному обучению в рамках школьного образования, особенно в области химии. Поэтому, целью нашей работы является разработка и апробация уроков по химии на тему: «Углеводороды». Разработка программированных уроков проводилась в 4 этапа: углубленное изучение теории, выбор темы занятия, разработка программированных уроков, выбор сервиса для использования его в классе. В эксперименте приняли участие 10 «Б» — экспериментальный класс, 10 «С» — контрольный класс. Экспериментальная группа обучалась в формате программированного обучения через веб-сайт *CopeApp*, а контрольная группа получала материал в традиционном формате с использованием объяснительно-иллюстративного метода и презентации. Результаты итогового тестирования показали значительное повышение качества знаний в экспериментальном классе на 12,5 %. Это свидетельствует о том, что программированное обучение позволяет учащимся лучше усваивать материал по химии. Среди учащихся экспериментальной группы также было проведено анкетирование, по результатам которого, большинство обучающихся положительно оценили метод программированного обучения.

Ключевые слова: программированное обучение, химия, 10 класс, анкетирование, тестирование, углеводороды, средняя школа.

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Болашақ педагогтың өзін-өзі ұйымдастыру құзыреттерін қалыптастыруда өзіндік жұмыстың рөлі

Мақалада болашақ педагогтың өзін-өзі ұйымдастыру құзыреттерін қалыптастыруда жоғары және (немесе) жоғары оқу орнынан кейінгі білім беру ұйымдарында (бұдан әрі — ЖЖОКБҰ) ұйымдастырылатын өзіндік жұмыстардың рөлі мен олардың өзара байланысы қарастырылған. Өзіндік жұмыстың ЖЖОКБҰ-дағы педагогикалық үдерістің маңызды құрамдас бөліктерінің бірі ретінде және оның берер мүмкіндіктері сипатталған. Сонымен қатар, өзіндік жұмыстың дидактикалық мақсаты анықталып, оларды ұйымдастыру ерекшеліктері мен қолданылатын әдіс-тәсілдерге сипаттамалар берілген. Зерттеудің мәселелері болашақ педагог жеке басының өзін-өзі ұйымдастыруын қалыптастыру үдерісінің мәні мен рөлін анықтауда ашылады. Жұмыстың мақсаты — болашақ педагогтардың өзін-өзі ұйымдастыру құзыреттерін қалыптастыру үшін қажетті тиімді тәсілдер мен педагогикалық дағдыларды айқындауға негізделеді. Зерттеудің теориялық маңыздылығы — дұрыс және тиімді ұйымдастырылған өзіндік жұмыс болашақ педагогтың кәсіби қызметіне қажетті қасиеттердің, сонымен қатар өзін-өзі ұйымдастыру құзыреттерінің қалыптасуына тікелей ықпалын тигізетіні туралы мақалада сипатталған. Өзіндік жұмыстар аудиториялық және аудиториядан тыс сабақтарды ұйымдастыру төңірегінде қарастырылды. Болашақ педагогтарды даярлау барысында өзіндік жұмыс өзін-өзі ұйымдастыруға қажетті қасиеттері мен қабілеттерін, ақыл-ой еңбегі мәдениетін, жаңа білімді өздігінен игеру дағдыларын қалыптастыруға айтарлықтай әсер етеді. Осыған орай, зерттеу жұмысына болашақ педагог ретінде Әбілқас Сағынов атындағы Қарағанды техникалық университетінің ғылыми-педагогикалық бағытындағы магистратураның білім алушыларына сауалнама жүргізілді және олардың нәтижелері ұсынылды. Сауалнаманың нәтижелері магистранттар арасында оқу іс-әрекетінің өзін-өзі ұйымдастыру құзыреттерін қалыптастыруда оң динамиканы байқауға болады, демек бұл кәсіби құзыреттердің қалыптасуын көрсетеді.

Кілт сөздер: өзін-өзі ұйымдастыру, өзіндік жұмыс, болашақ педагог, магистрант, педагогикалық үдеріс, педагогикалық дағды, құзырет, кәсіби қызмет, ЖЖОКБҰ.

Кіріспе

Бүгінгі күні жаһандану үдерісі еліміздің барлық салаларына, соның ішінде әлеуметтік-экономикалық, білім беру және мәдени салаларымен қатар, жалпы қоғамға ерекше әсер етті, себебі бұл салаларда болып жатқан алуан түрлі өзгерістер жеке тұлғаның дамуына тікелей әсерін тигізбей қоймады. Тиісінше, бұл фактор болашақ маманның зияткерлік, адамгершілік, жалпы мәдениет деңгейін, кәсіби салада дамуына байланысты өз қызметінің шекараларын үнемі жетілдіріп отыруды және оны кеңейтуді талап етеді, біз мақалада осы мәселені өзін-өзі ұйымдастыру құзыреттерін игеру арқылы мүмкіндігін қарастырамыз. Осыған орай, болашақ маманның өзін-өзі ұйымдастыру мен өзін-өзі жетілдіру қабілеттеріне жоғары талаптар қойылады. Сол себепті, түлектер жоғары және (немесе) жоғары оқу орнынан кейінгі білім беру ұйымдарында (бұдан әрі — ЖЖОКБҰ) меңгерген білімдерімен шектеліп қалмауы тиіс. Демек, кез келген кәсіби қызмет саласындағы болашақ маман, әсіресе педагог үшін жеке тұлғаның өзін-өзі ұйымдастыру құзыреттерін қалыптастыру мәселесінің өзекті екендігін осы тұстан байқауға болады, ал өзін-өзі ұйымдастыру құзыреттерін өз бетінше жұмыс істеуге үйрену арқылы қалыптастыруға болады. Себебі, өзіндік жұмыс барысында болашақ маман үшін маңызды қабілеттер мен дағдылардың қалыптасуымен қатар, өзін-өзі ұйымдастыруға қажетті жеке қасиеттер де дамиды [1; 13].

ЖЖОКБҰ-ның оқу іс-әрекетінде болашақ педагогтардың өзін-өзі ұйымдастыру құзыреттерін қалыптастыру мүмкіндіктерін анықтау үшін, ең алдымен ғылыми-педагогикалық салада бұл мәселені ашып қарастыратын отандық, ресейлік және шетелдік бірқатар сапалы зерттеулерге талдау жасауды жөн көрдік. Соңғы екі онжылдықта білім алушылардың өзін-өзі ұйымдастыру үдерісінің

ерекшеліктерін зерттеуге арналған жұмыстар пайда болды. Өзін-өзі ұйымдастыру және осы бағытта білім алушылардың құзыреттерін қалыптастыру мәселесі бойынша қамтылған отандық ғылыми зерттеулерден Е.Н. Агранович тің «Тайм-менеджмент» технологиясы негізінде студенттердің оқу қызметін өзін-өзі ұйымдастыру» жұмысын атап өтуге болады. Алайда, бұл бағытта басқа қазақстандық ғалымдардың еңбектері жоқ деуге болады.

Өзін-өзі ұйымдастырудың теориялық негіздерін зерттеуге үлесін қосқан ресейлік ғалымдардың ішінен А.Д. Ишков, С.С. Котова, С.А. Косарева, О.Н. Князькова, Ч.И. Низамова, М.А. Пахмутова, М.А. Реунова және т.б. еңбектерін ерекше атап өтуге болады.

Өзін-өзі ұйымдастыруды зерттеуге білім алушыларда өздігінен білім алу және өзін-өзі тәрбиелеу дағдыларын қалыптастыру мен педагогикалық жағдайларын зерттеумен айналысқан Г.С. Закиров [2], өзін-өзі ұйымдастырудың психологиялық аспектісін және оның зерттеу қызметінің стиліне байланысты дамуын зерттеген М.А. Пахмутова [1]; гуманитарлық ғылымдар студенттерінің өзін-өзі ұйымдастыруының ерекшеліктерін анықтаған Н.В. Шмурыгина [3] еңбектерінің үлесі зор. Сонымен қатар, Х.Х. Наинг [4] синергетикалық тәсіл негізінде өзін-өзі ұйымдастыру дағдыларын қалыптастыру; О.Н. Логвинова [5] оқушылардың технологиялық білімінде оқу іс-әрекетін өзін-өзі ұйымдастыру дағдыларын дамыту; С.С. Котова [6] студенттердің оқу-танымдық іс-әрекетінің өзін-өзі ұйымдастыруын қарастырған.

Алайда, өзін-өзі ұйымдастыру құрылымына, оның мазмұны мен функционалдық компоненттеріне қатысты білім алушылардың өзін-өзі ұйымдастыруын дамыту процесі туралы теориялық білімнің үлкен көлеміне қарамастан, педагогика ғылымында білім алушылардың оқу іс-әрекетінде өзін-өзі ұйымдастыру дағдыларын қалыптастыру үдерісін педагогикалық қолдаудың кешенді талдауы ұсынылған жүйелі зерттеулер аз. Технологияның өзін-өзі ұйымдастыру құзыреттерін қалыптастыру әлеуетіне қарамастан, оқу үдерісінде уақытты басқаруды қолдану мүмкіндігі мен тәсілдерін көрсететін жұмыстар көлемі аз. Сонымен қатар, қызметті өзін-өзі ұйымдастыруға қажетті құзыреттер мен дағдыларды қалыптастыруға бағытталған нақты жұмыстардың жоқ болуына орай, ЖЖОКБҰ-да өзіндік жұмысты ұйымдастыру кезінде білім алушылардың, оның ішінде болашақ педагогтың өзін-өзі ұйымдастыру құзыреттерін қалыптастыруды қамтамасыз ету мәселесі өзекті болып қала береді.

Болон жүйесі шеңберінде республиканың ұлттық білім беру жүйесінде ЖЖОКБҰ-да жүзеге асырылатын «бакалавриат — магистратура — докторантура» үш деңгейлі дайындық жүйесімен байланысты. Бұл жүйе біліктілікті (бакалавриат) және белгіленген тәртіппен академиялық (магистратура) және ғылыми дәрежелерді (докторантура) тағайындауға бағытталған. Оның енгізілуімен білім алу үдерісі көп деңгейлі (жоғары оқу орнына дейінгі, жоғары және жоғары оқу орнынан кейінгі дайындық), көп сатылы (мектеп, колледж, жоғары оқу орны, магистратура, докторантура) болып келеді [7]. Соған орай, үздіксіз білім беруді қолға алу мақсатында еліміздің ЖЖОКБҰ-да өз бетінше жұмыс істеуге бөлінген сағаттардың үлесін ұлғайту идеялары жүзеге асырылды.

Педагогикаға «өзін-өзі ұйымдастыру» ұғымы бірнеше сабақтас ғылымдардан енген, олардың қатарына философия, жаратылыстану, синергетика және психология сияқты ғылымдарды жатқызуға болады. Философия және жаратылыстану ғылымдары тұрғысынан өзін-өзі ұйымдастыру заттардың сапалы жаңа қасиеттерінің пайда болуының, тепе-тең емес дамушы жүйелердегі реттіліктің жоғарылауының немесе ішкі себептердің әсерінен жүйелерге сыртқы ортамен өзара әрекеттесу кезінде ашық тепе-тең емес дамушы жүйелердегі тәртіп дәрежесінің пайда болуы мен тереңдеу үдерісінің маңызды факторы болып табылады [8; 9].

Синергетика тұрғысынан «өзін-өзі ұйымдастыру» күрделі, тепе-теңдіктен алыс, сыни нүктелердегі сызықтық емес жүйелердегі кеңістік-уақыттық құрылымдарды макроскопиялық реттеу үдерісі түсіндіріледі. Мұнда жүйенің күйі тұрақсыз болады және шамалы ауытқулардың әсерінен күрт өзгеріп, тепе-теңдік орнағанға дейін одан әрі дамудың көптеген жолдарымен жүре алады. Синергетикалық теория өзін ашық, сызықтық емес жүйелердің өзін-өзі ұйымдастыру теориясы ретінде көрсетіп, қоршаған әлем туралы идеяларды «адам-қоғам-табиғат» үйлесімді жүйесіне біріктірумен ерекшеленеді [9; 45].

С.П. Капицаның пікірі бойынша «синергетиканың негізгі идеясы — бұл өзін-өзі ұйымдастыру үдерісінің нәтижесінде тәртіпсіздік пен хаостан тәртіп пен ұйымдастырудың өздігінен пайда болуының принципті мүмкіндігі туралы идея» екендігін атап өтеді [10; 7]. Хтун Хтун Наинг өзін-өзі ұйымдастыру теріс ауытқулар мен оң байланыстардың энергия ретінде өзара әрекеттесуінен туын-

дайтынын ескере отырып, ашық және тепе-теңдік емес жүйелерді қарастырады. Демек, автор өзін-өзі ұйымдастыру жүйеге оң және теріс әсер етуі мүмкіндігін анықтайды [4; 12].

Психология тұрғысынан «өзін-өзі ұйымдастыру» ерік-жігердің көмегімен басқарылатын және сана мен зияткерлік механизмдер арқылы жүзеге асырылатын тұлғаның бойында бар, игерген және игерілетін қасиеттерін біріктіру мүмкіндігі. Психологиялық көзқарас бойынша ерікті қасиеттерімен ерекшеленбейтін адам өз қызметін өзін-өзі ұйымдастыра алмайды. Сонымен, өзін-өзі ұйымдастыру құзыреті мінез-құлық мотивтерінде көрінеді, ерік-жігермен басқарылады және реттелген іс-әрекетте жүзеге асырылады. Өзін-өзі ұйымдастыру тұлғаның дербестігін және белгілі бір психикалық жүйені қалыптастырады. Адам өзіне тән қасиеттерін, психикасын, мотивтерін, мақсатын, дүниетанымын, яғни өзін жеке тұлға ретінде таныған кезде өзін-өзі ұйымдастыру жеке жетілудің көрсеткіші ретінде қарастырылады [8; 9].

Педагогика тұрғысынан «өзін-өзі ұйымдастыру» жеке тұлғаның іс-әрекеті, өзін және уақытын ұйымдастыра білуге байланысты қабілеті ретінде анықтайды. Оның мақсат, белсенділік, мотивация, өз қызметін жоспарлау, дербестік, шешім қабылдаудың жоғары жылдамдығы және олар үшін жауапкершілік, іс-әрекет нәтижелерін сыни бағалау, міндет сезімі сияқты көріністері бар. О.А. Анисимов өзін-өзі ұйымдастыруды кәсіби қабілеттің ең жоғары деңгейі ретінде қарастырды [11; 75]. Педагогикадағы өзін-өзі ұйымдастыруды іс-әрекет ретінде сипаттауға, сонымен бірге кәсіби шеберлік, жеке қасиеттер және ұйымдастырушылық дағдылармен байланысты қабілет түрінде де сипаттауға болады.

Болашақ педагогтың өзін-өзі ұйымдастыру мәселесі қазіргі ғылыми әдебиеттерде білім беру жүйесінің басқа аспектілері сияқты кеңінен зерттелмеген. Әсіресе, мұндай тұжырымдама шетелдік әдебиеттер мен ғылыми-зерттеу жұмыстарында қолданыла бермейді. Алайда, өз зерттеулерінде топтық жұмыс шеңберінде өзін-өзі ұйымдастыру дағдыларын қарастыратын A. Eiden, Y. Juresa, J. Göbel, R. Tuetsch, K. Klaeger, K. Gries [12; 124] зерттеуін атап өтуге болады. Студенттердің өзін-өзі ұйымдастыруын қалыптастыруда R. Isusi-Fagoaga, A. García-Aracil [13; 3] аралас оқыту моделін қолданудың маңыздылығын атап көрсетеді.

Шетелдік авторлардың зерттеулерінде өзін-өзі ұйымдастыру бірқатар өзіндік үдерістердің жиынтығынан тұрады, соған орай A. Bramucci өзіне сыртқы ынталандыруға бағытталған әрекеттерден тұратын төрт негізгі үдерісті (өзін-өзі бақылау, өзін-өзі оқыту, өзін-өзі бағалау, өзін-өзі күшейту) ұсынды [14; 3]. N. Saeid зерттеулерінде студенттердің ішкі мотивациясының нәтижесінде өзін-өзі ұйымдастыру дағдылары жоғары деңгейде болады, ал оның жоғары болуы студенттердің академиялық жетістіктерін жоғары етеді [15; 227].

Тәжірибе көрсеткендей, көптеген адамдар болашақ мамандардың, соның ішінде педагогтың өзін-өзі ұйымдастыру дағдыларын қалыптастыруға жеткілікті көңіл бөлмейді. Әдетте, бұл жағдайда білім беру компоненті үлкен маңызға ие, яғни арнайы білімді игеру. Көп жағдайда білім алушылар өзін-өзі ұйымдастыру, қызметті жоспарлау, жеке уақыт пен мүмкіндіктерді ұтымды бөлу, ақпаратты іздеу және талдау, өз пікірлері мен ұжымдық жұмыстарды ұсыну және т.б. дағдыларының төмен деңгейінен туындаған қиындықтарға тап болады [16; 18].

Алайда, жоғарыда айтылғандай, аталмыш мәселе ғылыми әдебиеттерде аз зерттелген күйінде қалып отыр. Өзін-өзі ұйымдастыруды толық, нақты жоспарланған схема түрінде ұсынуға болмайды. Оны белгілі бір шеңберге қоюға тырысу оқу құрылымындағы (білім алушылар мен оқытушылар арасындағы) өзара тепе-теңдік қағидасын бұзады. Дегенмен, оқу үдерісінің барлық кезеңдерінде практикамен тікелей байланысты өзіндік жұмысы жүзеге асырылады. ЖЖОКБҰ қабырғасында тиімді ұйымдастырылған өзіндік жұмыс барысында білім алушылардың қызығушылықтары артып, жеке оқу қарқынына сәйкес әртүрлі ақпарат көздерін өздігінен пайдалануға, ынталандырушы оқу ортасын құра алады, соның нәтижесінде өзін-өзі ұйымдастыру қызметін қалыптастыруды қамтамасыз етуге болады.

Кез келген өзін-өзі ұйымдастырудың ерекше белгісі ретінде — оның мақсатты, бірақ стихиялық сипатта болуын атап өтуге болады. Өзін-өзі ұйымдастырудағы шоғырлану (мақсаттылық) — оқу үдерісін басқаруды ұйымдастырудың әдеттегі формалары сияқты әкімшілендіру емес, университет даярлай алатын мамандардың модельдерін анықтауды білдіреді [17].

Зерттеу жұмысының мақсаты — ЖЖОКБҰ-ның оқу-тәрбие үдерісінің құрамдас бөлігі болып саналатын болашақ педагог ретінде магистранттардың өзіндік жұмыстары барысында өзін-өзі ұйымдастыру құзыреттерін қалыптастыру, кәсіби қабілеттер мен дағдыларды игеру ерекшеліктерін анықтау. Ол үшін зерттеуде келесі міндеттер орындалды, атап айтқанда: «өзін-өзі ұйымдастыру»

және «өзіндік жұмыс» ұғымдарының мазмұны сипатталды; болашақ педагогтарды даярлау барысында олардың байланысы анықталды; магистранттардың өзін-өзі ұйымдастырудың жоғары деңгейін дамыту үшін қажетті негізгі тәсілдер мен құралдар ретінде ӨЖ түрлері талданды.

Материалдар мен әдістер

Бүгінгі таңда ЖЖОКБҰ-ның білім берудегі басты мақсаттарының бірі — білікті ғылыми және ғылыми-педагогикалық мамандарды даярлау екені баршамызға мәлім. Ғылыми-педагогикалық мамандарды кәсіби даярлау магистратураның негізгі міндеттерінің бірі. Қазақстанның болашақ білімі мен ғылымының жетістігі жоғары оқу орнынан кейінгі білім берудің сапасымен, мазмұнымен және оқыту әдістерімен тығыз байланысты, өйткені ғылыми-педагогикалық бағытындағы магистранттар ЖЖОКБҰ-да педагог қызметін атқара алады. Олар оқытатын білім алушылардың тағдыры ғана емес, сондай-ақ олар еліміздің білім және ғылым саласындағы прогреске ықпал ететін болады. Сондықтан магистранттардың сапалы білім алуын қамтамасыз ету ЖЖОКБҰ-да білім берудің ажырамас міндеті.

Қазақстанда ЖЖОКБҰ-да кадрлар даярлауда магистратура екі бағыт бойынша білім беру бағдарламалары базасында жүзеге асырылады:

1) ғылыми-педагогикалық магистратура (оқу мерзімі екі жыл);

2) бейіндік магистратура (оқу мерзімі бір жылдан бір жарым жылға дейін).

Ғылыми-педагогикалық бағыттағы магистратура ЖЖОКБҰ мен ғылыми ұйымдар үшін тереңдетілген ғылыми-педагогикалық және зерттеу даярлығы бар ғылыми және ғылыми-педагогикалық кадрларды даярлау бойынша жоғары оқу орнынан кейінгі білімнің білім беру бағдарламаларын іске асырады [18].

Зерттеу жұмысымызда болашақ педагог ролінде ғылыми-педагогикалық бағытындағы магистранттар алынды. Зерттеуге «Әбілқас Сағынов атындағы Қарағанды техникалық университеті» КЕАҚ әртүрлі білім беру бағдарламаларында оқитын ғылыми-педагогикалық бағытындағы 1-курс магистранттары қатысты. ЖЖОКБҰ-да болашақ педагогтардың оқу іс-әрекетінің өзін-өзі ұйымдастыру құзыреттерін қалыптастыруда өзіндік жұмыстың рөлін анықтау мақсатында оларға сауалнама жүргізілді және олардың нәтижелері ұсынылды.

Қазіргі білім беру жүйесі магистранттардың жеке басын өзін-өзі ұйымдастыруға, өзін-өзі дамытуға және өзін-өзі жүзеге асыруға бағытталғандықтан, олардың құндылық-мақсатты бағдарлары өзгереді. Сол себепті, ЖЖОКБҰ-ның оқыту үдерісінің құрамдас бөліктерін, мысалы: технологияларды, білім беру мазмұнын, оқыту әдіс-тәсілдерін және ұйымдастыру формаларын жаңғырту қажет. Күнделікті өмірде педагог қызметінде белгілі бір педагогикалық мәселелерді шешуге тап болады, сондықтан оған өзін-өзі ұйымдастыру, педагогикалық ойлау, меңгерген теориялық білімдерін іс жүзінде қолдану дағдылары қажет. Бұл білімдер тек педагогика ғана емес, сонымен қатар психология, дидактика, философия, мәдениеттану, әлеуметтану және т.б. салалармен байланысты болуы мүмкін. Осыған орай, жаңа ақпараттар легі күн сайын пайда болуда, яғни олар ғылыми зерттеулер, педагогикалық жаңа ой-тұжырымдамалар түрінде көрінеді. Осындай көптеген мәліметтер арасында педагогтан бағдарлау дағдыларын талап етеді және мәжбүрлейді. Сонымен қатар, ол алған білімдерін іс жүзінде қолдана білуі және оларды эмпирикалық түрде дәлелдеуі немесе жоққа шығаруы керек. Ол үшін жеке іске асырылған жобаларды талдау, алынған нәтижелерді жүйелеу, жалпылау және талдау сияқты дағдыларын игеруі тиіс. Демек, жоғарыда аталған өзгерістер университет қабырғасында жүзеге асырылатын білім беру үдерісінде педагогикалық қажеттіліктерді жаңғыртуға алып келеді.

Аталмыш мәселелерді зерттеу бойынша философиялық, психологиялық-педагогикалық және әдіснамалық әдебиеттерді теориялық талдаудың арқасында ақпаратты жүйелеп, өзіндік жұмыс, өзін-өзі ұйымдастыру ұғымдарын, болашақ педагогтың өзін-өзі ұйымдастыру құзыреттерін қалыптастыру үдерісін, олардың өзін-өзі дамыту ерекшеліктерін қарастыруға мүмкіндік туды.

Талдау (анализ) әдісі жалпы мәселені бірнеше санатқа бөлу мақсатында қолданылды, яғни өзін-өзі ұйымдастыру құзыреті және өзіндік жұмыс ұғымдарының әрқайсысы анықталды. Нәтижесінде олардың мәні мен ерекшеліктері сипатталды.

Синтез әдісі, керісінше, бөлінген элементтерді біріктіріп, оларды бірлікте қарастыруына мүмкіндік берді. Ол өзін-өзі ұйымдастыруға сәйкес келетін негізгі қасиеттерді сипаттау үшін пайдаланылды, яғни болашақ педагогтарды даярлауда қандай ӨЖ түрлері мен тәсілдерін қолдануға болатыны ұсынылды.

Дедукция әдісі жұмыстың логикалық құрылымын қалыптастыруға негіз болды. Жалпы теориялық аспектілер өзіндік жұмыс пен өзін-өзі ұйымдастыру құзыреттерінің арасында белгілі бір дәрежеде байланыс орнатуға мүмкіндік беретінін көрсетеді.

Нәтижелер және оны талқылау

Жоғары оқу орнынан кейінгі білім берудегі білім алушылардың өзіндік жұмысының мақсаты — оқу жұмыс жоспарында белгіленген ғылыми білімнің мөлшерін игеріп қана қоймай, болашақ педагог тұлғасын қалыптастыру. Мұндай тұлғаның қалыптасуы мен әрі қарай жетілуі белсенді және тәуелсіз қызмет барысында жүзеге асады.

Жоспарлы түрде ұйымдастырылған өзіндік жұмыс барысында білім алушылардың дербестігі, ақыл-ой тәуелсіздігі дамиды. Демек, магистрант қажетті білім деңгейін игерумен қатар, оны толықтырады, қазіргі шынайылықты білу үшін қажетті жалпы біліктер мен дағдыларды жетік меңгереді. Білім алушылардың дербестігі өз бетінше ойлау, туындаған жағдайларды бағдарлау және қажетті жағдаяттарда дұрыс шешімдер табу қабілетінде көрінеді.

Өзіндік жұмыстың келесідей дидактикалық мақсаттарын атап өтуге болады:
— білімді бекіту, тереңдету, жүйелеу, жаңа оқу материалын өз бетінше меңгеру;
— жалпы еңбек және кәсіби дағдыларын дамыту;
— өзіндік ақыл-ой еңбегі мен кәсіби құзыреттерін қалыптастыру;
— ойлаудың тәуелсіздігін дамыту;
— өзін-өзі ұйымдастыру қабілеттерін қалыптастыру [19; 86].

Білім алушылардың өзіндік жұмысын сәтті ұйымдастыру және оны жүзеге асыру факторлары: оқуға деген оң мотивациясы; танымдық қызығушылық; өзіндік жұмысты өздігінен ұйымдастырудың практикалық біліктері мен дағдылары; курстардың заманауи бағдарламалары; әдістемелік өңдеулер мен нұсқаулар; оқулықтар және басқа да ақпараттық көздер; заманауи зертханалық жабдықтар; оқылатын курстың әр пәні бойынша өзіндік жұмысты ұтымды жоспарлау; оқытушылар тарапынан тиімді басшылық жасау; дербес тапсырмалардың орындалуын жүйелі бақылау және есепке алу.

ЖЖОКБҰ-да оқу іс-әрекетінің бұл түрінің маңыздылығы білім алушылардың өзіндік танымдық іс-әрекетке қабілеттілігін болжайтын, тұрақты өзін-өзі ұйымдастыру қажеттілігін қалыптастыру міндеті тұрғанда өзекті екені анық.

Өзін-өзі ұйымдастыру — жеке тұлғаны дамытуды мақсат ететін әлеуметтік тәжірибені игеру үшін, ішкі өзіндік ұйымдастыру жүйесі ретінде қарастырылады [20; 24]. Өзін-өзі ұйымдастыру дағдыларының автоматты түрде пайда болмайтынын білеміз, бірақ ЖЖОКБҰ-да бүкіл оқу үдерісін белгілі бір ұйымдастырумен ғана мүмкін болатынын да ескеру қажет. Тек осы жағдайда болашақ педагогтың кәсіби өзін-өзі ұйымдастыру құзыреті қалыптасады.

Болашақ педагог тұлғасын қалыптастыруда жетекші рөлді ең алдымен, жақсы ұйымдастырылған оқу-практикалық жұмысы және өзіндік жұмысы атқарады. Болашақ педагогтың жеке басын қалыптастырудың маңызды құрамдас бөлігі — өзін-өзі ұйымдастыру қызметі, білім мен практикалық тәжірибені игеру және тереңдету. Өзін-өзі ұйымдастыру — бұл күрделі үдеріс, оның негізінде танымдық белсенділікті ынталандырып, болашақ педагогтың кәсіби қасиеттерін қалыптастыруды қамтамасыз етеді [21; 37].

Өзіндік жұмысты сәтті ұйымдастыру барысында білім алушылардың жоспарланған жұмысты орындау үшін объективті мүмкіндіктері анықталды. Бұл мүмкіндіктерді біз ұсынған өзіндік жұмысты ұйымдастырудың жеке-сараланған тәсіліне сүйене отырып анықтау қажет, мұнда білім алушылардың оқу курсына байланысты тиісті қиындық деңгейіндегі тапсырмалар беріледі.

Өзін-өзі ұйымдастыру үдерісін жүзеге асырудың қажетті шарттары — орын мен уақытты дұрыс ұйымдастыру, өз бетінше жұмыс істеу үшін қолайлы психологиялық-физиологиялық, санитарлық-гигиеналық жағдайлар жасау. Бұл орайда, магистрант тек қана оқу мен танып-білу жеткіліксіз екенін түсіну керек, ол үшін қажетті білік пен дағдыларға ие бола отырып, ақыл-ой мәдениетін меңгеру керек. Зияткерлік білік пен дағдыларды игеру болашақ педагогтың өзін-өзі ұйымдастыру іс-әрекетінің маңызды құрамдас бөлігі. Бұл біліктер мен дағдылар өздігінен пайда бола алмайды, оларды игеру керек. Өзіндік жұмысты ұйымдастыру барысында ақпараттық көздермен жұмыс істеудің әртүрлі әдістемелік әдістерін меңгере отырып, баяндамалар, хабарламалар, ғылыми-зерттеу жұмыс түрлерін дайындауға үйренеді [22; 41].

ЖЖОКБҰ-да ұйымдастырылатын өзіндік жұмыс барысында магистрант өзінің кәсіби құзыреттілігін қалыптастыра отырып, білімін өздігінен меңгеруі, іскерлігін дамытуы, табысты

болашақ кәсіби қызметі үшін практикалық тәжірибе алуы тиіс. Бұл ретте магистранттың өз бетінше ойлауы, оның ұтымды білім алуын қалыптастырудың маңызды шарты ретінде, маңызды мәселелерді шешу, білім беру материалын түсіну бойынша магистранттың өз белсенділігі үдерісінде қалыптасуы тиіс. Осы мәселелердің ішінде магистранттың жеке және кәсіби қалыптасуы үшін магистратурада оқудың маңыздылығын түсінуі маңызды.

Қазақстан Республикасы Ғылым және жоғары білім министрі 2022 жылы бекіткен Жоғары оку орнынан кейінгі білім берудің мемлекеттік жалпыға міндетті стандарты бойынша оқу жүктемесі магистранттың барлық оқу қызметін қамтиды. Оларға дәрістер, семинарлар, практикалық сабақтар, курстық жұмыстар (жобалар), практикалық және зертханалық жұмыстар, ғылыми немесе кәсіптік тағылымдама, ғылыми-зерттеу жұмысы, магистрлік диссертацияны (жобаны), өзіндік жұмысты, оның ішінде оқытушының жетекшілігімен орындау жатады. Аталған әрбір оқу қызметінде аудиториялық және аудиториядан тыс өзіндік жұмыс түрлері жүзеге асырылады [18].

Оқытудың кредиттік технологиясына сәйкес білім алушылардың өзіндік жұмысы оқытушының жетекшілігімен жүргізілетін өзіндік жұмысы (бұдан әрі — ОБӨЖ) және толық өзі орындайтын жұмысы (бұдан әрі — БӨЖ) болып екіге бөлінеді.

Білім алушының өзіндік жұмысы (БӨЖ) — өз бетінше оқуға берілген, оқу-әдістемелік әдебиеттермен және ұсынымдармен қамтамасыз етілген, тест, бақылау жұмыстары, коллоквиумдар, рефераттар, шығармалар мен есеп берулер түрінде бақыланатын, оқу нәтижелеріне қол жеткізуге бағытталған тақырыптардың белгілі бір тізбесі бойынша жасалатын жұмыс түрі. Ол ЖЖОКБҰ-да білім алушының санатына қарай студенттің өзіндік жұмысы (СӨЖ), магистранттың өзіндік жұмысы (МӨЖ) және докторанттың өзіндік жұмысы (ДӨЖ) болып бөлінеді.

Оқытушының жетекшілігімен жүргізілетін білім алушының өзіндік жұмысы (ОБӨЖ) — ЖЖОКБҰ немесе оқытушы анықтайтын жеке кесте бойынша жүргізіледі. Өзіндік жұмыс білім алушының санатына қарай: оқытушының жетекшілігімен жүргізілетін студенттің өзіндік жұмысы (ОСӨЖ), оқытушының жетекшілігімен жүргізілетін магистранттың өзіндік жұмысы (ОМӨЖ) және оқытушының жетекшілігімен жүргізілетін докторанттың өзіндік жұмысы (ОДӨЖ) болып бөлінеді;

Аталған өзіндік жұмыс түрлерінің бүкіл көлемі білім алушылардан күнделікті өзіндік жұмыс атқаруды талап ететін тапсырмалармен расталады [22].

Көптеген бакалаврды аяқтаған түлектер талдау, салыстыру, реферат жазу, дереккөздермен жұмыс істеу сияқты дағдыларының болуымен ғана шектеліп жатады, бірақ бұл болашақтағы кәсіби қызметінде белгілі бір кедергілер туындататыны сөзсіз. Атап айтар болсақ, өз ойларын нақты және анық жеткізе білмеуі, өз уақытын тиімді жоспарлай алмау, ақыл-ой қызметінің жеке ерекшеліктерін және физиологиялық мүмкіндіктерін ескермеу, өз бетінше жұмыс істеуге психологиялық дайындықтың болмауы, оны ұйымдастырудың жалпы ережелерін білмеуімен байланысты көптеген қиындықтарға тап болуы әбден мүмкін. Сондықтан, ЖЖОКБҰ-да оқытушылардың ӨЖ-ты ұтымды ұйымдастыру, оңтайландыру әдістерін әзірлеу, оларды оқу-тәрбие үдерісіне енгізуі өте маңызды.

Өзіндік жұмыс барысында білім алушылар материалды түсініп қана қоймай, оны есте сақтауы да қажет, себебі, ол пән бойынша өткен оқу материалын тереңдетуге мүмкіндік береді. Көпшілігі материалды жақсы түсініп меңгергенімен, қажетті сәтте белгілі бір мәселені шешуде, жылдам шешім қабылдауда игерген білімдерін қолдана алмай жатады, өйткені олар есте сақтау әдістерін білмейді және есте сақтауды мақсат етпейді. Мұнда біз ақпаратты есте сақтауды, қайта өңдеуді және ұмытуды қамтитын жады мәселесіне тап боламыз. Тәжірибе көрсеткендей, өзіндік жұмыс үдерісінде студенттер көбінесе есте сақтау үшін қайталау әдісін жиі қолданады, бірақ бұл көп уақытты қажет етеді және әрқашан күтілетін нәтижелерді бермейді. Есте сақтау үдерісін тиімдірек ету үшін, ақпаратты мәні жағынан құрылымдау әдістерін кеңінен қолдану қажет. Мысалы, кез келген тақырып бойынша конспект жасау кезінде тірек сөздерді бөліп, тезистер, негізгі атаулар мен маңызды мәлеметтерді жазып алу керек, бұл ақпаратты есте сақтауға ғана емес, оны қайта жаңғырту мүмкіндігін береді.

Жалпы, ЖЖОКБҰ-дағы оқу-тәрбие үдерісіне қатысты мәселелер мен міндеттерді түсіну және оларды шешу қабылдаумен, есте сақтаумен тығыз байланысты. Демек, ол үшін талдау, жүйелеу, салыстыру, жалпылау сияқты ақыл-ой операцияларына жүгіну керек. Мысалы, талдаудың нәтижесінде белгілі деректер ерекшеленеді және белгісіз, яғни табуды қажет ететін міндеттер туындайды. Бұл мәселені қолда бар құралдардың көмегімен немесе басқа ойлау операциялары арқылы шешуге болады. Өзіндік жұмыс үдерісінде ойлаудың маңызды жағы — бұл өз қызметін түсінуге бағытталған рефлексия [11; 77].

Тәуелсіз жұмыс істейтін магистрант болашақ педагог ретінде өз қызметін басқару әдістерін, өзін-өзі ұйымдастыру, өзіндік бақылау және өзін-өзі реттеу әдістерін меңгеруі тиіс. Адамның ақыл-ой әрекеті үшін оның тілмен және сөйлеумен байланысы маңызды. Кез келген ой сөйлеумен ажырамас байланыста пайда болады және әрі қарай дамиды. Сөйлеуді меңгеру деңгейі магистранттың танымдық қызметіне, соның ішінде олардың өзіндік жұмысына үлкен әсер етеді. Сөйлеуді меңгерудің жеткілікті жоғары деңгейі болмаса, табысты оқу іс-әрекеті мүмкін емес. Әртүрлі психикалық үдерістердің ерекшеліктерін ескере отырып, оқытушы студенттердің өзіндік жұмысын ұйымдастыруда тиімді әдіс-тәсілдерді қолдануы керек.

Оқытушылардың тарапынан ӨЖ-ға басшылық жасау біртіндеп оқу үдерісінің субъектісі ретінде білім алушылардың өзін-өзі басқаруына және өзін-өзі ұйымдастыруына ауысуы керек. Магистранттың танымдық қызметі көбінесе оның жеке ерекшеліктерімен анықталады, себебі, ерекше талдау қабілеті бар магистранттар зерттелетін жұмыстың барлық мәліметтері мен негізгілерін бөліп көрсетуге тырысады, бірақ көбінесе оның мағынасын түсіне бермейді, олардың жазбаша жұмыстары егжей-тегжейлі және көлемді болып келеді. Ал керісінше, басқалары ақпаратты қабылдауымен ерекшеленеді, яғни олар бөлшектерге мән бермейді және жалпылауға бейім. Олар зерттелгеннің мәнін тез түсінеді, сондықтан олар қайталауға қарағанда жоспарлар, тезистер, аннотациялар, түйіндемелер жасауда үлкен жетістіктерге жетеді. ӨЖ-ын жоспарлау және ұйымдастыруда оқытушылар осы ерекшеліктерді ескеріп, әртүрлі жұмыс түрлерін ұсынуы керек [21; 81].

Өзіндік жұмысты ұйымдастырудағы оң нәтижелерге педагогикалық көшбасшылықтың кез келген стилінде қол жеткізуге болады. Авторитарлық стильде орындалатын жұмысқа нақты нұсқаулар мен талаптар қойылады, оны орындаудың қатаң мерзімдері анықталады, қатаң бақылау жүзеге асырылады. Демократиялық оқу стилінде тек ұсыныстар беріліп, оқу тақырыбы мен тапсырманың сипатын өз бетінше таңдай алады: эссе, сыни шолу, баяндама және т.б. жұмыс нәтижелерін ауызша баяндау немесе жазбаша тапсыра алады. Магистранттар өз уақыттарын өздері жоспарлайды және оқытушының келісімі бойынша жұмысты тапсыру мерзімі әртүрлі болуы мүмкін. Демек, өзін-өзі ұйымдастыру магистранттардан ақыл-ой қасиеттерін дамытуды талап етеді: дербестік, қызығушылық, байқағыштық, икемділік, жүйелілік, танымдық міндеттерді қою және оны шешу қабілеті. Өз кезегінде, өзін-өзі ұйымдастыру іс-әрекетінің жүйелі түрде болуы тұлғаның психикалық дамуына үлкен ықпал ететіндігі сөзсіз [20; 33].

Өзін-өзі ұйымдастыру дағдыларын қалыптастыруда семинарлар мен практикалық сабақтарына жүйелі түрде дайындалуда ӨЖ маңызды рөл атқарады. Сабақтарға дайындық барысында көпшілігі дәрістер мен оқулықтарды пайдаланады, бірақ ол жеткіліксіз. Ал біраз бөлігі өздігінен таңдалған қосымша дереккөздерді қолданады. Бірақ өз бетінше жұмыс істеу және уақытты ұтымды бөлу қабілеттерінің болмауына орай, магистранттардың оқу және өзіндік жұмысы қанағаттанарлықсыз болады.

Семинарға қатысу магистранттың ой-өрісі мен сөйлеу мәдениетін дамытуға, педагогикалық әдептілік пен көпшілік алдында сөйлеу дағдыларын тәрбиелеуге ықпал етеді, ал ол болашақ педагог тұлғасын қалыптастыруда ерекше орын алады. Сонымен бірге семинарлар еңбекқорлықты тәрбиелеудің тиімді құралы болып табылады, әлеуметтік-азаматтық ұстанымды, болашақ кәсібіне саналы көзқарасты дамытуға көмектеседі, танымдық белсенділікті дамытады, қосымша және арнайы әдебиеттерді пайдаланып, әртүрлі ақпараттық көздермен өз бетінше жұмыс істеу дағдыларын дамытады.

Ұжымдық ӨЖ-тың белсенді түрі бойынша ЖЖОКБҰ-да оқу-практикалық сабақтардың маңызды түрі — пікірталастар. Олардың білімділік және тәрбиелік құндылығы — талқыланатын мәселелерді терең зерттеуді, сондай-ақ барлық магистранттармен талқыланатын тақырыптың белгілі бір жағдайын қорғауға дәлелдерді жұмылдыруды талап етеді. Бұл өзіндік жұмыстың шығармашылық бағытын көрсетеді, ол ұжымдық ақыл-ой әрекетін шындықты іздеуге, талқыланатын мәселені берік игеруге бағытталған.

Диспуттар пікірталастың әрбір қатысушысының жоғары ақыл-ой белсенділігін тудырады және ауызша пікірталасты жүргізу дағдыларын дамытады, шығармашылық ойды оятады, сонымен қатар магистранттардың дербестігі дамып, ойлаудың анықтығын қалыптастырады. Магистранттардың бұл шығармашылық тәуелсіздігі семинар сабақтарында қойылған мәселелерді ұжымдық талқылау ретінде пікірталаста үлкен көрініс табады.

Пікірталас семинарларды ұйымдастырудың маңызды түрлерінің бірі болса, онда мұндай негіздегі пікірталас ұжымдық әңгіменің, білім алудың, таным мақсаттарына қызмет ететін

шығармашылық пікірталастың маңызды формаларының бірі болуы мүмкін. Кез келген тақырып бойынша сұрақты талқылап, қойылған мәселенің шешу жолын табу магистранттарды қызықтырады. Бірақ семинарда пікірталастар өздігінен емес, зерттелетін материалдың мазмұнын тереңірек және жан-жақты ашу, оны егжей-тегжейлі талдау, зерттелетін нәрсені өз көзқарасымен бекіту немесе дұрыс емес пікірден бас тарту үшін қажет. Осылайша, пікірталас ғылыми негізделген, сенімді білім алуға ғана емес, сонымен бірге болашақ педагогтың дүниетанымы мен жеке басының қалыптасуына әкелетін тиісті сенімдерді дамытуға ықпал етеді [23; 133].

Сонымен, болашақ педагог ретінде магистранттардың өзін-өзі ұйымдастыру құзыреттерін қамтамасыз ету үшін, ЖЖОКБҰ-да өзіндік жұмыстың алуан түрлілігі мен оларды ұйымдастыруда педагогтың рөлі маңызды. Магистранттардың сабақтарға белсенді қатысуы, олардың жұмысының өнімділігі педагогтың өз жұмысын қалай ұйымдастыруына байланысты. Бірақ дербестікті дамытуда, өзін-өзі бақылау және өзін-өзі ұйымдастыру дағдыларын қалыптастыруда оқу үдерісіндегі бақылауды дұрыс ұйымдастыру маңызды рөл атқарады. Психологтар мен педагогтардың пікірінше, дұрыс ұйымдастырылған бақылау тек кері байланыс орнату функциясын ғана емес, сонымен бірге тәрбиелік әсер етеді, мысалы: оқуға деген қызығушылықты арттыруға ықпал етеді, өзін-өзі ұйымдастыру мен өзін-өзі бақылау дағдыларын қалыптастыруды, білімді өзін-өзі бағалауды қамтамасыз етеді.

Болашақ педагогтарды даярлауда және оқу үдерісінің тиімділігін арттыруда магистранттардың өзін-өзі ұйымдастыру құзыреттерін қалыптастыруға жағдай жасайтын өзіндік жұмыс үлкен рөл атқарады. Демек, ЖЖОКБҰ-да ұйымдастырылатын өзіндік жұмыс тек форма ғана емес, сонымен қатар оқыту құралы да болып табылады, өйткені оның бірқатар функциялары бар, магистранттардың дамыту, ақпараттық, ынталандыру, зерттеу және тәрбиелік дағдыларын қалыптастырады. Дамытушылық функция креативті қызмет түрлерімен таныстырады және оның зияткерлік қабілеттерін байытады; ақпараттық функция сабақтағы оқу қызметін қамтиды; ынталандырушы функция кәсіби тұрғыдан дамуына ықпал етеді; зерттеу функциясы шығармашылық ойлаудың жаңа деңгейін қалыптастырады; тәрбиелік функция жеке қасиеттері мен қабілеттерін дамытады. Жоғарыда айтылғандарға сүйене отырып, өзіндік жұмыстың негізі бүкіл оқу үдерісін ынталандыратын және анықтайтын ғылыми-танымдық проблема болып табылатындығын атап өткен жөн.

Ғылыми-педагогикалық магистратурада магистранттың оқу және ғылыми қызметінің барлық түрін қоса алғанда, оқудың барлық кезеңінде кемінде 120 академиялық кредитті мөлшері анықталған, ол кемінде 3600 академиялық сағатты құрайды [18].

Жоғары және (немесе) жоғары оқу орнынан кейінгі білім беру ұйымдарында оқытудың кредиттік технологиясы бойынша оқу үдерісін ұйымдастыру қағидаларына сәйкес білім алушының оқытушымен байланыс жұмысының арасындағы уақыт арақатынасын және оқу қызметінің барлық түрлері бойынша білім алушылардың өзіндік жұмысын ЖЖОКБҰ дербес анықтайды. Бұл ретте аудиториялық жұмыс көлемі әр пән көлемінің кемінде отыз пайызын, демек қалған 70 % -ын аудиториядан тыс (дербес) жұмыс көлемі құрайды.

Мысалы 7М01402 — «Инженерлік-педагогикалық қызмет» білім беру бағдарламасы бойынша магистранттардың ғылыми-зерттеу жұмысы, оның ішінде тағылымдамадан өту және магистрлік диссертацияны орындауға 2,3,4-семестрді қоса алғанда барлығы 720 сағат жоспарланса, оның 90 сағаты ОБӨЖ, ал қалған 630 сағаты БӨЖ-ге арналған. Сол сияқты магистрлік диссертацияны рәсімдеу және қорғауға 240 сағат жоспарланса, оның 20 сағаты ОБӨЖ, 220 сағаты БӨЖ-ты құрайды. Бұл сағаттардың барлығы оқу жылының басында магистранттардың жеке оқу жоспарында бекітіледі. Айтылғандарды негізге ала отырып, магистрант аудиториядан тыс бір күндегі уақыттың шамамен 3-4 сағатын оқу пәндері бойынша дайындыққа, өзінің ғылыми-зерттеу жұмыстарына, өзіндік жұмыс тапсырмаларын орындауға арнауы тиіс. Осыған орай, магистранттарға сауалнама жүргізілді, оның нәтижелері келесідей:

магистранттардың бір күнде өзіндік жұмыс тапсырмаларын орындауға бөлетін уақыттың (сағат) орташа мөлшері диаграмма арқылы көрсетілген (1-сурет).

сағат мөлшері

- 3-4 сағат
- 1-2 сағат
- 1 сағаттан кем
- мүлде бөлмейді
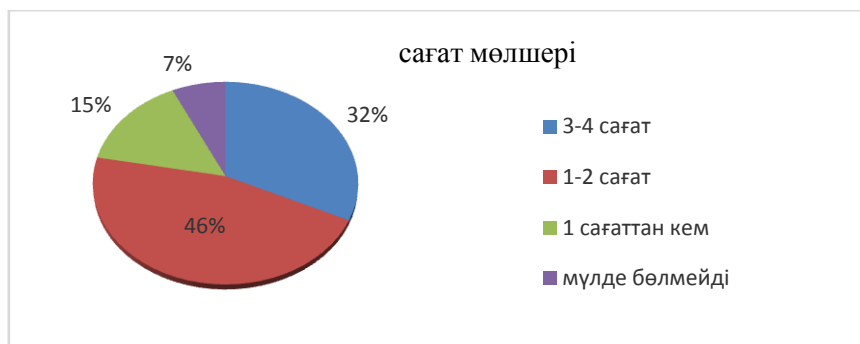
1-сурет. Күнделікті жұмсалған сағат мөлшері

1) магистранттардың оқу пәндерінен сабақтарға дайындалуы және ҒЗЖ-мен жүйелі түрде айналысуға кететін бір аптадағы жұмсалған уақыт мөлшері ұсынылған (2-сурет).

уақыт мөлшері

- күнделікті
- аптасына 3-4 күн
- демалыс күндері
- жүйелі емес
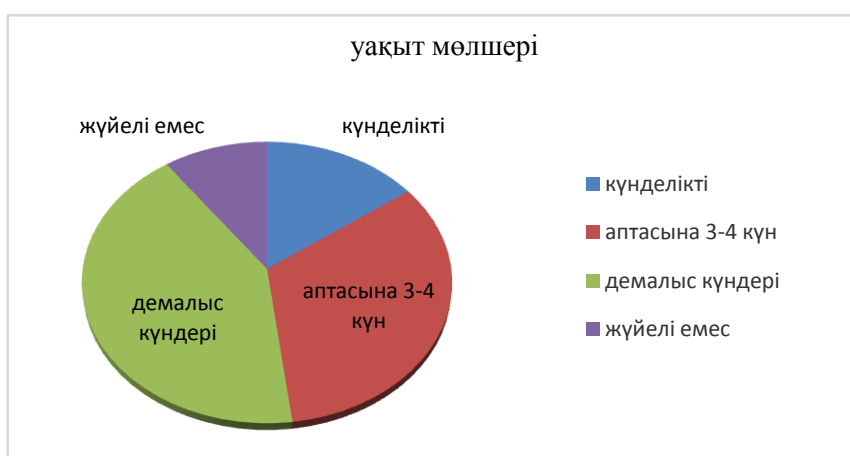
2-сурет. Бір аптада жұмсалған уақыт мөлшері

2) оқу жүктемесімен қатар, өзіндік жұмыс тапсырмаларын аптасына біркелкі етіп бөлуге қатысты сұрақтың нәтижесі (3-сурет).

уақытты тиімді бөлу

- жоғары
- орташа
- оңтайлы

3-сурет. Бір аптаға тапсырмаларды тиімді жоспарлау

3) білім алушылардың оқу іс-әрекетін өзін-өзі ұйымдастыру деңгейі әртүрлі бағыттағы ақпарат көздерін пайдалануды білдіреді. Магистранттар өзіндік жұмыс барысындағы ақпарат көзі ретінде келесілерді қолданатындарын көрсетті:

— пән бойынша дәрістерді — 13,3 %;
— қосымша әдебиеттер — 13 %;
— ғаламтор ресурстарын — 73,7 %.

4) өзіндік жұмыстың тиімділігі неге байланысты деген сұраққа келесідей жауап қайтарылды:

— тұлғаның жеке күш-жігеріне — 82,6%;

— педагогтың ұйымдастыруына — 17,4%.

5) өзіндік жұмыстарға магистранттардың даярлығын оқытушы тарапынан қатаң бағалау кезінде пәнге деген қатынасы туралы мәселеде сауалнамаға қатысқандардың 76,2 %-ы оқытушының қатаң бағалауы және авторитарлық стильді қолдануы кезінде дайындыққа көбірек көңіл бөлетіндерін көрсетті. Ал қалған 23,8 %-ы демократиялық стиль мен еркіндікті қолдады.

6) «Сіз үшін өзіндік жұмыс деген не?» сұрақ бойынша төмендегідей ұсынымдар берілді және олардың жауаптары пайыздық мөлшермен келтірілді.

— пәнді немесе ғылымды терең білу және зерттеу мүмкіндігі — 25 %;
— өзін дәлелдеу мүмкіндігі — 15 %;
— оқытудың қажетті, ажырамас бөлігі — 57 %;
— өзіңізді біраз уақыт бос ұстау мүмкіндігі — 3 %.

7) Сауалнаманың соңғы сұрағы келесідей: «Сіз оқытушыға өзіндік жұмысты тиімді ұйымдастыру мақсатында қандай тапсырмаларды ұсына аласыз?». Әркім өз бетінше жұмыс жасаудың ерекше нұсқасын ұсынып, бұл сұраққа жазбаша жауап берді. Сонымен, жауаптарды жүйелеу кезінде келесі нұсқалар ұсынылды:

а) баспа мәтіндерінің көмегімен (үй тапсырмаларын тест түрінде орындау; семинарларды баспа түрінде орындау; дәрістерді баспа түрінде жазу).

ә) компьютердің көмегімен (интернет арқылы қашықтықтан оқыту; презентация түрінде тап-сырмаларды орындау; тақырыптық бейнефильмдер көру және талдау, салыстыру жүргізу).

б) әлеуметтік желілердің көмегімен (білім алушылардың оқытушылармен бірігіп мәселелерді талқылау; жобалар өңдеу; кейс-стади тапсырмалары; интернет-ресурстың танымал сілтемелерімен бөлісу; әлеуметтік желілердегі сауалнамалар жүргізу, оның нәтижелерін талдау және деректер бойынша статистика жасау).

в) ұялы телефондардың (смартфондардың) көмегімен (Интернетке кіру үшін смартфондарды пайдалану; сабақта пайдалануға рұқсат ету; үй тапсырмасын жіберу).

Сонымен, магистранттарға жүргізілген сауалнама нәтижелерін талдау барысында өзіндік жұмыстың құрылымдалған және іштей ынталандырылған жоғары деңгейін 52 %, орташа деңгейлік көрсеткішті 33 %, төмен деңгейді 15 % құрайды. Мұндай деңгейлік көрсеткіштерді көрсетудің бірнеше себептері бар, олардың ішінде: магистранттардың көпшілігі жұмыспен қамтылған, отбасылы адамдар болғандықтан, жауапкершілікті сезінеді, сонымен бірге оқытушы тарапынан бақылау және өзіндік бақылау да жүзеге асырылады. Осы сауалнаманың сұрақтарына жауап беру көрсеткіштері, магистранттар арасында оқу іс-әрекетінің өзін-өзі ұйымдастыруын қалыптастырудағы оң нәтижені көрсетеді. Бұл өз кезегінде кәсіби маңызды құзыреттердің қалыптасуын білдіреді.

Қорытынды

Жалпы айтқанда, ЖЖОКБҰ-дағы білім алушылардың өзіндік жұмысын ұйымдастыру болашақ педагогтың өзін-өзі ұйымдастыру құзыреттерін қалыптастыру мүмкіндігін беретіні айдан анық және осы үдеріске айтарлықтай оңтайлы ықпал етеді деген қорытынды жасауға болады. Зерттеу барысын-да күнделікті практикалық әрекетте өзін-өзі ұйымдастыру құзыреттерін шебер пайдалану магистранттарға көптеген мүмкіндіктер беретіндігі анықталды:

— ЖЖОКБҰ оқу үдерісінде меңгерген білімдеріне сүйеніп, білім беру стандарттарының талап-тарына, өз қажеттіліктері мен мүдделеріне сәйкес дербес тереңдету және оны әрі қарай жетілдіру;

— кәсіби тәжірибеде білім, білік пен дағдылар жиынын қолданып, ақыл-ой еңбегі мен оны ғылыми ұйымдастыру әдістемесін игеру;

— болашақ педагогтың кәсіби қызметіне қажетті кәсіби-маңызды қасиеттер мен қабілеттерді қалыптастыру;

— шығармашылық педагогикалық жұмысқа және кәсіби өзін-өзі тәрбиелеуге дайындалу;

— өзін-өзі тәрбиелеу мен өзіндік жетілу.

Қорыта келе, семинар мен практикалық сабақтарды ұйымдастырудың аталған түрлерін өзіндік жұмысты ұтымды ұйымдастыру формалары ретінде қарастыруға болады. Өйткені, олардың әрқайсысы болашақ педагогтың өзін-өзі ұйымдастыру құзыреттерін қалыптастыру мүмкіндігін береді. Дегенмен, ЖЖОКБҰ-да жүзеге асырылатын оқу-тәрбие үдерісінің семинар және практикалық сабақтарын ұйымдастырудың бұл түрлерімен ғана шектеліп қалмайды.

Алайда, жоғарыда айтылғандай, әлеуметтік жағдайлар айтарлықтай серпінді әсер ету нәтижесінде болашақ педагогтарға қойылатын талаптарға ерекше назар аудару қажеттігі ескеріледі.

Сондықтан, бұл мәселені зерттеу өте ұзақ деп айтуға болады, бірақ алынған нәтижелер қоғамдағы өзгерген жағдайларды, соның ішінде білім алушылардың ықтимал мінез-құлқын міндетті түрде ескере отырып, үнемі талдау мен жаңартуды қажет етеді.

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Н.С. Байжуманова, А.С. Раимкулова

Роль самостоятельной работы в формировании компетенций самоорганизации будущего педагога

В статье рассматривается роль самостоятельной работы, организуемой в организациях высшего и послевузовского образования (ОВПО), и их взаимосвязь в формировании компетенций самоорганизации будущего педагога. Самостоятельная работа характеризуется как одна из важнейших составляющих педагогического процесса в ОВПО. Кроме того, определяется дидактическая цель самостоятельной работы, важные характеристики особенностей их организации и применяемых методов. Проблемы исследования раскрываются в определении роли самостоятельной работы в формировании компетенций самоорганизации будущих педагогов. Теоретическая значимость исследования заключается в том, что правильно и эффективно организованная самостоятельная работа оказывает непосредственное влияние на формирование качеств, необходимых для профессиональной деятельности будущего педагога, а также компетенций самоорганизации. Самостоятельная работа рассматривалась в рамках организации аудиторных и внеаудиторных занятий. Такая работа в процессе профессиональной подготовки будущих педагогов оказывает существенное влияние на формирование профессиональных умений и навыков, личностных качеств и способностей, необходимых для самоорганизации, культуры умственного труда, навыков самостоятельного усвоения новых знаний. Поэтому, в исследовательской работе в роли будущего педагога выступили обучающиеся магистратуры научно-педагогического направления Карагандинского технического университета имени Абылкаса Сагинова и представлены их результаты. Результаты анкетирования показывали положительную динамику в формировании компетенций самоорганизации учебной деятельности среди магистрантов, а значит, отражают формирование профессиональных компетенций.

Ключевые слова: самоорганизация, самостоятельная работа, будущий педагог, магистрант, педагогический процесс, педагогические навыки, компетенции, профессиональная деятельность, ОВПО.

N.S. Baizhumanova, A.S. Raimkulova

The role of independent work in the formation of self-organization competencies of a future teacher

The article examines the role of independent work organized in higher and postgraduate education institutions (HEIs) and its connection to the development of self-organization competencies in future educators. Independent work is identified as a crucial component of the pedagogical process in HEIs, focusing on its didactic purpose, organizational characteristics, and applied methods. The research addresses the significance of independent work in developing self-organization competencies in future educators. The theoretical importance of the study lies in the fact that properly and effectively organized independent work directly impacts the development of qualities necessary for the professional activities of future educators, as well as their self-organization competencies. Independent work was analyzed within the framework of both classroom and extracurricular activities. Independent work in the professional training of future educators significantly influences the development of professional skills, personal qualities, and abilities necessary for self-organization, intellectual labor culture, and the independent acquisition of new knowledge. In this context, the research involved master's students in the scientific-pedagogical direction from Karaganda Technical University named after A. Saginov. The survey results demonstrated a positive dynamic in the formation of self-organization competencies in educational activities among the master's students, reflecting the development of their professional competencies.

Keywords: self-organization, independent work, future teacher, undergraduate, pedagogical process, pedagogical skills, competencies, professional activity, HEIs.

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Formation of key competencies through the studying geopolitics at school

The present study analyzes the development of key competencies in secondary school students through the studying geopolitics in the school geography course. The relevance of this study is due to the need of preparing students for life in a globalized world, which requires the formation of competencies, such as critical thinking, information literacy, general cultural skills, teamwork etc. Studying of geopolitics help students better understand international relations and global processes, which is important for their adaptation and successful socialization. The primary objective is to examine the role of studying of geopolitics in formation of key competencies in students. The research method includes content analysis of educational materials, qualitative analysis of practical assignments of the geopolitics section in high school geography textbooks, a review of scientific publications regarding the development of key competencies, and a survey among school students. 101 students of 10-11 grades took part in the survey, the result of which confirm that most students realize the importance of geopolitics for the analysis and solution of global problems, such as diplomatic conflict resolution and crisis forecasting. Practical tasks in textbooks demonstrate how creative projects and tasks help students to development of competencies essential for adaptation in the modern globalized world. Thus, the competency-based approach highlights significance of the comprehensive development of students to solve complex problems and interact in international environment.

Keywords: geopolitics, school education, key competencies, critical thinking, globalization, teaching methods.

Introduction

The modern educational paradigm requires that students develop key competencies that go beyond the simple acquisition of facts. Along with acquiring geographical knowledge, for students is important to develop skills and core competencies that will help them critically think about real-world issues, interact with people and places, and become increasingly independent and capable members of society [1, 2]. These competencies are essential for successful adaptation in a changing world. Competence is the capability and willingness of an individual to effectively apply knowledge, abilities, and skills in various situations. It is created within the context of a competency-based approach [3, 4], which includes active learning methods and practical activities. An education system grounded in this approach prepares students or successful adaptation in the world by fostering skills such as communication, critical thinking, develops cross-cultural understanding and the ability to learn independently, etc. In this context, the study of geopolitics in school curricula plays an important role. Geopolitics in school education covers the section, which study the relationship between geographical, political and economic factors in the international arena [5].

Thus, the educational paradigm focused on the competency-based approach and the inclusion of geopolitics in school curricula complement each other. They contribute to the holistic development of students, preparing them to tackle complex issues in modern world.

In this work, we will try to answer the following questions: What competencies can be considered as key for students? How do school programs integrate the study of geopolitics to form key competencies in students? How does the study of geopolitics at school help prepare students for life in a globalized world?

The purpose of the work is to identify the key competencies formed in secondary school students by studying geopolitics in the school curriculum, and to evaluate their importance in preparing for life in a globalized world.

Tasks of the work:
- to determine the list of key competencies formed in students when studying geopolitics;
- to study how school programs integrate geopolitical topics to form these competencies;
- to assess the importance of key competencies for preparing students for life in a globalized world.

Materials and methods

To study the formation of competencies within the school geography course by studying the "Geopolitics" section, we used geography textbooks for senior grades of Kazakhstan, scientific articles and studies on the competency-based method in education, as well as national educational standards. The research methodology included several stages and approaches that provide a comprehensive understanding of the competency's formation process in schoolchildren. First, a content analysis of educational materials was conducted, in particular, geography textbooks for 10th and 11th grades. The aim of this work is to determine the key topics covered in the "Geopolitics" section, in addition to the methods and approaches to their teaching. Particular attention was paid to the practical works and project works and also to the methodological instructions for them. It was made to understand how these assignments can help school children develop some competencies during the studying of this section. Next, a qualitative analysis of scientific articles and studies on the competency-based approach in education and, in particular, the formation of competencies through the study of geography and geopolitics was conducted. This analysis included a study of the theoretical foundations of the competence-based approach, as well as practical examples of its implementation in the educational systems of different countries. Particular emphasis was placed on studies conducted within the context of Kazakhstan to understand the specifics of the national educational system. At the next stage, a survey method was used (Google Forms) to conform the assumptions about the influence of studying of geopolitics on the formation of competencies. The survey was conducted among 101 high school students of grades 10-11 in Almaty, and its purpose was to identify what competencies students develop in the process of studying geopolitics. The survey questions were aimed at assessing the understanding of key geopolitical topics, their significance and influence on the awareness of global challenges and international relations. The survey results were compared with the findings of the analysis of educational materials and scientific research. This made it possible to identify general trends and features of the formation of competencies through the study of geopolitics, as well as to determine the key competencies developed in the learning process.

Results and discussion

There are many interpretations of the term "competence". A.V. Khutorskoy gives the following definition of the term, that competence — is an alienated, predetermined social requirement for the educational preparation of a person, necessary for effective and productive activity in a specific area [6]. Messick [7] describes competence as the knowledge and abilities a person processes in a particular subject area, irrespective of how they are acquired, whether through training, experience or other means. Key competencies are vital skills and abilities that enable a person to comprehend situations and achieve success in both personal and professional life in today's society. These competencies are most important for the comprehensive development of students. The DeSeCo (Definition and Selection of Competencies) project [8], initiated by the Organization for Economic Co-operation and Development (OECD), also developed its own classification of key competencies necessary for successful functioning in modern society [9; 44]. This classification includes various competencies aimed at effective interaction in heterogeneous groups, autonomous action and instrumental use of resources (Table 1).

T a b l e 1

Selected key competencies in the DeSeCo project

Weinert (2001, p. 52)	Canto & Dupuy (2001, p. 79–90)	Haste (2001, p. 103–117)
■ Oral and written mastery of the mother tongue ■ Mathematical knowledge ■ Reading competency for rapid acquisition and correct processing of written information ■ Mastery of at least one foreign language ■ Media competence ■ Independent learning strategies ■ Social competencies ■ Divergent thinking, critical judgements and self-criticism	■ Competencies for coping with complexity ■ Perceptive competencies ■ Normative competencies ■ Co-operative competencies ■ Narrative competencies	■ Technological competence ■ Dealing with ambiguity and diversity ■ Finding and sustaining community links ■ Management of motivation, emotion and desire ■ Agency and responsibility

C o n t i n u a t i o n o f T a b l e 1

Perrenoud (2001, p. 133–144)	LeVy & Murnane (2001, p. 153)	Ridgeway (2001, p. 207–210)

■ Being able to identify, evaluate and defend one's resources, rights, limits and needs
■ Being able, individually or in a group, to form and conduct projects and to develop strategies
■ Being able to analyse situations, relationships and force fields systematically
■ Being able to co-operate, act in synergy and participate in a collective and share leadership
■ Being able to build and operate democratic-type organizations and systems of collective action
■ Being able to manage and resolve conflicts
■ Being able to play by the rules, using them and elaborating on them
■ Being able to construct negotiated orders over and above cultural differences
	■ Basic reading and mathematics skills
	■ Ability to communicate effectively, both orally and in writing
	■ Ability to work productively in groups
	■ Ability to relate well to other people
	■ Familiarity with computers
		■ Joining and functioning in groups
		  ● Ability to take the role of the other
		  ● Ability to negotiate in the face of conflicting interests in order to find mutually acceptable solutions
		  ● Ability to operate democratically in groups
		■ Self-concept and emotion management
		■ Computer literacy

There are different classifications of key competencies, such as the 5 key competencies of the European Council, A.V. Khutorskoy [6], I.A. Zymnaya [10], O.A. Salnikova [11]. The authors conclude that A.V. Khutorskoy's classification currently serves as the basis for further exploration of competencies by various authors. Therefore, in our work we will examine in detail how the study of geopolitics plays a role in developing key competencies proposed by Khutorskoy. We will examine how different aspects of geopolitics can enhance student's cognitive, organizational, creative, communicative, and ideological qualities.

Thus, core competencies, according to A. Khutorskoy include value-semantic, informational, general cultural, communicative, educational and cognitive, social and labor, personal competence (Fig. 1).
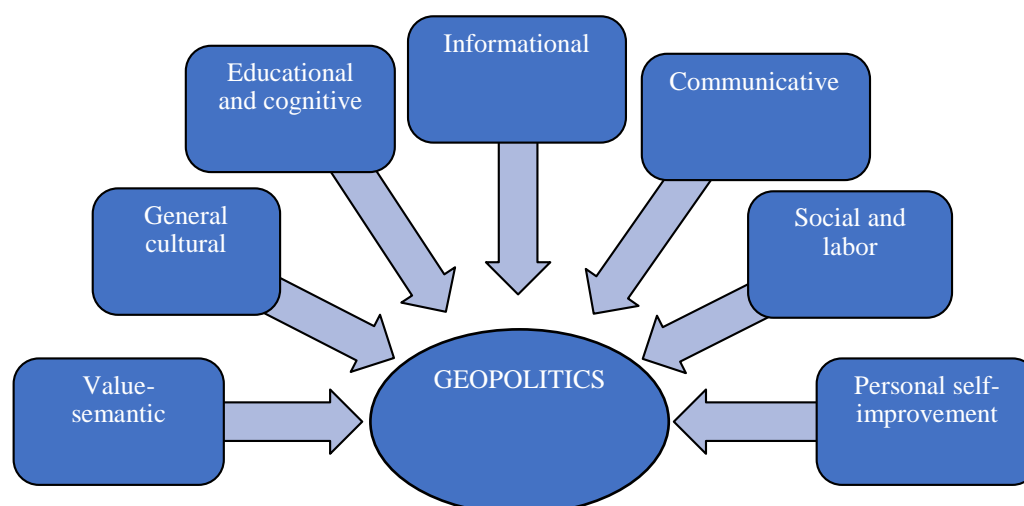
Figure 1. Group of key competencies according to A.V. Khutorskoy

This classification emphasizes the importance of an integrated method for developing competencies, focusing on universal skills necessary for the successful socialization and personal development of students.

How do school curricula integrate the study of geopolitics to develop key competencies in secondary school students?

Geography textbooks in Kazakhstan for grades 10-11 include a whole section devoted to geopolitics. This section includes the following key topics: basics of geopolitics; relevance of geopolitics; global geopolitical space; geopolitics and geographical factors; morphology of state territory; national boundaries; contemporary geopolitical processes; enhancing Kazakhstan's geopolitical security; Kazakhstan's relations with international organizations. An important aspect of studying geopolitics at school is the implementation of practical assignments aimed at developing specific competencies in students. An example of such assignments can be creative projects integrated into textbooks. Let us consider examples of practical work presented in geography textbooks for 10th and 11th grades.

Practical work № 13 (Fig. 2) from the 10th grade textbook [12; 192].

Topic: Developing solutions to strengthen the borders of the Republic of Kazakhstan.

Assignment description. Students are asked to develop solutions to strengthen the borders of Kazakhstan based on the textbook text and official information. This assignment helps students gain a deeper understanding of geopolitical realities and the importance of national security.

Developing key competencies:

- Value-based competencies: analyzing geopolitical stability and border security can help to students understand the importance of the state border and its strengthening for national security, enhancing their patriotism and responsibility.

- General cultural competencies: expanding horizons and developing intercultural competence through studying religious and cultural factors in strengthening borders.

- Educational and cognitive competencies: developing cognitive activity and independence in learning through researching information, analyzing data and developing proposals.

- Information competencies: skills in working with official documents, analyzing cartographic and text data.

- Communicative competencies: ability to clearly express thoughts, work in a group and interact with other participants.

- Social and labor competencies: skills in teamwork, planning and distributing tasks.

- Personal self-improvement competencies: developing critical thinking, self-esteem and responsibility for one's decisions and actions.

Practical work № 22 (Fig. 3) from the 11th grade textbook [13; 235].

Topic: Expanding Kazakhstan's geopolitical cooperation.

Assignment description. Students are asked to develop recommendations for improving Kazakhstan's ties with various organizations such as Central Asia, the European Union, the UN, and the Shanghai Cooper-

ation Organization. These assignments help students gain a deeper understanding of the dynamics of international relations and geopolitical priorities.

Developing key competencies:

- Value-based competencies: understanding the importance of international cooperation and developing value orientations based on global and national interests.

- General cultural competencies: expanding horizons, understanding and respecting cultural diversity and international traditions.

- Educational and cognitive competencies: developing cognitive activity and gaining independence by gathering and analyzing information;

- Informational competencies: involve the ability to search for and analyze information, which helps students process data and develop critical thinking skills.

- Communicative competencies: the ability to express ideas, collaborate in a team, work with classmates and defend their point of view.

- Social and labor competencies: abilities in teamwork, planning and distributing tasks.

- Personal self-improvement competencies: personal growth, self-esteem, self-control, goal setting, decision-making and responsibility for actions.

Практическая работа № 13
Разработка решений по укреплению границ Республики Казахстан

Цель работы: на основе использования текста учебника и официальной информации научиться разрабатывать решения по укреплению границ Республики Казахстан.

Задания

1. *Работа с контурной картой:*
   — Обозначить государственные границы Казахстана, подписав названия граничащих с РК государств.
   — Обозначить зелеными звездочками участки границ, где проходят важные транзитные магистрали.
   — Обозначить красными звездочками участки границ, проходящих по высокогорным районам.
2. Проанализируйте возможности и пути проникновения в Казахстан различных опасностей (религиозный экстремизм, незаконные мигранты, перевозка наркотиков и др.) через границу соседних стран.
3. На основе подготовленной схемы и проведенного анализа определите участки государственных границ Казахстана, требующие особой защиты.
4. На основе изучения и анализа официальных документов разработайте собственные предложения по укреплению границ Республики Казахстан.

Итоги работы: использование сравнительных, картографических методов исследования; разработка решений по укреплению границ Республики Казахстан.

Методические указания

Практическая работа рассчитана на 2 ч: на 1-м уроке учащиеся выполняют задания под руководством учителя; на 2-м уроке подводятся итоги выполненной работы.

Работа с контурной картой требует использования политической карты мира, изучения дополнительных материалов. При разработке предложений опирайтесь на официальные документы Министерства иностранных дел РК.

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Практическая работа № 22
Расширение геополитического сотрудничества Казахстана

Цель — разработать решения по усилению связей Республики Казахстан со странами мира, с мировыми и региональными организациями.

Задания

Творческий проект 1. Разработка рекомендаций по усилению связей Казахстана со странами Центральной Азии (на выбор).
Творческий проект 2. Разработка рекомендаций по усилению связей между Казахстаном и странами Европейского союза (на выбор).
Творческий проект 3. Разработка предложений по укреплению связей Казахстана с ООН.
Творческий проект 4. Разработка предложений по укреплению отношений Казахстана с Шанхайской организацией сотрудничества.

Методические указания

Для выполнения практической работы ученики делятся на четыре группы. Каждая группа выбирает одно творческое задание. Практическая работа рассчитана на 2 часа. На 1-м уроке задания выполняются с помощью учителя. В ходе выполнения заданий необходимо использовать методы экспертной оценки (групповая и индивидуальная) и моделирования. На 2-м уроке подводятся итоги работы, ученики представляют презентации.

Разработка рекомендаций по усилению связей Казахстана со странами мира проводится в следующей последовательности:
   — выбор страны;
   — анализ отношений этой страны с Казахстаном на современном этапе;
   — анализ нерешенных вопросов в двусторонних отношениях;
   — изучение возможностей улучшения двусторонних отношений;
   — разработка предложений по укреплению отношений Казахстана с данной страной и аргументированное обоснование рекомендаций.

Разработка рекомендаций по усилению связей Казахстана с международными и региональными организациями проводится в следующей последовательности:
   — история членства Казахстана в данной организации и направления ее деятельности;
   — определить, какие преимущества даст Казахстану укрепление связей с данной организацией;
   — составить список задач, которые Казахстан может выполнять в рамках организации;
   — разработать и обосновать рекомендации по укреплению связей Казахстана с данной организацией.

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Figure 2. Example of an assignment from a 10th grade textbook

Figure 3. Example of an assignment from a 11th grade textbook

The results of a survey conducted among 101 students of grades 10-11 in Almaty revealed that the concept of geopolitics is closely related to geography and its influence on the foreign policy of countries. Data analysis shows that students understand the practical importance of knowledge of geopolitics for solving global problems. The majority of respondents (61.4 %) believe that this knowledge is important for diplomatic conflict resolution, which indicates their awareness of global challenges. Students also highlight the role of geopolitics in developing sustainable development strategies (24.8 %) and forecasting crises (7.9 %), focusing on the importance of an analytical approach and strategic thinking. Most respondents named the economy (more than 30 % give the maximum score) and demography as key factors in the geopolitical potential of countries, which emphasize their ability to highlight significant aspects. Information and natural

factors, on the contrary, were rated as less significant. Students' support for the idea of multipolar world (86.1 %), where influence is distributed among several centers of power, reflects their understanding of the diversity of contemporary international relations (Fig. 4). They named United States (90.1 %), China (72.3 %), Russia (56.4 %), and the European Union (56.4 %) as the most important players on the global stage (Fig. 5), demonstrating their awareness of global interconnections and the importance of the balance of power. In their assessment of current conflicts, students signed out the confrontation between Russia and Ukraine (52.8 %) and the conflict in Syria (37.6 %) as the most significant (Fig. 6), linking them to key global trends such as regional conflicts (32.7 %) and competition between global actors (17.8 %) (Fig. 7). This underscores their understanding of the relationship between local crisis and global challenges. In the context of Kazakhstan, respondents consider economic cooperation (50.5 %) to be the most important aspect of relations with neighboring countries, which is consistent with the identification of international relations (22.8 %) and geographical locations (27.7 %) as key factors determining the country's geopolitical position. Such responses illustrate students' awareness of the importance of strategic resources and Kazakhstan's role in strengthening regional integration and its position on the world stage.
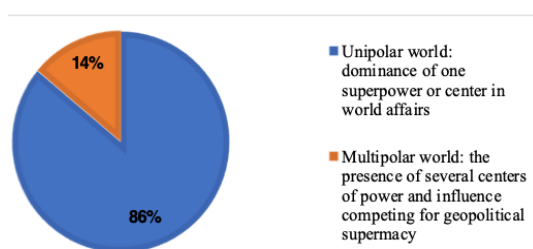
Figure 4. Current global geopolitical landscape
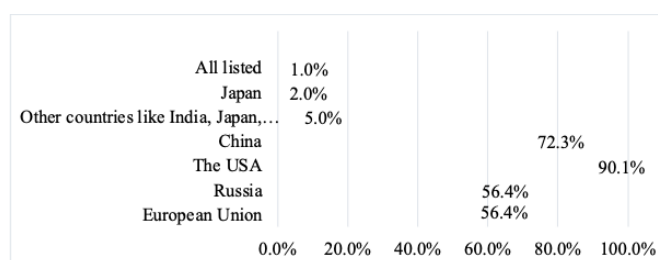
Figure 5. Key actors in modern geopolitics
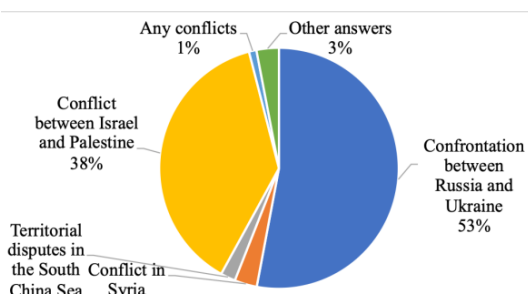
Figure 6. Geopolitical conflicts
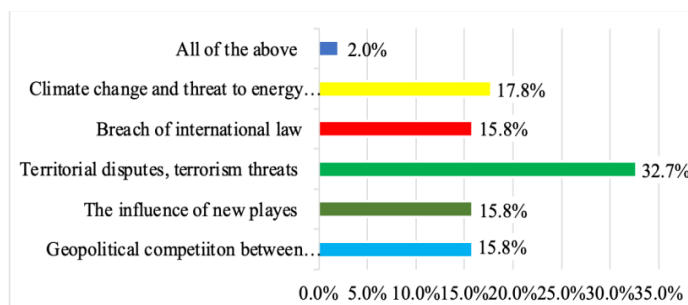
Figure 7. Geopolitical trends

Studying geopolitics at school helps students develop critical thinking skills, enabling them to analyze and evaluate geopolitical situations and events, understand international relations, political and economic systems, and recognize their role and responsibility in a global society. It helps develop analytical skills for collecting, interpreting and using information in decision-making, improves intercultural competence through familiarity with the cultural and social aspects of different countries and peoples, and strengthens the ability to process and manage information, including its search, analysis and critical evaluation. Students also develop their skills of communication which is necessary for debating and discussing on complex topics. They learn to make informed choices that affect both their personal and professional spheres, and become conscious of global issues like climate change, economic instability and international conflicts (Fig. 8).

The inclusion of geopolitical topics in the geography curriculum reflects the need to prepare students to understand complex international relations and global processes, which is quite important in the context of country's geopolitical position. This process not only helps students gain knowledge about complex global processes, but also cultivates essential competencies required for a successful and meaningful life in the contemporary world. Competencies such as critical thinking, information literacy, communication skills, and teamwork play a significant role in preparing students for life in a globalized world. Examples of practical works, such as research about the role of international organizations, show how school programs can foster the development of these main competencies and prepare learners to actively participate in solving global problems.
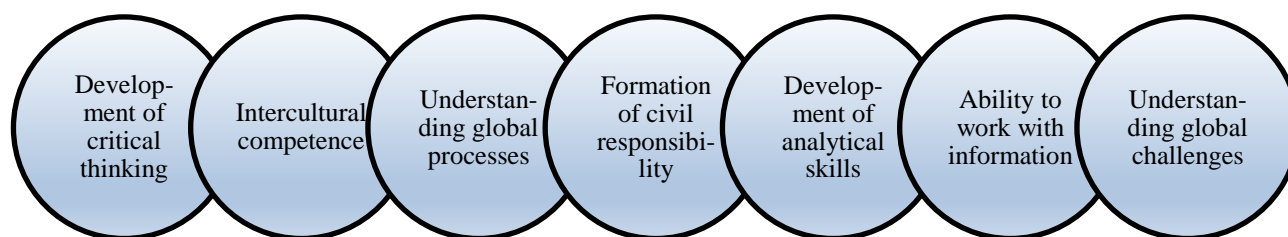
Figure 8. Key competencies for life in a globalized world, formed through the study of geopolitics

The study results indicate that integrating geopolitics into the school curriculum plays an essential role in forming key competencies essential for students' successful socialization and professional growth in a globalized world.

To ensure the full development of competencies in learners, it is quite essential to increase the number of activities aimed at self-regulation skills [14]. To enhance the teaching of geopolitics in schools, it is important to integrate more role-playing games and simulations that foster critical thinking and empathy [15]. Martini's research [16] emphasizes the importance of active learning, which contributes to a better understanding and critical understanding of complex political discourses, which in turn contributes social emancipation of students and their readiness for active participation in political life. The introduction of subject-specific abilities into curricula allows for the formation of critical thinking skills in students through the analysis, interpretation and evaluation of information, especially in the context of interactions between natural processes and human activity, as well as decisions on sustainable development issues [17]. Thus, just as studying geopolitics through various methods develops critical thinking skills, critical thinking helps students identify hidden motives and biases, evaluate the credibility of sources, and consider different perspectives and arguments, which helps in the formation of more accurate and balanced conclusions [18]. Critical thinking and geopolitics therefore mutually enrich each other, developing students' ability to deeply and comprehensively evaluate complex international issues. It is important that the competency concepts are validated through practical application and measurement, which requires careful design of learning situations and test items [19]. Such approaches will help students not only understand current global events, but also participate effectively in global society by making informed decisions and actively interacting with different cultures and communities.

Conclusion

The study of geopolitics in school curricula is essential in developing key competencies, which are crucial or students' successful adaptation and professional growth in today's world. This section not only expands knowledge about the world, but also promotes the development of critical thinking, intercultural sensitivity and global awareness of students. The inclusion of geopolitics in school programs helps to deepen the understanding of geopolitical processes and develops the ability to analyze complex situations. These findings are supported by the results of survey conducted among 101 high school students in grades 10-11 in Almaty. The study showed that students see the practical importance of geopolitics for analyzing and solving global problems. Students note the importance of geopolitical knowledge for diplomatic conflict resolution, developing sustainable development strategies, and forecasting crises, emphasizing the importance of an analytical approach. Among the key factors of counties' geopolitical potential, they highlight economic and demography, demonstrating the ability to focus on the most significant aspects. Further research in this area can focus on assessing the effectiveness of various teaching methods and their influence to the development of students' competencies. It is important to consider how active learning methods, such as role-playing games and simulations, deepen the understanding of geopolitical processes and help to development of critical thinking ability. Practical tasks and creative projects help students apply theoretical knowledge in practice, strengthening their communication and organizational skills. Despite existing challenges and limitations, the potential for growth of this educational field offers extensive opportunities to enhance the educational quality and prepare students for the demands of a globalized world.

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Мектепте геосаясатты оқу арқылы негізгі құзыреттіліктерді қалыптастыру

Мақалада мектеп география курсында геосаясатты зерттеу арқылы оқушылардың негізгі құзыреттіліктерін қалыптастыру қарастырылған. Жұмыстың өзектілігі мынада: оқушылардың жаһанданған әлемдегі өмірге бейімделу қажеттілігі. Бұл процесс ақпараттық сауаттылық, сыни ойлау, командада жұмыс жасай білу қабілеті сияқты негізгі құзыреттерді қалыптастыруды қажет етеді. Мектеп бағдарламасындағы геосаясат бөлімі оқушыларға халықтар арасындағы қатынастар мен жаһандағы процестерді түсінуге көмегін береді, бұл сала білім алушылардың сәтті әлеуметтенуі мен өмірге бейілдеуі үшін өте маңызды. Зерттеу мақсаты — мектептегі білім алушылардың негізгі құзыреттіліктерін қалыптастыру барысында география пәні аясында геосаясат бөлімін зерттеудің рөліне талдау жасау. Ұсынылған жұмыста оқу материалдарын контент-талдау әдістері қолданылды, жоғары сыныптардың географиясы бойынша оқулықтардағы геосаясат бөлімінің практикалық тапсырмаларын сапалы талдау, оқушылардың негізгі құзыреттіліктерін қалыптастыру бойынша ғылыми зерттеулер мен жарияланымдарға шолу жасалды, сондай-ақ білім алушыларға жүргізілген сауалнаманы қамтиды. Сауалнамаға 10-11 сыныптардың 101 оқушысы қатысты, оның нәтижесі оқушылардың көпшілігі геосаясаттың дипломатиялық қақтығыстарды шешу және дағдарысты болжау сияқты жаһандық мәселелерді талдау және шешу үшін маңыздылығын түсінетінін растайды. Мектеп оқулықтарында берілген практикалық тапсырмалар мен шығармашылық жобалар жалпы білім алушылардың негізгі құзыреттіліктерін дамытуға да ықпалы зор екені айқындалды. Осылайша, құзыреттілік тәсіл оқу барысындағы күрделі мәселелерді шешуге және халықаралық ортадағы өзара әрекеттесуге мектеп білім алушыларының кешенді дамуындағы өзектілігін көрсетеді.

Кілт сөздер: геосаясат, мектептегі білім, негізгі құзыреттіліктер, сыни ойлау, жаһандану, оқыту әдістері.

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Формирование ключевых компетенций через изучение геополитики в школе

В данной статье рассматривается формирование ключевых компетенций у учащихся посредством изучения геополитики в школьном курсе географии. Актуальность работы заключается в необходимости подготовки учащихся к жизни в глобализированном мире, что требует формирования ключевых компетенций, таких как критическое мышление, информационная грамотность, общекультурные навыки, умение работать в команде и т.д. Изучение геополитики в школьной программе помогает учащимся лучше понимать международные отношения и глобальные процессы, что важно для их адаптации и успешной социализации. Целью исследования является анализ роли изучения геополитики в школьных программах в формировании ключевых компетенций у учащихся. В представленной работе использовались методы контент-анализа учебных материалов, качественный анализ практических заданий раздела геополитики в учебниках по географии старших классов, обзор научных исследований и публикаций по формированию ключевых компетенций у учащихся, а также опрос обучающихся. В анкетировании приняли участие 101 учащихся 10-11 классов, результаты которого подтверждают, что большинство из опрашиваемых осознают важность геополитики для анализа и решения глобальных проблем, таких как дипломатическое разрешение конфликтов и прогнозирование кризисов. Практические задания в учебниках демонстрируют, как творческие проекты и задачи способствуют развитию компетенций, необходимых для успешной адаптации в современном глобализированном мире. Таким образом, компетентностный подход подчеркивает важность комплексного развития учащихся для решения сложных задач и взаимодействия в международной среде.

Ключевые слова: геополитика, школьное образование, ключевые компетенции, критическое мышление, глобализация, методы обучения.

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Моделирование обновления типовой учебной программы (на примере предмета «Графика и проектирование»)

Актуальность темы исследования выражается в том, что существует противоречие между сложившейся практикой обучения предмету «Графика и проектирование» и отсутствием научного обоснования его целей и содержания. В связи с этим гипотеза исследования заключается в том, что если будет разработано научное обоснование целей и содержания обучения по предмету, то они будут отвечать установленным приоритетам высшего образования, т.к. цели и содержание по данному предмету будут соответствовать целям обучения в средней школе. Для проверки гипотезы применены методологические подходы, позволившие обосновать компоненты модели. Доказано, что оптимальным типом модели является структурно-содержательная модель, позволяющая обеспечить ее структурированность, содержательность и универсальность. Раскрыта концептуальная часть модели и обоснована содержательная часть на примере целей, содержания и результатов обучения по предмету «Графика и проектирование». В частности, целью обучения определено формирование способности читать графическую информацию и выполнять учебное проектирование (мысленное создание и преобразование, фиксация и передача) графических изображений с помощью чертежных инструментов и компьютера, а результатом — развитие по принципу спирального усложнения статических и динамических пространственных представлений обучаемых как универсальной способности для успешной инженерной деятельности. Новизна исследования определяется новым взглядом на принцип разработки типовых учебных программ, заключающийся в учете приоритетов подготовки специалистов для экономики страны. Также установлено, что из модели вытекают нерешенные проблемы, в частности, выявление условий реализации модели, что открывает перспективы дальнейших исследований.

Ключевые слова: моделирование, графика и проектирование, типовая учебная программа, структурно-содержательная модель, инженерная деятельность.

Введение

В Концепции развития дошкольного, среднего, технического и профессионального образования Республики Казахстан на 2023–2029 годы отмечено, что в системе среднего образования требуется решить проблему совершенствования его содержания, отражающего знания, навыки, подходы и ценности, необходимые обучающимся XXI века [1]. Государственный общеобязательный стандарт общего среднего образования декларирует, что «содержание основного среднего образования ориентируется на результаты обучения и определяется учебными программами по учебным предметам, которые разрабатываются на основе требований Стандарта... Содержание общего среднего образования устанавливается на основе интеграции академической подготовки обучающихся для поступления в организации высшего и (или) послевузовского образования и целенаправленного развития самостоятельности обучающихся» [2]. Следовательно, одна из целей этого уровня образования определяется как обеспечение академической подготовки обучающихся к продолжению образования в вузе. Использование данных документов и в последующем других официальных документов в научном исследовании обусловлено предметом нашего исследования, которым является единство целей и содержания образования в определенной области обучения — графической подготовке. В разделе данного документа, посвященного учебному предмету «Графика и проектирование», отмечается, что он «направлен на изучение основ теории графических изображений и усвоение методов геометро-графического моделирования, на развитие проектной творческой деятельности обучающихся, формирование их графической культуры».

Однако из данной формулировки нельзя определить, что именно необходимо формировать, чтобы обучающийся смог поступить в вуз, т.к. простого «изучения основ» недостаточно, а развитие должно опираться на уже существующий уровень, который в данном случае еще не сформирован. Второй вопрос, возникающий в связи этим, заключается в следующем: «какой именно вид академической подготовки могут выбрать обучающиеся?». Конечно, наличие только двух направлений подготовки, предусмотренных в системе среднего образования, не предоставляет большого выбора, но приоритет, к которому склоняется система высшего образования страны, позволяет ответить на данный вопрос. Этот приоритет четко обозначен: 1) в системе технического, профессионального и послесреднего образования по поручению Главы государства 65 % госзаказа направлены на технические специальности, включая машиностроение, транспорт, энергетику, IT, строительство и инженерию. К 2025 году эта цифра вырастет до 70 %, а объем госзаказа до 100 % [3]; 2) в государственном образовательном заказе на подготовку кадров с высшим образованием на технические специальности на 2024-2025 учебный год выделено 19344 гранта, что составляет 30 % от общего числа грантов [4]. Таким образом, учитывая, что технические специальности выбирают абитуриенты с математическими способностями, а технически подготовленные в результате соответствующего обучения выпускники будут лучше выполнять задачи технического профиля, то будет закономерным направить цель и содержание обучения по естественно-научным предметам на формирование компетентности в сфере техники и технологии. Особое место в процессе формирования данной компетентности занимает предмет «Графика и проектирование». Научное обоснование этого процесса представлено во многочисленных трудах к.п.н., доцента М.М. Хасенова и др. [5], [6], [7], [8].

Как отмечают авторы, «Учебный предмет *Графика и проектирование* относится к предметам стандартного уровня естественно-математического направления и является одной из новых дисциплин, вводимых в школу (взамен «Черчения»), и вносит существенный вклад в формирование *графической и проектной деятельности* школьников, в развитие их интеллектуальных, творческих способностей. Общеобразовательная и развивающая функции учебного предмета «Графика и проектирование» заключаются не столько в умении изображать материальные, видимые объекты на плоскости (на бумаге), а в формировании и развитии интеллектуальной способности к графической визуализации, пространственном видении представляемых (воображаемых) результатов своей деятельности. Это различие заключается в свободном овладении учащимися различными приемами построения графических изображений как своеобразным орудием, инструментом мышления, познания, поиска, и лишь затем выступают как средство фиксации и передачи мысли (информации)».

Использование графики в проектной деятельности способствует формированию как общей графической культуры, так и развитию их общеинтеллектуальных и творческих способностей. В рамках проектной и графической деятельности формируются ключевые компоненты творческого мышления: способность визуализировать проблему, овладение приемами эвристического поиска, геометрографического моделирования, преобразования графического изображения в различных сферах. Графическая и проектная культура обучающихся — это знания, умения и готовность использовать как ручные (инструментальные), так и цифровые средства в своей проектно-исследовательской деятельности.

Авторы подчеркивают, что образовательные цели обучения предмету «Графика и проектирование» представлены в новом стандарте образования в виде системы ожидаемых результатов обучения. Эти цели включают: изучение основ теории графических изображений и усвоение методов геометрографического моделирования, формирование и развитие проектно-творческой деятельности обучающихся, их графической культуры. При конструировании учебной программы выделены основные способы графической деятельности, которые определяют логику организации процесса обучения. Ими являются: репродукция изображений (с изменением масштаба изображений); реконструкция изображений (воссоздание образа объекта по частичным изображениям); преобразование изображений (с изменением методов проецирования); преобразование вида и состава изображений (замена изображений); преобразование предметов по изображениям (изменение формы и пространственного положения); графическое моделирование (графическое конструирование, проектирование).

Однако, на наш взгляд, неверно будет при формулировании целей обучения предмету ставить на первое место изучение основ теории графических изображений, т.к. оно является необходимым условием усвоения методов геометро-графического моделирования. Кроме того, неверным будет особое выделение репродукции, реконструкции, преобразования изображений, т.к. они также входят в геометро-графическое моделирование, а также включить проектирование в состав моделирования, т.к.

создание модели является одним из этапов проектирования. При этом следует также отметить, что не акцентируется внимание на необходимости учитывать техническую направленность цели и содержания обучения предмету.

Тем не менее, ценным в работах ученых является мысль о том, что установленные основные (стержневые) способы графической деятельности позволяют неоднократно обращаться к ним в процессе обучения и применить принцип спиралевидного построения учебной программы, что, разумеется, будет использовано нами.

Анализ трудов казахстанских ученых, посвященных профессиональной подготовке инженеров и, в частности, их графической подготовке (А.М. Абдыров, Ж.Ж. Есмуханова, Ж.Ж. Джанабаев, У.Ш. Ибишев, А.К. Кусаинов, Т.К. Мусалимов, Ы.А. Нәби, Б.Н. Нурмаханов, А.П. Сейтешев, С.Смаилов, Ә.Ә. Төлбаев, Г.Г. Шапрова и др.), показал, что одной из причин низкого уровня графической подготовки студентов в вузах является их слабая пропедевтическая подготовка по черчению в средней школе. Действительно, многие студенты первых курсов технических специальностей не владеют чертежными инструментами, не умеют читать чертежи и выполнять графические операции, и т.д.

Приведенные выше материалы указывают на то, что актуальность темы нашего исследования заключается в том, что существует противоречие между сложившейся практикой обучения предмета «Графика и проектирование» и отсутствием научного обоснования его целей и содержания. В связи с этим гипотеза исследования заключается в следующем: «если будет разработано научное обоснование цели и содержания обучения по предмету, то они будут отвечать установленным приоритетам высшего образования, т.к. цели и содержание обучения по предмету будут соответствовать цели обучения в средней школе». Реализация данной гипотезы докажет новизну исследования в контексте данного предмета. Вместе с тем с целью повышения методологической значимости исследования данная разработка будет включать обоснование методологических подходов к получению результата, что будет также указывать на новизну исследования и возможность применения его результатов в более широких масштабах за рамками отдельного предмета.

Материалы и методы

Исходными материалами для настоящего исследования послужили труды М.М. Хасенова и авторов данной статьи, учебники по черчению Ж.М. Есмухана, нормативные документы Министерства образования и др. Таким образом, изучение соответствующей литературы является одним из основных методов исследования. Однако для обеспечения глубины исследования этой литературы недостаточно, поэтому необходимо обратиться к методологическому обоснованию ожидаемых результатов. К сожалению, в Казахстане в связи с переходом на подготовку научных кадров через докторантуру PhD отпала необходимость в методологическом осмыслении рассматриваемых в диссертациях и грантовых проектах проблем, наблюдаются ошибки в терминологии и т.п. Например, в статье [9] утверждается, что «...в наших изысканиях мы рассматриваем антропологический подход в рамках методологического поля решения конкретной проблемы...» [9; 278], тогда как из названия статьи можно понять, что методологическое поле является частью антропологического подхода. В связи с текущим положением дел относительно уровня методологических исследований мы используем ранние труды казахстанских ученых Ш.Т. Таубаевой по методологии педагогики [10], Ы.А. Нәби по проектированию педагогических систем [11], [12]. Поскольку в этих трудах достаточно были обоснованы методологические подходы, применяемые в педагогических исследованиях, далее кратко обоснуем необходимость опоры на динамический, системный, объектный, нормативный, деятельностный подходы.

При динамическом подходе объект исследования рассматривается в диалектическом развитии, в причинно-следственных связях и соподчиненности, проводится ретроспективный и перспективный анализ (прогноз). Ретроспектива преподавания предмета «Черчение» показывает, что он был введен в эпоху промышленной революции, хотя методы проецирования и перспектива применялись задолго до нее: в частности, аль-Фараби в своих трудах изображал музыкальные инструменты, а европейские ученые средних веков считаются основателями теории изображений. Ы. Алтынсарин ввел в разработанный им учебный план предмет черчение и с тех пор он из него не исключался, хотя его цели и содержание периодически подвергались реформам. Курс черчения способствовал развитию образного, логического и пространственного мышления, прививал аккуратность, наблюдательность, усидчивость. Несмотря на это, в России предмет отменили в 1989 г., но в настоящее время он постепенно

возвращается в школьные планы. Пересмотр роли черчения в новом формате «Графика и проектирование» создает хорошие перспективы повышения качества обучения в средней школе.

Нормативный подход заключается в установлении нормативов управления по всем подсистемам системы. Чем больше обоснованных и количественно выраженных нормативов, тем выше организованность процессов оценки качества образования. Такой подход четко структурирует и развивает процессы, но в тоже время может тормозить их развитие при некорректно составленной документации. Как показал анализ нормативных документов, именно такую ситуацию мы наблюдаем применительно к предмету «Графика и проектирование».

Объект нашего исследования рассматривается как совокупность множества взаимосвязанных элементов, образующих определенную целостность и предполагающих взаимодействие элементов. Следовательно, необходим системный подход, при котором цель, форма, содержание и результат разработки типовой учебной программы по предмету — это подсистемы, которые нельзя рассматривать в изоляции друг от друга и формулировать в зависимости от желаний разработчика, без достаточного обоснования. В то же время нельзя игнорировать наличие надсистемы, устанавливающей выполнение многочисленных нормативно-правовых актов (рис. 1).

Рисунок 1. Визуализация системного подхода

Деятельностный подход является базисной методологической составляющей теории обучения. В советской педагогической науке фундаментально разработаны сущность и принципы данного подхода (фамилии ученых, сделавших это, общеизвестны). По нашему мнению, в деятельностном подходе важнейшими являются два положения: в деятельности проявляются основные результаты обучения — личностные, метапредметные и предметные, поэтому она формируется; для достижения результатов обучения необходима организация постоянно усложняющейся деятельности по уровням — репродуктивный, частично-поисковый, исследовательский (творческий).

Моделирование является распространенным методом исследования в случаях, когда оно имеет дело с нематериальным объектом. Более подробно мы остановимся на понятиях «моделирование» и «модель» в следующем разделе статьи, пока обозначим суть объективистского подхода, которая состоит в том, что наличие нескольких факторов, влияющих на процесс разработки модели, вынуждает

рассматривать модель как структуру, связанную с характеристиками «входа» и «выхода» образовательной системы (рис. 2).

Рисунок 2. Визуализация объективистского подхода

Несколько непривычно, что в педагогическом исследовании применяются термины, присущие механическим системам. Действительно, в таких системах предполагается, что некоторое внешнее воздействие (внешние параметры) вызывают изменения в процессе функционирования системы (внутренние параметры) и в результате на выходе получаются требуемые свойства системы. Тем не менее, мы считаем продуктивным такой подход, т.к. неучет внешних параметров ввиду сложности рассматриваемой системы и необходимость абстрагироваться вследствие этого от некоторых факторов может отразиться на качестве полученного результата.

Описание вышеприведенных методологических подходов может создать впечатление об их универсальности и широте применения. Более детальный анализ показывает, что это впечатление отчасти ошибочно. Например, динамический подход предполагает рассмотрение большого периода времени существования исследуемого феномена, поэтому новый формат «Графика и проектирование», введенный в учебный план средней школы относительно недавно, в ближайшей перспективе не сможет показать свою эффективность. В связи с этим наша задача — способствовать своими исследованиями приближению поставленной задачи. Что касается нормативного подхода, то вследствие необратимости его применения возникают проблемы в реализации каких-либо нововведений без соответствующего разрешения.

Результаты и обсуждение

Как отмечено выше, более подробно рассмотрим понятия «моделирование» и «модель». Сразу же необходимо отметить, что нельзя допускать смешения моделирования как построения модели объекта (его мысленного образа) и моделирования как способа познания объекта «на его модели», то есть познание модели объекта, а посредством ее — самого объекта. Соответственно, как утверждает З.И. Шимко, значения термина «модель» (фр. modele < ит. modello < лат. modulus — мера, образец) соотносятся с двумя рассмотренными выше значениями слова «моделирование» [13]. Как было отмечено выше, модель выражает собой приближенное, ограниченное представление о структуре, функционировании того или иного объекта изучения [14] и вместе с тем должна отражать связи между элементами, отношения между ними в процессе.

В англоязычной литературе последних годов нам не удалось найти работы методологического уровня, посвященные моделированию. В основном авторы выделяют виды моделирования, например A. Salisu и E.N. Ransom выделяют 4 типа моделирования [15], a B. Rexhepi — уже 6 типов [16], при этом и эти авторы, и множество других рассматривают только моделирование уроков и деятельности учителя. В связи с этим сослаться на такие труды в поисках обоснования методологических подходов невозможно, поэтому мы обратили внимание на междисциплинарный подход некоторых ученых по рассмотрению типологии педагогических моделей. Изучение литературы по теме показывает большое разнообразие мнений. Например, В.И. Писаренко пишет, что очень часто в современных диссертационных исследованиях предпринимаются попытки разработки комплексной модели, отражающей как сущность объекта, так и процессы, которые ему свойственны. В таких моделях предлагаются блоки, например, блок теоретико-методологический, диагностический, технологический, результативный и т.д. Эти блоки содержат всю необходимую информацию для представления сущности модели. Такие формы моделей содержат более полную информацию, позволяющую не только отследить сущность моделей, но и, например, теоретические подходы, лежащие в основе их разработки. Вместе с тем автор выделяет недостатки таких моделей: они в практическом плане затрудняют понимание как сущности объекта, так и особенностей его функционирования; содержат большое количество элементов и компонентов, которые необходимо размещать в одном блоке; автор модели часто забывает о том, что необходимо показывать не только элементы, составляющие сущность модели, но и связи между ними, что особенно важно [17].

Мы согласны с автором, что такие модели имеют в своей основе определенную логику — объединить сущность и процесс, а также показать все комплексно. Действительно, связи между элементами модели также важны, как и сами элементы, поскольку именно они указывают на отношения, которые существуют между компонентами, на иерархию, если она существует. Эти связи мы стремимся отразить в разрабатываемой нами модели. При этом мы будем руководствоваться и рекомендациями, изложенными в статье [18]. Автор статьи делает вывод, что исходная типология педагогических моделей должна основываться на обобщенных предметах моделирования, к которым относятся содержание, структура, функциональность. В соответствии с этими предметами он вводит в употребление базовые типы педагогических моделей: содержательные, структурные, функциональные, и дает их характеристики: предметом моделирования содержательных моделей выступает содержание изучаемого педагогического объекта, образуемое совокупностью определенных атрибутов (свойств, признаков, характеристик и т.д.), которые служат основой для его спецификации; для структурных моделей предметом моделирования является структура исследуемого педагогического объекта вместе со связями, характерными для ее составляющих; для функциональных моделей предметом моделирования является ориентированность исследуемого объекта на реализацию определенных, педагогически значимых функций.

Учитывая, что ранее нами отмечалась значимость комплексных моделей, мы поддерживаем предложение автора о введении в научный оборот понятий педагогических моделей соответствующих подтипов: структурно-содержательных, структурно-функциональных, функционально-содержательных. Принцип их образования проиллюстрирован на рисунке 3.
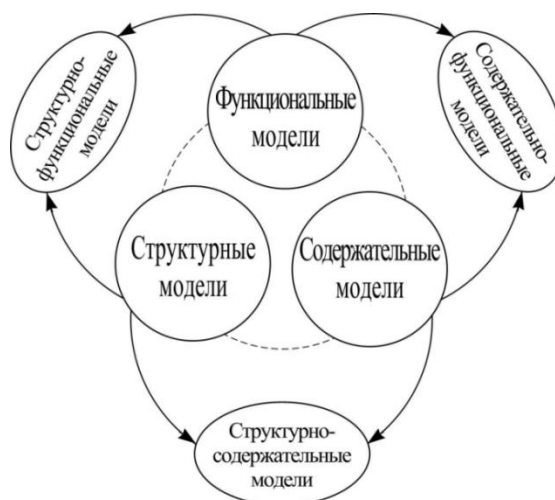
Рисунок 3. Типология педагогических моделей: базовые и производные типы [18]

Исходя из особенностей функциональных моделей, делаем вывод, что в нашем случае мы не ставим цель реализации педагогически значимых функций, поэтому остановимся на структурно-содержательной модели.

Учитывая, что жизненный цикл в системном анализе принято разделять на фазы и стадии, а также опираясь на идею П.И. Балабанова, высказанной в монографии «Методологические проблемы проектировочной деятельности» и затем развитой в других трудах, например в [19], мы модель проектирования представим как единство двух блоков — теоретического и практического. Выделение в модели проектирования двух блоков — теоретического и практического — соответствует использованию для разработки модели логико-структурного анализа, разработанного Агентством международного развития США. Как отмечает Н.Ш. Никитина [20], логико-структурный анализ (ЛСА) состоит из аналитической фазы и фазы планирования. Аналитическая фаза представлена тремя этапами:

- Этап 1. Анализ заинтересованных сторон (идентификация всех заинтересованных сторон, их ключевых проблем, изучение ограничений и возможностей);
- Этап 2. Анализ проблем (формулирование проблем, построение причинно-следственных связей и дерева проблем);
- Этап 3. Анализ целей (построение иерархии целей на основе анализа проблем, построение соотношений «средства достижения — конечный результат», определение стратегии проекта).

Аналитическая фаза в ЛСА отличается от теоретической фазы проектирования, предложенной П.И. Балабановым, наличием первого этапа. Чтобы восполнить пробел, укажем, что многие участники образовательного процесса, заинтересованные в его качестве, оказывают существенное влияние на его улучшение. В нашем случае это — государство в лице контролирующих органов. Остальные два этапа охарактеризуем по А.М. Новикову [21], который считает, что проектирование образовательной системы на концептуальной стадии должно начинаться с выявления противоречий на основе детального анализа сложившейся ситуации. Это позволяет выявить комплекс противоречий, среди которых необходимо выделить основное, главное звено. Оно и составляет проблемную ситуацию, т.е. такую, при которой неудовлетворительное состояние дел уже осознано, но пока неясно, что следует предпринять для его изменения.

После выявления проблемной ситуации, указывает автор, начинается формулирование проблемы. Чтобы из проблемной ситуации сформулировать проблему, необходима ведущая идея (или ряд ведущих идей). Проблемная ситуация, оплодотворенная идеей, становится проблемой. Далее автор указывает на следующий этап концептуальный стадии проектирования — на основе сформулированной проблемы и установленной проблематики определяются цель и действия по ее устранению.

Таким образом, по нашему мнению, разделение теоретического блока на две стадии: концептуальную (формулирование проблемы; определение проблематики и цели) и стадию моделирования системы позволяет выделить компоненты модели и определить их соподчиненность, взаимосвязь и содержание. Тогда структурная составляющая модели будет иметь вид, представленный на рисунке 4 внутри контура, выделенного штрихпунктирной линией. Как видим, составляющие структуры представлены в виде фигур без раскрытия содержания. Это сделано для того, чтобы сохранить общность модели, с надеждой на то, что она будет использоваться при обновлении типовой учебной программы по другим предметам. Для детализации модели применительно к учебному предмету «Графика и проектирование» перейдем к практическому блоку.

Вначале следует отметить, что в модели связь между двумя блоками обозначена двухсторонней стрелкой, что подчеркивает на последовательную связь, а наличие обратной связи, т.е. взаимосвязь между теорией и практикой, о чем говорилось во введении к статье. Действительно, составляющая практического блока «декомпозиция» позволила выделить стадии этапа моделирования, т.к. декомпозиция — это процесс разделения общей цели проектируемой системы на отдельные подцели — задачи в соответствии с выбранной моделью. В частности, определение внутренних и внешних, т.е. входных параметров модели, соответствует объективистскому подходу, а определение содержательных параметров модели позволяет перейти к их агрегированию. Поскольку агрегирование — это процесс согласования отдельных задач реализации модели между собой, то в системном анализе он в определенной мере противоположен декомпозиции и дает возможность соединить «входы» и «выходы», согласовывая их между собой.

Раздел «агрегирование» представлен в модели подсистемами (основными составляющими) системы (см. рис. 4) и выделен контуром из штриховых линий. Чтобы обосновать эти подсистемы и показать, в чем именно состоит необходимость обновления типовой учебной программы (ТУП) по учебному предмету «Графика и проектирование», рассмотрим их в существующем ТУП [22]. В таблице 1 приведен их анализ.
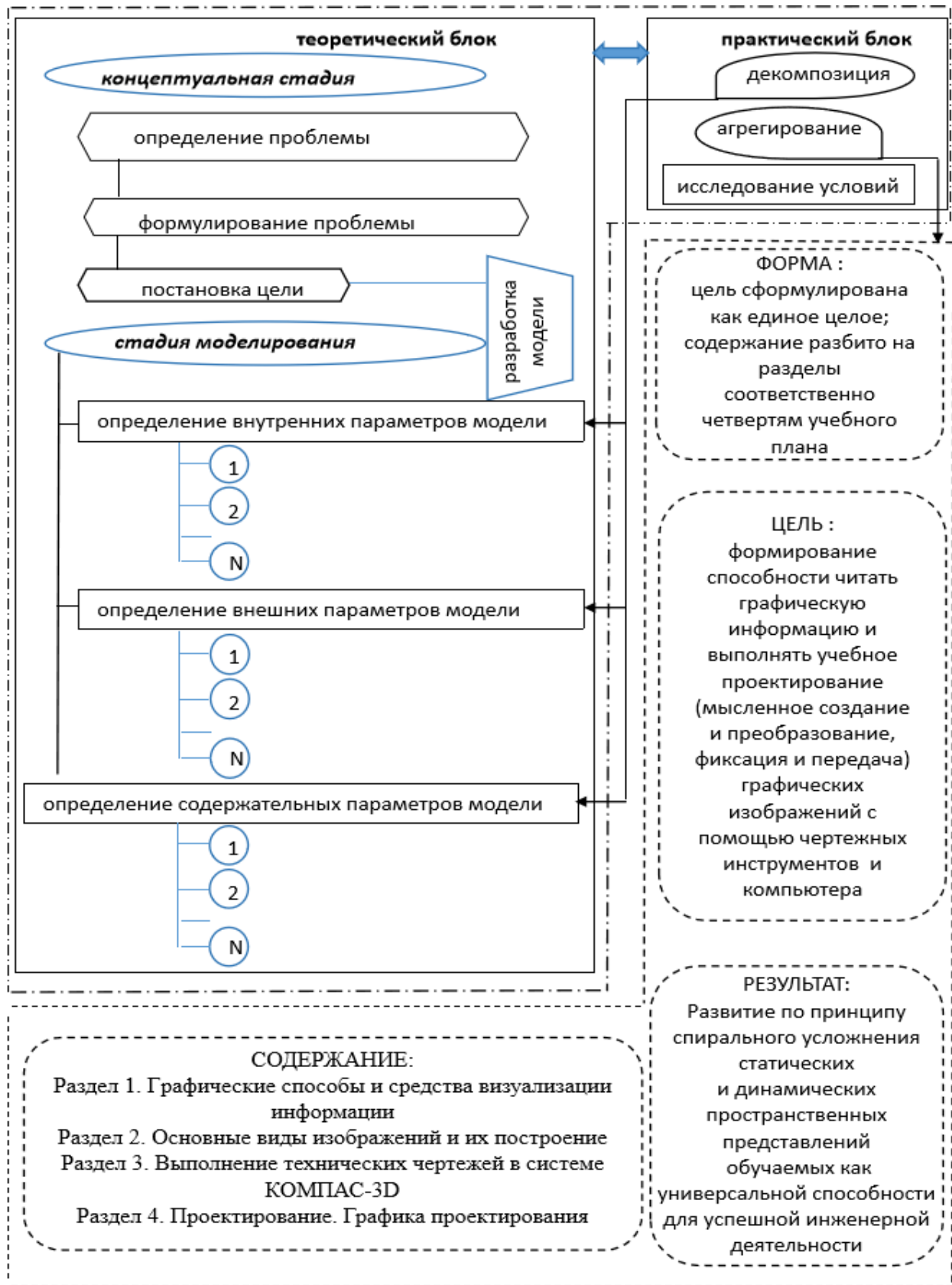
Рисунок 4. Структурно-содержательная модель обновления типовой учебной программы
по предмету «Графика и проектирование»

Т а б л и ц а 1

Анализ сильных и слабых сторон подсистем в существующем ТУП

Текст из ТУП	Сильная сторона	Слабая сторона
Цель обучения		
знакомство и усвоение учащимися основ теории изображений	упоминание теории изображений	Грамматическая ошибка: «знакомство с...», но тогда противоречие с «усвоение...»
знаний закономерностей метода проецирования и графического моделирования	упоминается графическое моделирование	метод проецирования и графического моделирования считаются одним и тем же, что неверно
содействие развитию проектной, творческой деятельности	ставится цель развития проектной, творческой деятельности	
формированию графической культуры и навыков работы традиционными и современными средствами графики	подчеркивается работа традиционными и современными средствами графики	графическая культура — сложный феномен, состоящий из многих компонентов и являющийся личностным образованием, поэтому сформировать ее и проверить уровень сформированности в рамках школьной программы невозможно
Содержание образования		
1) Графические способы и средства визуализации информации;	Введено понятие «визуализация информации»	
2) Основные виды изображений и их построение;	без построения изображений невозможно освоить предмет	
3) Преобразование изображения;	тема способствует развитию пространственных представлений	преобразование изображения входит в геометро-графическое моделирование, поэтому выделять его в отдельную тему нецелесообразно
4) Формообразование и конструирование;	тема способствует развитию пространственных представлений	формообразование входит в геометро-графическое моделирование, поэтому выделять его в отдельную тему нецелесообразно
5) Преобразование формы;	тема способствует развитию пространственных представлений	преобразование формы входит в геометро-графическое моделирование, поэтому выделять его в отдельную тему нецелесообразно
6) Элементы технической, архитектурно строительной и информационной графики;	учитывает техническую направленность обучения предмету	
7) Творческие задания;	содействует развитию навыков конструирования и проектирования.	
8) Проектирование. Проектная графика.	учитывает техническую направленность цели и содержания обучения предмету	термин «проектная графика» неверен, есть графика проектирования
Форма представления		
цель состоит из 4-х частей		цель не сформулирована четко
деление содержания для изучения по четвертям осуществлено в отдельном документе — долгосрочном плане по реализации ТУП		планируемые разделы разбросаны по разным четвертям

При разработке содержания учтено, что:

1) Цель обучения предмету достигается за счет усвоения графических способов и средств визуализации информации посредством выполнения изображений, а также формирования навыков выполнения технических чертежей и учебного проектирования;

2) Поскольку в средней школе учебный год разделяется на четверти, а для данного предмета не предусмотрены экзамен, суммативное оценивание за раздел и за четверть, необходимо обеспечить соответствие объема материала 4-м четвертям. Материал каждого из 4-х разделов следует рассматривать как модуль — это позволяет учителю отслеживать промежуточные результаты по каждому модулю;

3) Раздел «Выполнение технических чертежей» запланирован на самую продолжительную четверть, исходя из логики построения курса и с учетом его важности исходя из целей обучения.

Как отмечалось раннее, будет закономерным направить цель и содержание обучения по естественно-научным предметам на формирование компетентности в сфере техники и технологий. Как справедливо утверждает Л. Гурье [23], современное техническое образование, составляющее основу профессиональной подготовки инженера, ориентировано на передачу естественнонаучных и математических знаний. Действительно, инновационная инженерная деятельность — это разработка и создание новой техники и технологий, в основе которой лежит решение все более сложных научно-технических задач. Разработка обновлений в ТУП по учебному предмету «Графика и проектирование» с целью подготовки обучающихся к будущей профессиональной деятельности представляет собой реализацию деятельностного подхода.

Необходимо отметить, что предлагаемая структура содержания улучшает форму его представления и создаст условия для оптимизации долгосрочного плана по реализации ТУП. Также возможен пересмотр подходов к составлению данного плана.

Ожидаемый результат обучения формирование способности читать графическую информацию и выполнять учебное проектирование (мысленное создание и преобразование, фиксация и передача) графических изображений с помощью чертежных инструментов и компьютера в модели представлен как развитие по принципу спирального усложнения статических и динамических пространственных представлений обучаемых как универсальной способности для успешной инженерной деятельности. Если это так, то одним из требований, предъявляемых к обновленному образованию, является усложнение учебного материала от класса к классу по спиральному принципу. В существующем варианте ТУП эта тенденция не поддерживается поскольку предусмотрен переход между средствами получения изображений. Следовательно, в курсе «Графика и проектирование» темы в 10-ом и 11-ом классах не должны повторяться, а ступени усложнения необходимо выстраивать по мере усложнения материала по следующим признакам: усложнение объекта исследования, или усложнение мыслительной деятельности или повышение производительности. Подобная наша позиция не находит одобрения среди разработчиков данной ТУП, т.к. в официальном письме руководства Национальной академии образования имени Ы. Алтынсарина по данному поводу отмечается, что понятие «статические и динамические пространственные представления» не соответствует возрастным особенностям обучающихся 10-11-х классов. Однако несостоятельность данной позиции подтверждена не только теоретически, но и экспериментально в трудах советских и казахстанских ученых. Например, М.М. Хасенов доказал эффективность разработанных им задач по активизации мыслительной деятельности на уроках черчения в советское время, когда данный курс ученики проходили в 7-8 классах. Ә.Ә. Төлбаев получил экспериментальные данные о мыслительных процессах во время выполнения графических заданий школьниками и студентами 1-х курсов [24], Ы.А. Нәби и У.Ш. Ибишев определили трудоемкость заданий по графическим дисциплинам [25]. Следует отметить, что дисциплина «Начертательная геометрия и инженерная графика» преподается в вузе в 1-ом семестре 1-го курса, т.е. возрастная разница между обучающимися невелика. Из составляющих практического блока не была раскрыта часть, связанная с исследованием условий. Это объясняется тем, что в настоящий момент остаются неясными возможности обновления ТУП и перспективы пересмотра Государственного общеобязательного стандарта общего среднего образования.

Заключение

Анализ государственных нормативно-правовых документов показал, что в них четко обозначен приоритет в подготовке кадров для экономики страны и что обозначена связь в целях обучения в сис-

темах среднего и высшего образования. Наличие связи на примере предмета «Графика и проектирование» указывает на то, что отсутствует научное обоснование его цели и содержания. В связи с этим поставлена цель обновить типовую учебную программу предмета с опорой на сильную методологическую базу. Содержание проделанной работы дает возможность утверждать, что получены следующие научные результаты.

Применение системного, объективистского, деятельностного и др. подходов показало, что опора на них позволила обосновать все компоненты будущей модели. В частности, при динамическом подходе выяснено, что дает пересмотр роли черчения в новом формате «Графика и проектирование»; системный подход позволил рассматривать многокомпонентность объекта исследования; объективистский подход показал возможность технического подхода к структуре модели; деятельностный подход выявил особенности инженерной деятельности.

Выбор соответствующего типа модели гарантирует, ее соответствие поставленной цели, обеспечивая структурированность за счет выделения концептуального и практического блоков и выявления взаимосвязи между ними, содержательность за счет агрегирования в модели подсистемам системы и универсальность, т.к. она может быть использована для обновления типовых учебных программ по другим предметам.

Таким образом, гипотеза исследования доказана, что указывает на новизну исследования и возможность применения его результатов в более широких масштабах за рамками отдельного предмета. Это дает возможность утверждать, что полученные результаты вносят определенный вклад в развитие теории и практики педагогики.

Вместе с тем наметились нерешенные проблемы, в частности, выявление условий реализации модели, что открывает перспективы дальнейших исследований.

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Үлгілік оқу бағдарламасын жаңартуды модельдеу («Графика және жобалау» пәні мысалында)

Зерттеу тақырыбының өзектілігі «Графика және жобалау» пәнін оқытудың қалыптасқан практикасы мен оның мақсаты мен мазмұнын ғылыми негіздеудің болмауы арасында қайшылық бар екендігінде көрінеді. Осыған байланысты зерттеу гипотезасы мынаған саяды: егер пән бойынша оқытудың мақсаты мен мазмұнының ғылыми негіздемесі әзірленетін болса, онда олар жоғары білімнің белгіленген басымдықтарына сай келеді, өйткені пән бойынша оқытудың мақсаттары мен мазмұны орта мектепте оқытудың мақсаттарына сәйкес келетін болады. Ғылыми болжамды жүзеге асыру үшін әдіснамалық көзқарастар қолданылды және модельдің компоненттері негізделді. Модельдің оңтайлы түрі оның құрылымдылығын, мазмұны мен әмбебаптығын қамтамасыз етуге мүмкіндік беретін құрылымдық-мазмұндық модель екендігі дәлелденді, модельдің тұжырымдамалық бөлігі ашылып және мазмұндық бөлігі «Графика және жобалау» пәні бойынша оқыту мақсаты, мазмұны мен нәтижесі мысалында негізделді. Атап айтқанда, оқыту мақсаты графикалық ақпаратты оқу және графикалық кескіндерді сызу құралдары мен компьютердің көмегімен оқу жобалауды (ойша құру және түрлендіру, жазу және жеткізу) орындау қабілетін қалыптастыру, ал нәтижесі — табысты

Ы.А. Нәби, Ә.Ә. Төлбаев, У.Ш. Ибишев

инженерлік іс-әрекет үшін әмбебап қабілет болып танылатын білім алушылардың статикалық және динамикалық кеңістікті көз алдына елестету қабілетін шиыршықты күрделену қағидаты бойынша дамыту. Зерттеудің жаңалығы ел экономикасы үшін мамандар даярлаудың басымдықтарын ескере отырып, үлгілік оқу бағдарламаларын әзірлеу қағидатына жаңа көзқараспен айқындалады. Сонымен қатар модельден шешілмеген проблемалар туындайтыны, атап айтқанда, модельді іске асыру шарттарын анықтау; бұл жәйт әрі қарайғы зерттеулердің болашағын ашатынын көрсетті.

Кілт сөздер: модельдеу, графика және жобалау, үлгілік оқу бағдарламасы, құрылымдық-мазмұндық модель, инженерлік іс-әрекет.

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Modeling the updating of a typical curriculum (using the example of the subject "Graphics and design")

The relevance of the research topic is expressed in the fact that there is a contradiction between the established practice of teaching the subject "Graphics and design" and the lack of scientific justification for its purpose and content. In this regard, the hypothesis of the study is that if a scientific justification for the purpose and content of teaching in the subject is developed, they will meet the established priorities of higher education, since the purposes and content of teaching in the subject will correspond to the purpose of teaching in secondary school. To implement the hypothesis, the methodological approaches were used, and relying on them made it possible to justify the components of the model. It was proved that the optimal type of model is a structural-and-content model, which allows to ensure its structurality, pithiness and universality, the conceptual part of the model is disclosed and the content part is justified by the example of the purpose, content and result of training in the subject "Graphics and design". In particular, the purpose of the training is to form the ability to read graphic information and perform educational design (mental creation and transformation, fixation and transference) of graphic images using drawing tools and a computer, and the result is the development of static and dynamic spatial representations of trainees according to the principle of spiral complication as a universal ability for successful engineering activities. The novelty of the research is determined by a new look at the principle of developing typical curriculum, which concludes with taking into account the priorities of training specialists for the country's economy. It was shown that unresolved problems arise from the model, in particular, the identification of conditions for the implementation of the model, which opens up opportunities for further research.

Keywords: modeling, graphics and design, typical curriculum, structural-and-content model, engineering

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Formation of discursive competence of future foreign language teachers in conditions of professionally oriented communication

The article examines the formation of discursive competence in future foreign language teachers for professionally oriented communication. Discursive competence is crucial for educators, enabling effective speech functions and professional communication skills. This facilitates the effective development of communication skills in a professional context. Discourse competence has distinct features: it is cohesive, coherent, and consistent, relying on structural relationships that break a whole into smaller components. The study aims to identify the influence of professionally oriented communication on the formation of discursive competence in future foreign language teachers. The object of the study is the discursive competencies of future foreign language teachers. The research methodology was based on practical testing of developed methods, conducting sociological surveys, and confirming hypotheses using the non-parametric Mann-Whitney statistical criterion. The experiment's results were evaluated using comparison, analysis, synthesis, and theoretical generalization. The control stage of the pedagogical experiment demonstrated significant differences, which may indicate that the tested method can indeed be considered effective and capable of developing discursive competencies through the application of professionally oriented communications in the training of future foreign language teachers. Therefore, the implementation of innovative approaches and the adaptation of teaching methods to the real needs of students are deemed essential conditions for preparing qualified specialists in the field of foreign language teaching.

Keywords: discourse, competencies, discourse competencies, learning process, communication, professionally oriented communication, linguistics, foreign language, teacher, university.

Introduction

Modern conditions for the development of states impose certain requirements regarding the conditions for entering the international market. Today, this circumstance is realized through the establishment of international contacts and connections within the global community. The expansion of contacts is directly related to the level of competence formed in the field of foreign language knowledge. Currently, the role of communicative skills and readiness for professional communication is becoming increasingly important. This is due to the fact that these skills shape the competence of future teachers, which is especially relevant for those who teach foreign languages [1; 62–70].

From the perspective of modern aspects, discursive competence holds significant importance, as it is responsible for fulfilling speech functions. In this case, speech competence refers to the ability of an educator to express written or spoken statements in a coherent format. A characteristic feature of such statements is coherence and cohesion, which differ in their potential for rational interpretation of statements in a foreign language [2; 89–99]. In other words, it is the ability of a person to form complete, logical, and coherent constructions of specific discourses that allow not only for reproduction but also for understanding various text formats. This forms the basis for an aspect known as communicative competence [3; 431–439].

Such competence enables the rational formation of communication skills in a professionally oriented context. This term implies communication aimed at solving specific professional tasks through the assimilation of individual units of a foreign language that are used for conducting negotiations. This has direct significance in the process of professional interaction [4; 213–215].

The issues of forming discursive competence among future foreign language teachers are addressed in the works of both foreign and domestic researchers. The importance of discursive competence is noted for various spheres of human activity, which may be directly or indirectly related to foreign languages and corresponding skills [5; 131–135]. The theoretical aspects of addressing issues related to discursive competence are covered in the works of Allahverdiyeva V. Some researchers view this concept as the abilities or skills of communication utilized by individuals in their professional activities; on the other hand, this concept serves

as a special element considered an important component of the educational process and is used in the cognitive and informational activities of individuals. Additionally, the practical application of these skills in practice is one of the fundamental aspects in the system of developing communicative competencies [6].

In some fields of activity, foreign language competencies can serve as an innovative component from a discourse perspective, which serves as a basis for training specialists in non-linguistic specialties. In this context, discursive competencies are viewed as elements of a competence-based approach and are considered foundational tools for the implementation and improvement of educational and methodological complexes in various areas [7]. Foreign scholars, particularly Iswandari Y.A., Ardi P., Gong Y.F., Lai C., Gao X.A., regard communicative competence as a specific model of speech behavior that enables individuals to navigate specific communication contexts and adapt to the corresponding societal requirements. It is also based on other competencies (strategic, linguistic, pragmatic, grammatical, and linguistic-didactic) [8; 361–380, 9; 134–150]. Doronina E.G., in her work supports the opinion that discursive competence can play a role in the correct application of both individual language units and complete complex language constructions in specific situations [10; 73–81]. Communicative competence includes several components that play a key role in the development of language skills, with sociocultural, linguistic, and speech elements taking the lead. According to Hintz F., McQueen J.M., Meyer A.S., discourse is positioned as a communication process between people based on language skills [11; 1–22]. He views discourse as a complex broad term encompassing the use of language from diverse perspectives and in variable forms [12].

Overall, from the analysis of the theoretical works presented above, it becomes evident that discourse is often equated with the concept of communication [13]. Accordingly, the distinction between the concepts of discursive and communicative competence is highlighted. Thus, a comparison of these two terms can be made based on various characteristics. Table 1 presents a comparative analysis of the terms "discursive" and "communicative" competence.

T a b l e   1

Comparative characteristics of the terms "discursive" and "communicative" competence

	Discursive competence	Communicative competence
Characteristics of competence	Special	Universal
Criteria	Cohesive nature, coherence, consistency, sequence	Adequacy of application, relevance, timeliness, effectiveness
Relationships	Splitting into parts and component perception	Holistic understanding and perception
Orientation from the position of professionalism	Acquisition of communication skills that reflect its pragmatic side. Narrowly focused aspects of discourse are taken into account based on internal and external interaction. Particular attention is paid to functional styles and professional areas that identify unique features of competencies	Presents requirements for the involvement of additional competencies. Only general communication skills are taken into account without detailed correlation with professional characteristics
Position of the addressee	Ability to adequately perceive and interpret statements from the position of individual aspects	Ability to fully perceive the proposed foreign language material
Position of the speaker	Ability to adequately reproduce one's intentions through communicative skills of statements from the position of individual aspects	Ability to fully express the proposed foreign language material
Conclusion obtained as a result of the formation of ability	Productivity in accordance with professional communications	Achieving the goal of a communicative nature

Thus, discursive competence has unique features: it is characterized by cohesion, consistency, coherence, and sequentiality; it is based on relationships that break down a holistic part into smaller components; the professional position focuses on acquiring communication skills that reflect its pragmatic side, while narrowly focused aspects of discourse are taken into account based on internal and external interactions according to functional styles and professional spheres that identify the unique features of competencies [14; 109–116]. The recipient's position is presented in terms of the ability to adequately perceive and interpret statements from specific aspects, while the speaker's position is perceived in terms of the ability to adequately express their intentions through communicative skills from specific aspects [15]. The result of forming discursive competence is the development of productivity in accordance with professional communications [16; 94–104].

Equally important attention in the scientific literature is devoted to the concepts of structures that make up discursive competence [17; 23–31]. According to Golovina N.P., it includes textual, tactical, and strategic elements [18]. Aniskina N.V. considers this level of competence as a composite system consisting of a personality-oriented approach, and practical, and reproductive components [19]. Andreeva O.A. believes that this system consists of receptive, creative, and referential components [20]. The comprehensive integration of the aforementioned elements is shaped by the position of Evstigneyeva I.A. [21; 74–82].

Questions regarding this topic have been addressed in the works of Kazakhstani scholars. Some of them study the formation of discursive competencies in accordance with digital educational resources. Rakhimova Zh.N. and Dzhusubalieva D.M. investigates issues related to the formation of information culture, which lays the foundation for the further development of professionally oriented communications [1; 62–70]. The integration of information and communication technologies is highlighted in the work of Kunanbayeva S.S. Special attention is given to the study of the features of discursive competencies and their role in the system of professionally oriented communications [22]. The formation of discursive competence among future foreign language teachers is a key aspect of their training, as it affects not only the quality of teaching but also the ability to interact effectively with students, colleagues, and parents [23; 45–50]. Discursive competence encompasses skills in understanding and creating texts in various contexts, which is especially important in the context of globalization and multilingual communication. The relevance of our research topic is determined by modern educational process requirements, where the focus shifts to communicative and discursive aspects of learning [24; 94–99]. In a rapidly changing world, as well as in the context of increasing international interaction, foreign language teachers must possess a high level of discursive competence, which is necessary for the successful implementation of their professional activities [25; 124–128]. Equally important is the investigation of issues characteristic of this field of knowledge, where the lack of research on the formation of discursive competence in the context of professionally oriented communication emphasizes the need for detailed analysis, as well as the application and development of effective methodologies. Accordingly, the aim of this research is to identify the influence of professionally oriented communication on the formation of discursive competence among future foreign language teachers. This work aims to contribute to the improvement of foreign language teacher training, which will enhance education quality and facilitate successful interaction in a multilingual environment.

Methods and materials

In this research, the discursive competencies of future foreign language teachers were selected as the object. The future educators were divided into groups of 4-5 people with varying levels of English proficiency. Each group was assigned to a specific category: experimental or control group. A three-stage pedagogical experiment was conducted in the experimental group. To compare the obtained results, control groups were formed. The total number of groups amounted to twelve units for both the experimental and control groups. The average indicators from a sociological survey for each group were systematized and analyzed based on the non-parametric statistical Mann-Whitney criterion. This criterion allows for confirming or refuting a hypothesis regarding the effectiveness of the applied methodological tools in practice. The obtained data for each subgroup were ranked and organized into rank tables, followed by calculations of empirical and critical values of the Mann-Whitney criterion. To evaluate and summarize the results of the experiment, methods of comparison, analysis, synthesis, and theoretical generalization were used.

Results and Discussion

In the framework of conducting research, the role of professionally oriented training and its influence on the formation of discursive competence among future foreign language teachers is examined. Accordingly, to identify the most important elements in the specialized model for the formation of discursive competence, the primary questions regarding the consideration of special needs arising in future foreign language teachers were investigated. The practical work was based on the empirical testing of a developed set of methods and recommendations in the field of foreign language teaching. The effectiveness of the testing was evaluated according to a developed questionnaire and descriptor. The descriptor allowed for the assessment of respondents' answers regarding how effectively the applied methods and methodological recommendations for teaching foreign languages demonstrated actual effectiveness as a result of their application. A three-stage pedagogical experiment made it possible to evaluate the initial stage of method application, during its application (mid-semester), as well as at the end of the semester. The obtained results were systematized based on the application of the non-parametric Mann-Whitney statistical criterion.

As a result of conducting the practical experiment, statistical data were obtained, with results presented in the format of average scores by groups in each category. The maximum score was 10 points, indicating a high level of effectiveness of the tested methodological recommendations for training future foreign language teachers (Table 2).

T a b l e 2

**Results of the three-stage experiment in the experimental and control groups
based on the Mann-Whitney criterion**

Ascertaining experiment		Formative experiment		Control experiment	
Experimental group	Control group	Experimental group	Control group	Experimental group	Control group
3	2	4	3	5	4
2	3	3	3	7	4
4	4	5	4	6	4
1	2	4	3	9	3
2	2	2	2	7	3
4	3	3	4	8	4
3	4	4	4	9	4
1	2	5	4	7	4
3	3	6	3	6	3
2	4	4	4	8	4
4	1	3	1	6	2
2	3	3	3	7	3

After presenting the obtained results, they were ranked to obtain a table of ranks and calculate the empirical and critical indicators of the Mann-Whitney criterion (Table 3).

T a b l e 3

Obtaining ranks: calculation of empirical and critical indicators of the Mann-Whitney criterion

Ascertaining experiment				Formative experiment				Control experiment			
X	Rank X	Y	Rank Y	X	Rank X	Y	Rank Y	X	Rank X	Y	Rank Y
1	2	1	2	2	2.5	1	1	5	13	2	1
2	7.5	1	2	3	8	2	2.5	6	15	3	3.5
2	7.5	2	7.5	3	8	3	8	6	15	3	3.5
2	7.5	2	7.5	3	8	3	8	6	15	3	3.5
2	7.5	2	7.5	3	8	3	8	7	18.5	3	3.5
3	15	2	7.5	4	17	3	8	7	18.5	4	9
3	15	3	15	4	17	3	8	7	18.5	4	9
3	15	3	15	4	17	4	17	7	18.5	4	9
3	15	3	15	4	17	4	17	8	21.5	4	9
4	21.5	4	21.5	5	22.5	4	17	8	21.5	4	9
4	21.5	4	21.5	5	22.5	4	17	9	23.5	4	9
4	21.5	4	21.5	6	24	4	17	9	23.5	4	9
Sum	156.5	Sum	143.5	Sum	171.5	Sum	128.5	Sum	222	Sum	78
U_{emp}	65.5			U_{emp}	50.5			U_{emp}	0		
$U_{kp}(0.05)$	37			$U_{kp}(0.05)$	37			$U_{kp}(0.05)$	37		
$U_{kp}(0.01)$	27			$U_{kp}(0.01)$	27			$U_{kp}(0.01)$	27		
Result	$U_{kp} < u_{emp}$			Result	$U_{kp} < u_{emp}$			Result	$U_{kp} > u_{emp}$		
	$H_0 > H_1$				$H_0 > H_1$				$H_0 < H_1$		
	The differences in sample levels are insignificant.				The differences in sample levels are insignificant.				The differences in sample levels are significant		

According to Table 3, the main results of the study are reflected with the calculation of the Mann-Whitney criterion. This allowed for obtaining data on the actual effectiveness of the tested methods in practice. It was found that at the stage of the initial experiment, at significance levels of 0.05 and 0.01, the obtained results showed that U_{kp} was less than U_{emp}. This indicates that the null hypothesis (H_0) is not rejected, and the differences in sample levels are insignificant. This may suggest that the method applied at this stage did not demonstrate statistically significant changes compared to the control group. The obtained result indicates that at the initial stage of the experiment, knowledge levels among the studied future teachers did not show significant differences between samples. Therefore, this provides basis to conclude that the current level of standard foreign language education, without considering professionally oriented communications, produces approximately similar results in students' knowledge levels. The obtained results are more clearly illustrated in Figure 1.

The second stage was characterized by practically similar results, with insignificant differences from each other: U_{kp} was less than U_{emp} at both significance levels (0.05 and 0.01). This again confirms that the null hypothesis (H_0) is not rejected. The differences in sample levels remain insignificant. Therefore, the results obtained in the middle of the semester begin to show a positive trend but do not fully reflect all effects

of the tested materials. In some cases, this may indicate a need to revise the methodology used or the conditions of the experiment. However, since a slight positive dynamic has been identified and a positive correlation between applied methods and results has been established, it was decided to continue further work within the framework of the experiment.

The final stage of the pedagogical experiment the control stage revealed a significant difference between the results of the experimental and control groups: U_{kp} was greater than U_{emp}, which led to the rejection of the null hypothesis (H_0) in favor of the alternative (H_1). This indicates that the differences in the levels of the samples are significant. Therefore, the methods applied in the third stage demonstrated their effectiveness in identifying significant differences between the samples. This may indicate the success of the changes implemented in the methodology and within the framework of the experiment.

Based on this analysis, we can conclude that:

- the first two stages of the experiment showed no statistically significant differences between the samples;

- the control stage demonstrated significant differences, which may suggest that the tested methodology is effective and allows for the development of discourse competencies through professional-oriented communications in the process of training future foreign language teachers.

This indicates that the modern stage of teaching in higher education should be based on various aspects of multidisciplinary teaching within a single discipline. This means that educators need to move beyond standard methods and focus on the needs experienced by future teachers. A detailed study of students' needs will allow for the formation of a sufficiently high level of professional skills among future foreign language teachers and enhance not only their overall communication skills and language proficiency but also forecast the expected effectiveness and relevance of further application of such methods.
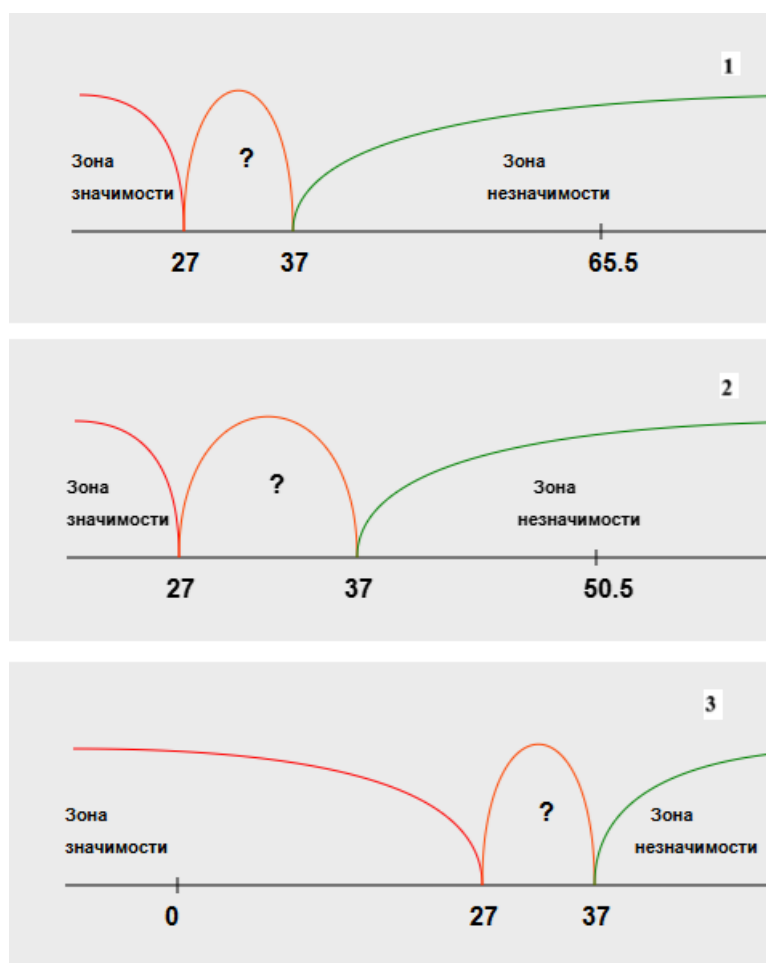

Figure 1. Limits of significance of the results obtained during the three-stage experiment

Conclusion

Based on the analysis of research results, several key conclusions can be drawn regarding the effectiveness of the tested methodology in the context of training future foreign language teachers. The first two stages of the experiment did not reveal statistically significant differences between the samples, which may indicate that at the initial stages of training, the methods used have not yet had a noticeable impact on the development of discourse competencies. However, the control stage determined the effectiveness of the applied methodologies in the process of professional oriented communications.

The obtained results emphasize the importance of applying diverse options for multidisciplinary teaching within foreign language education. Teaching in universities at this modern stage should take into account the diversity of student needs, which requires educators to move beyond traditional teaching methods. By placing special emphasis on this aspect, it is possible to significantly improve not only the quality of professional skills but also substantially enhance language competencies.

Thus, a detailed study of students' needs is one of the most important factors in improving their communication and language skills. This circumstance contributes not only to the development of discourse competencies among future teachers but also provides an opportunity to forecast the effectiveness and relevance of further application of proposed methodologies and recommendations for teaching foreign languages to students. Ultimately, implementing innovative approaches and adapting teaching methods to real student needs are essential conditions for preparing qualified specialists in the field of foreign language teaching. It is also recommended to conduct additional analysis of the reasons for the ineffectiveness of methods at the formative experiment stage, as well as to study the factors that contributed to success at the third stage of experiment, in order to improve research approaches in the future.

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Кәсіби бағдарланған қарым-қатынас жағдайында болашақ шет тілі мұғалімдерінің дискурсивті құзыреттілігін қалыптастыру

Мақала кәсіби бағдарланған қарым-қатынас жағдайында болашақ шет тілі мұғалімдерінің дискурсивті құзыреттілігін қалыптастырудың теориялық және практикалық аспектілерін зерттеуге арналған. Дискурсивті құзыреттілік бүгінгі таңда мұғалімдер үшін өте маңызды. Өйткені ол сөйлеу әрекеттерін жүзеге асырудағы жүйелілікті, логиканы және мазмұндық құрылымды қамтамасыз етеді. Дискурсивті құзыреттілік мәтіннің когезиясын, дәйектілігін және мағыналық тұтастығын сақтауды қамтамасыз ететін қабілетімен ерекшеленеді. Сонымен қатар, ол тұтас мәтінді құрылымдық компоненттерге бөліп, олардың арасындағы семантикалық және логикалық байланыстарды сақтауға мүмкіндік береді. Бұл қасиеттер кәсіби контексте тиімді қарым-қатынас құру үшін аса маңызды. Зерттеудің мақсаты — болашақ шет тілі мұғалімдерінің дискурсивті құзыреттілігін қалыптастыруға кәсіби бағытталған қарым-қатынастың әсерін анықтау. Зерттеу нысаны — болашақ шет тілі мұғалімдерінің дискурсивті құзыреттіліктері. Зерттеу әдістемесі әзірленген әдістерді практикалық сынақтан өткізуге, әлеуметтік сауалнама жүргізуге, Манн-Уитнидің параметрлік емес статистикалық критерийі негізінде гипотезаны растауға бағытталған. Эксперименттің нәтижелерін бағалау және жалпылау үшін салыстыру, талдау, синтездеу және теориялық жалпылау әдістері қолданылды. Педагогикалық эксперименттің бақылау кезеңі айтарлықтай айырмашылықтарды көрсетті. Бұл сыналған әдістеме шынымен тиімді деп саналады және болашақ шет тілі мұғалімдерін оқыту процесінде кәсіби бағдарланған коммуникацияларды

қолдану барысында дискурстық құзыреттілікті дамытуға ықпал етеді. Демек, инновациялық тәсілдерді енгізу және оқыту әдістерін студенттердің нақты қажеттіліктеріне бейімдеу шет тілін оқыту саласындағы білікті мамандарды даярлаудың ең қажетті шарттары болып саналады.

Кілт сөздер: дискурс, құзыреттілік, дискурстық құзыреттілік, оқу процесі, коммуникация, кәсіби бағдарланған қарым-қатынас, лингвистика, шетел тілі, мұғалім, жоо.

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Формирование дискурсивной компетентности будущих учителей иностранного языка в условиях профессионально-ориентированного общения

Данная статья посвящена исследованию формирования дискурсивной компетентности будущих учителей иностранного языка в условиях профессионально-ориентированного общения. На сегодняшний день для педагогов наиболее важное значение имеет дискурсивная компетентность, которая отвечает за полноценное выполнение речевых функций. Это дает возможность рационального формирования навыков общения в профессионально-ориентированном аспекте. Дискурсивная компетенция имеет уникальные особенности: отличается когезивным характером, согласованностью, консистентностью; базируется на отношениях в виде дробления целостной части на более мелкие компоненты. Цель исследования — выявление влияния профессионально-ориентированного общения на формирование дискурсивной компетентности будущих учителей иностранного языка. Объект исследования — дискурсивные компетенции будущих учителей иностранного языка. Методология исследования базировалась на проведении практической апробации разработанных методик, проведении социологического опроса, подтверждении гипотезы на основе непараметрического статистического критерия Манна-Уитни. Для оценки и обобщения полученных результатов эксперимента использованы методы сравнения, анализа, синтеза и теоретического обобщения. Контрольный этап педагогического эксперимента продемонстрировал существенные различия, что свидетельствует о том, что апробированная методика действительно может считаться эффективной и развивать дискурсные компетенции в ходе применения профессионально-ориентированных коммуникаций в процессе обучения будущих учителей иностранного языка. Следовательно, внедрение инновационных подходов и адаптация методов преподавания к реальным потребностям студентов считаются наиболее необходимыми условиями для подготовки квалифицированных специалистов в области преподавания иностранного языка.

Ключевые слова: дискурс, компетенции, дискурсные компетенции, процесс обучения, коммуникация, профессионально-ориентированное общение, лингвистика, иностранный язык, учитель, вуз.

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Search and experience of forming the language potential of schoolchildren

This article explores the theoretical foundations and practical strategies for developing the linguistic personality and language potential of schoolchildren in the modern educational environment. The study is based on the analysis of scientific works in the fields of linguistics, pedagogy, and psychology. The authors systematize the components and stages of linguistic development and emphasize the role of national-cultural values, precedent texts, and creative assignments. Innovative educational technologies are proposed as an effective tool for stimulating students' creativity, critical thinking, and cognitive skills. Special attention is given to the design of experimental tasks that encourage an independent construction of knowledge, integration of linguistic and cultural elements, and active participation in learning processes. Methods of comparison, systematization, and generalization were employed to verify the practical relevance of the proposed approach. The results of experimental work confirm that the structured use of precedent texts and national-cultural elements significantly enhances students' ability to express their individual linguistic identity. The article concludes with practical recommendations for applying the obtained results in school language education. The findings contribute to the ongoing efforts to modernize language teaching and promote students' self-development and self-realization through linguistic education.

Keywords: language personality, language learning, language competencies, personal potential, school experience, upbringing, independent search, functional literacy.

Introduction

In the context of globalization, considering the future of a nation's language and assuming responsibility for its vitality are essential. Language plays a central role in shaping national identity. A person who knows their native language well and has internalized its values is also better prepared to understand and engage with the values of other languages. This foundation is primarily built in the school environment. Therefore, the development of language education — adapted to the demands and changes of the time — remains a consistently relevant issue.

The linguistic personality is a consumer of both national culture and national language. The scientist N. Uali noted that "the language consumer possesses linguistic competences, communicative competences, as well as cultural-linguistic competences. And cultural-linguistic competence is the acquisition by a linguistic person of the appropriate cultural semantics, significance in the perception of speech (writing) and spoken (written) word" [1]. Formation of linguistic personality in the process of teaching Kazakh language is one of the main tasks of the unified pedagogical process. Consequently, productive realization of this goal, systematic organization of teaching and learning process depends on the knowledge and qualification of the subject teacher.

Modern education gives priority to independent search, introducing the student to independent learning, rather than relying solely on ready-made sources of knowledge. In the process of language teaching, the natural unity of the processes of learning, upbringing, education and development is realized. Due to the fact that the source of knowledge is mainly transmitted through discipline, mastering the Kazakh language at the modern level is an important nuance. Accordingly, it is necessary to create conditions for the learner to assimilate the learning material taking into account pedagogical and psychological requirements in the system of teaching. This is carried out through informational, educational, developmental, axiological planning, systematization and adaptation to the social environment of the activities of the pedagogical process during the teaching of the discipline. These functions play a huge role in the formation of the potential of a linguistic

personality, activation of participation in activities and are implemented in the conditions of a single, complex pedagogical process.

Speaking about the problem and the essence of the unity of the pedagogical process, B.T. Likhachev and I.P. Podlasyi note that it is a process of interaction between teacher and student, aimed at changing the personality of the student, and scientist N.D. Khmel, forming the theory of a unified pedagogical process in Kazakhstan, also characterizes it as a result of conscious activity of subjects [2], [3], [4]. It includes such components, such as purposefulness, duality, holistic content, methods, forms, teacher's actions, student's actions, which are the main features of a holistic pedagogical process (Fig. 1).
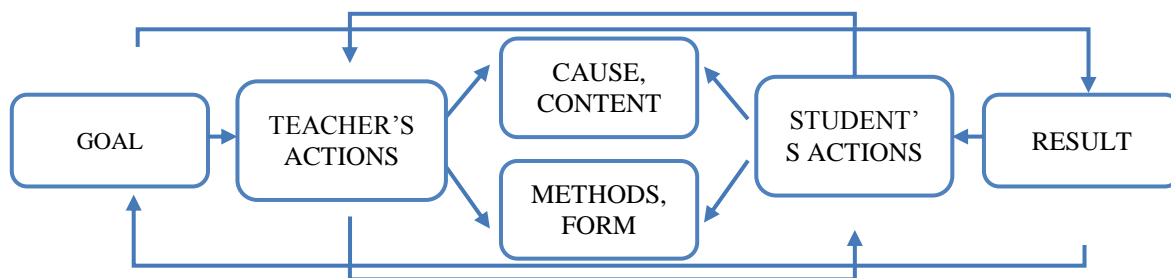
Figure 1. Scheme of holistic pedagogical components.

Formation, development of linguistic personality in the course of a single pedagogical process is associated with the resolution of objective and subjective contradictions. We see the inconsistency of requirements and opportunities, incompatibility of activity and social situation, the complexity of social life, insufficient experience of the child and the contradictions between the needs of society and the needs of the individual and similar objective contradictions and the lack of ensuring the integrity of education and training, mass-counterproductive organization of the creativity of the individual and the pedagogical process, strongly noticeable subjective contradictions between the development of humanitarian education and the technicalization of the pedagogical process. Taking into account that in the period of teaching Kazakh language these contradictions serve as the driving force, it is necessary to plan the goals and directions of work on the formation of modern linguistic personality. It is also worth knowing the factors that shape language personality (Fig. 2).

Figure 2. Factors shaping language personality

Figure demonstrates, that through cognition, developmental environment, life experience, linguistic continuity, specific (linguocognitive, anthropocentric, linguopsychological, etc.) sources of linguistic knowledge begin to form in the personality. The beginning of the formation of personality as a linguistic personality is traced in communicative, creative activity inherent only in its beginning, unique individuality,

distinctive thought and originality of its capabilities, etc. It continues to develop and distinguish itself from individual.

Researchers connect the integrity of "text-formation — text — perceiver" with the concepts of "linguistic integrity" and "linguistic image" in an artistic work, emphasizing that the "artistic world" and "figurative language" of an artistic work are formed this way. And we study and analyse the results and research process of the formation of linguistic personal potential in the course of the discipline.

Methods and materials

Language is a spiritual code reflecting the specificity of the nation. "The main condition for modernization of a new (education) type is the ability to observe this national code" [5]. It is true that the national code originates both in the literature of the nation and the culture of the nation, in the mentality that defines the identity of the nation. Recognition of the individual as a phenomenon of the nation is served by a set of concepts of virtue, honesty, morality, duty, culture, intelligence, reasonableness, etc., imbued with the national values of a conscious being.

Zh.B. Ermekova emphasized that "the introduction of the category of "linguistic personality" into linguistics allowed to fill the concept of "personality" with new content, to leave the sphere of structural-functional aspect of language study behind and to focus on anthropological linguistics, closely related to consciousness, thought and spiritual activity of man" [6]. Indeed, it is man who forms and introduces new elements into language, creates a new product as a "text-maker". We have the right to call him a writer, representing only creative works, not recognizing it as a property common to the creator, but inherent of a scientist, giving reasonable ideas about this or that phenomenon, and a qualified specialist, able to express a new opinion in the public, social environment or to advanced people. "According to three components of communicative universal educational activities, we carried out diagnostics in three directions: I direction: assessment of communicative-speech actions to transfer information and display the subject content and conditions of activity (communication as a prerequisite for internalization). II direction: assessment of communicative actions aimed at organizing and implementing cooperation (communication as cooperation). III direction: assessment of communicative actions aimed at taking into account the position of the interlocutor or partner in activities (communication as interaction)" [7].

The process of language personality formation is complex: along with the development of skills in cognition, study, analysis, understanding, practice, application, and evaluation, there are high requirements for critical, logical and creative thinking skills. Language personality is a modern professional soul, able to process information and data, to study and differentiate the connections of events, phenomena, to present "own product". "Education is the basic competence of students, such as the general cultural, personal and cognitive development, the ability to learn to form a personality" [8]. Review, article, labor, etc. "creative product" offered as knowledge and experience, with a fresh character, novelty, with which the past, present and future are connected, becomes the core of research, as well as the driving force in the development of creativity in speech activity.

Speech activity is one of the objects of research in the field of pedagogy, psychology, linguistics. Scientists interpret speech behaviour as the transmission of a certain message, thought, information, the function of transmission to the listener and as a unified whole of language and speech. Through speech behaviour, the learner establishes a relationship with his or her environment, reflects and reasons about what he or she is saying. From this simple step, the ability to perceive and generate texts characteristic of the linguistic personality begins to take some shape. The learner's perception of the content of the text, its generalization in the process of uttering a thought, becomes more and more complex as the scope expands. This process is filled with depth and specificity of reflection of reality, accuracy of thought and direction to a specific goal.

In European linguistics, this theory goes back to the works of W. Humboldt, I.A. Baudouin de Courtenay, F.de Saussure, etc., based on the nature of language, the relationship between language and speech, the language of the individual and the collective, or "a person educated by language," as expressed by Y.L. Weisgerber, who first formulated the problem of linguistic personality in a scientific context [9]. V.A. Maslova associates the first turn to linguistic personality with the name of the German scientist Y.L. Weisgerber, and in Russian linguistics the first step through the personality of the author and the personality of the hero was made by V.V. Vinogradov [10]. The term "linguistic personality" was clarified and introduced into science in 1982 at the VI International Congress of International Association Of Teachers Of Russian Language And Literature (MAPRYAL) by academician Yu.N. Karaulov [11]. He generalized and supplemented the concept of "linguistic personality" considered in the works of V.V. Vinogradov and G.I. Bogin from the point of view of scientific approaches to the theory of linguistic personality [12; 43].

The purposeful activity of a linguistic personality is a contribution to the development of not only national culture, but the whole human culture. This issue in recent years has become the main goal of scholars not only in the formation of personality, the development of its creative abilities, but also in the evaluation of the national heritage and its presentation for the benefit of the future.

It is especially important to form students' experience of participation in social life, to orient them in the pedagogical process to master many types of independent activities in extracurricular time, to organize, control and guide the processes of self-improvement. Organization of the pedagogical process aims at:

development of personal adaptation skills in the framework of the social system;

practical study of the problems of a linguistic personality ability forming in school conditions;

involvement of students in creative work through active participation in the pedagogical process, expanding their opportunities, etc.

Clarification of the directions of work and conducting the pedagogical process based on the specified features will allow to form a personality. This reflects the nature of the unity of the pedagogical process:

adaptation of personality to the social environment in the pedagogical process is connected with the activity of exchange of actions in the creative environment;

orientation to creativity contributes to faster assimilation, understanding of the ways of different types of activity, formation of the subject of activity in the pedagogical process and availability of goals and results in the pedagogical process;

the basis of the pedagogical process is integrative and effective in the development of own qualities based on integrated knowledge and experience.

It is advisable to consider 4 elements of social experience: knowledge; experience of activity (implementation); experience of creative activity; application of knowledge, experience and evaluation of emotional and value attitudes in achieving the result. As an example of this, a linguistic personality continuously expands its knowledge and remains in constant pursuit of new understanding. It assimilates the life experiences of previous generations and acquired material, overcoming challenges and shortcomings through creative exploration. This process unlocks new possibilities, establishes fresh directions for inquiry, and enables effective engagement with emerging information. The reality is that a person who embodies these qualities, alongside theoretical knowledge, cultivates a rich personality culture and engages in conscious actions that elevate them to the level of a linguistic personality. That person not only recognizes the struggle of morality, love for country and culture, good and right, right and wrong, but also thinks critically, analyses and generalizes it, draws his own conclusions and shows determination as a person. This process focuses on knowing, understanding, interpreting the personality and its conscious analysis, meaningful reasoning, becoming a recognizable personality in terms of intellectual awareness (IQ) and emotional values (EQ), practicality (PQ) based on learned knowledge. Person's linguistic personality shapes culture and self-consciousness and whole being. These are:

a person knows that every new information is related to other sources of knowledge;

is able to distinguish informational significance and current issues in any field of knowledge;

systematicity examines the structural relationship and continuity of the internal part of the topic, problem, or situation under consideration;

and realizes own responsibility for processing information, creating an expressed thought, and presenting it as own solution, participation in the formed text.

This goal, placing great responsibility on students, requires the identification of productive approaches and directions of training and education. In the course of work, we widely used methods, techniques of the program of critical thinking through problem-based learning, writing, and thinking in combination with information and communication technologies on the problem of formation of abilities and qualities of language personality. These technologies were chosen purposefully and contributed to achieving the expected results. In particular, informational technology, which is a set of methods and means used to collect, store, process and disseminate information, stimulates students' interest, creating spreadsheets, creating modelling programs, which is a great opportunity to familiarize the language personality with the "product of own thought".

The works of outstanding personalities in the history of the nation, scientists of linguistics and other figures of education contribute to the formation of the attitude to the nation. The development of the personality of person's cognition based on the worldview of the nation is the basis for the formation of linguistic consciousness and inner spiritual potential. "Students demonstrate social and interpersonal skills by interacting with a classmate. This process occurs when the teacher establishes mutual trust and friendship with stu-

dents through language and language communication, when it is possible to communicate spiritually with them" [13].

The methods of comparison, analysis, systematization, and generalization were used as the basis for the research of these ideas in scientific aspect.

Results and Discussion

The issue of students' personal linguistic potential formation in general education schools is a topical issue that does not leave the respective agenda. It does not deviate from the requirements of scientific research in this direction. For example:

1) Study of the language psychology, crossword puzzle and speech activity in normal and altered state of consciousness, which is affecting the student on the basis of task texts (from the point of view of psycholinguistics);

2) Systematic implementation of the language learning activities in the process of teaching and learning, control, analyse the result (from the point of view of linguodidactics);

3) Realization of the directions of work through deepening the student's source of linguistic knowledge with the study of the language of fiction, the development of cognitive skills, the use of linguistic values (from the philological point of view).

Realization of the necessary endeavors directions in the educational process at school, the achievement of the predicted result assumes the unity of education and upbringing, while the learning process depends on the peculiarities of the methodology of choosing effective methods and techniques. This determines the purpose, content, conceptual foundations of learning and teaching methodology of teaching discipline, obtains reliable, accurate, systematized information about pedagogical processes and particulars (diagnostics, monitoring, etc.). Methodology is a set of principles and approaches to the organization and construction of theoretical and practical activities. It includes the tasks of mastering important primary, basic sources of knowledge (theories, concepts, assumptions, etc.) Within the framework of humanitarian education, methodology fosters the ability to effectively apply acquired knowledge to enhance practical outcomes. This, consequently, provides an opportunity to increase the cognitive and creative activity of the student and formulate the idea through critical thinking.

Importance in the formation of linguistic personality is mostly defined by cognition and creativity. A person, embodied in his cognition, derives the stored information through language and is responsible for its form. Cognition is constantly evolving. "The information arising in consciousness by means of external influences is supplemented by the empiric experience of man. In addition, ontological passages of the world arise in the simplest image of the world reflected in language. For example, metaphorization of thought is a basic mental action, a way of knowing and expressing the world" [14]. Based on cognition, experience and creativity, person can develop new application skills. Cognitive activity makes a student able not only to work on a task, but also to develop and to improve his abilities in accordance with external influences and internal needs. A linguistic personality, adept in the methodologies and cultural aspects of task execution, can actively enhance logical and creative thinking, as well as personal competencies. This includes analyzing information gathered through reading, engaging in conversations, or attentive listening. Moreover, within the framework of critical thinking, such an individual can evaluate the accuracy or inaccuracy of their opinions and positions, substantiate them with arguments, and exhibit rationality in verbal expression.

V.A. Maslova presented the components of linguistic personality as follows (Fig. 3) [15].
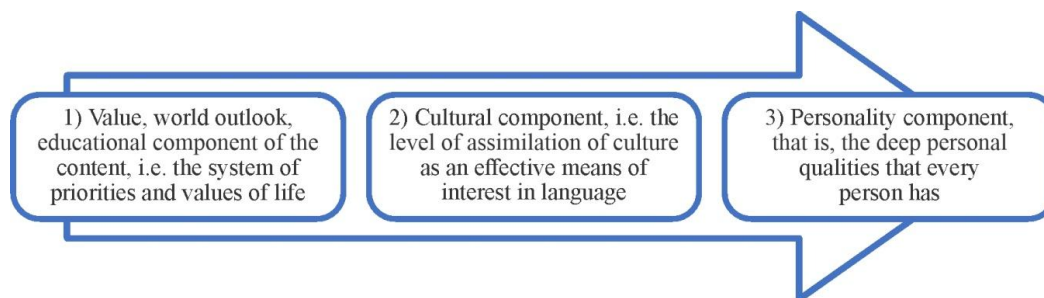
Figure 3. Components of linguistic personality

Formation of the potential of a linguistic personality is realized through its metaactivity, metacognition mastering the methods and techniques of assimilating new information. Metaknowledge is considered in

connection with metacognition. In her article, K.B. Zhanadilova, noting that academic knowledge, functional skills, personal relationships and competencies are not enough to prepare the learner for life, emphasizes the need for a new qualitative meta-cognition and meta-cognition for the organization of the learning process in the renewed content of education and preparation of the learner for life [16]. Her opinion that "knowledgeable person" should be replaced by "creatively thinking, acting, self-developing" is especially important. According to the studies of foreign scientists, metacompetence is a practical ability necessary for solving life tasks [17]. Metacompetence is referred to the class of "flexible" skills (soft skills), emphasizing that it is a source of opportunities for the development of abilities to adapt to the environment, making non-standard decisions in emerging situations, etc. H. Schaeper notes that "soft skills or flexible skills" include a mixed form of thinking, professional thinking, creativity, empathy, emotional intelligence, and concentration management; flexibility and predisposition, attitude to development (mindfulness, mental growth) [18].

Samples of assignments in Kazakh language of schoolchildren will be aimed at developing the potential of the individual, pursuing the development of the abovementioned skills. For example, if we take the assignment for the 5th grade, the final evaluation on the section "Animal World and Plant World. Vocabulary", it is obvious that the very system of conveying the topic is based on the skills of working with information along with linguistics. The assigned learning objective: 5.4.4.1 use derived words formed by suffixes and compound words in oral and written speech; 5.4.3.1 use homonyms, antonyms, synonyms according to artistic features; 5.3.4.1 talk about or describe a familiar person, a particular address, and an event, maintaining the introductory, main, concluding sections of an essay. In assignment 1, which includes reading, writing skills, suggested tasks in accordance with the learning objectives, it is necessary to find and emphasize derivative and compound words from texts A and B. The task is presented in Table 1 below.

T a b l e 1

Task 1. Find and underline derived and complex words in the given texts

Text A	Text B
Grandpa paints well, he has several kinds of self-portraits, all excellent provenance. You come to find a picture on the pages of every notebook. Not to mention there are few sketches, story drawings too, that are worthy of attention of expert artists themselves. Inside the large black sketchbook — full of carvings. Subtle patterns that do not repeat each other, like the magic pictures I used to make on the windowpane as a child. It is a kind of beauty and ingenuity that comes from the nature and the things it has created. To this day I am surprised: my grandfather never looked at the carving in front of him, did not even think of creating something original, he just used to speak about something and worked with scissors. (Z. Akhmetova "Shuaqty kunder (Sunny days)"	Saturday and Sunday are ahead — two days off. Batyrkhan took his relatives to Medeu, Koktobe, and walked around Almaty a lot. This Alatau foothills, untouched by household animals, was very much liked by his brother Baibol. When he saw the dense fir-trees covered with greenery, rows of birches and a swaying green glade, his eyes became calm. - "Oh, what a place we have here! It is not in vain they say that "Zhetisu is the beauty of all lands." What rivers in the gorges, which roar thunder! — And no matter how many animals grazed here, the richness of this greenery would be enough for everyone," he said, staring into eyes.

Assignment 2 requires compound words to be sorted into groups.

Әке-шеше (ake-sheshe), шаңсорғыш (shansorgysh), итмұрын (itmuryn), ҚазҰПУ (KazUPU), отыз екі (otyz eki), км (km), АҚШ (AKSH), тырс-тырс (tyrs-tyrs), үлкенді-кішілі (ulkendi-kishili), Екібастұз (Ekibastuz), ағайын-туыс (agaiyn-tuys), жаттап отыр (zhattap otyr), жалт-жұлт (zhalt-zhult), ҰБТ (UBT), ақ сақалды (ak sakaldy), дм (dm), Республика сарайы (Respublika saraiy), Жайлаукөл (Zhailaukol), мүйізтұмсық (muiiztumsyk), жарқ-жұрқ (zhark-zhurk). The task is presented in Table 2 below.

T a b l e 2

Task 2-Grouping complex words

Біріккен сөздер (Compound words)	Қысқарған сөздер (Abbreviations)	Қос сөздер (Joined with hyphen)	Тіркескен сөздер (Paired words)

On the Assignment 3 it is necessary to add one more word to the list of given words (mind, country, dance, mood, mountain, clean, foal, good) to create compound words. During Assignment 4, it is necessary to find homonyms, synonyms to the given sentences.

The following sentences are provided for the assignment (see Table 3):

- Бетіндегі күлкі, қуаныш ізі тез арада ғайып болды (The smile on the face and the trace of joy quickly disappeared).

- Әжемнің жүзінен ерекше сұс аңғарғандай болдым (It seemed to me that there was some special hint on my grandmother's face).

- Ашулы түрімнен қаймықты (My angry expression made him coward back).

- Енді алғашқы үзілісте ойын жаңа қызған (Now at the first break, the game only heats up).

- Оларға жаңа үйдің жаны толған қызық (They want this house to be filled).

- Арық бойларын мөлдір су қуалап, күн көзімен жалтылдап ойнай бастады (The river began to play with clear water, reflecting the rays of the sun).

- Аман аппақ, құдай арық бала (Aman is a white, skinny boy).

T a b l e 3

Task 3. Find homonyms, synonyms in the text

Homonym	Synonym

As a part of our research, we designed the tasks in such way that they integrate the development of students' language, cognitive, and personal competencies. The practical implementation of these tasks in an educational setting is carried out through active and creative forms of work that focus on independent reflection and the creative processing of linguistic material.

First and foremost, the tasks aim to foster creativity, as they involve the creation of original texts based on pre-existing expressions (proverbs, aphorisms) and their interpretation in contemporary communicative contexts. Students are also required to write essays, short stories, and other compositions utilizing specified lexical and semantic structures.

Secondly, the development of critical thinking is ensured through tasks that involve the comparative analysis of cultural concepts, identification of various interpretations of proverbs in native and studied languages, formulation of questions for the text, argumentation of one's own position, and identification of subtexts and hidden meanings.

Thirdly, students' cognitive skills are enhanced through tasks that require logical construction of spoken utterances, generalization and systematization of linguistic phenomena, classification of lexical units into thematic groups, and building models of linguistic concepts such as "Linguistic personality" and "precedent texts".

To make the learning experience more engaging and enjoyable, we have employed various forms of work that also contribute to the development of their research, creativity, and critical thinking skills. These include:

- Project assignments, such as the preparation of mini-projects on topic "Proverbs as a Mirror of Culture";

- Game forms: creation of "linguistic quests" where students reconstruct the meaning of previous texts based on clues;

- Role-playing games: staging dialogues where certain proverbs or aphorisms must be used in speech;

- Debates: defending different points of view while using precedent expressions;

- Creation of posters or presentations on national and cultural values from linguistic perspective.

Writing an essay with a volume of 80–100 words, observing the structure, choosing one of the two topics given in Task 4.

1. One of the things that is dear to human beings and cannot be reclaimed is time. And wasting time is like wasting life. Organize your thoughts and write an essay on the topic "Time is a precious treasure".

2. Animals and plants occupy a distinctive life in the life of mankind. We know that everything is a particle of nature, in close contact with each other. Collect your knowledge, information about nature and animals, write an essay on the topic "Our duty to protect nature."

Scoring table. Evaluation criterion (Table 4).

Task 4. Scoring table. Evaluation criterion

Task №	Descriptor	Score
	Learner	
1	Picks derived words from text A	2
	Picks compound words from text B	2
2	Collects compound words into groups	4
3	Forms a compund word by adding some word to given ones	8
4	Finds homonyms	2
	Finds synonyms	2
5	Picked one topic and wrote an essay, maintaining structure	10
Total		30

As we can see, the content of the thematic part and the tasks are oriented to increase the level of meta-subjectivity, based on the learner's ability to apply knowledge in practice in accordance with the requirements of the knowledge test, on the manifestation of competence and the level of assimilation of interdisciplinary sources of knowledge when analyzing information. It is evident that building a learner's flexibility and competence not only in working with information but also in using it as needed, literacy in utilizing their capabilities over time contributes to improving their linguistic potential. Speaking about the fact that in the process of working with information it is useless to simply memorize it and it is necessary to master new ways of working with information, K. Zhanadilova wrote about the formation of information competence that "information received by a person throughout his life is received and processed by a modern person only for 1 month. In the world information doubles every two years." [16].

Pupils of 8th grades and ChatGPT, which can analyze different data, were offered the task of linguistic analysis of the translation of the poem "Mountain peaks are sleeping in the night" by the poet Abai Qunanbaiuly. The task is presented in Table 5 below.

T a b l e 5

Task 4. Language analysis of Abai's translation poem "Mountain peaks are sleeping in the night"

J.W. Goethe (original)	Abai Qunanbaiuly (kazakh)	M.Y. Lermontov (russian)
Uber allen Gipfeln ist Ruh' In allen Wipfeln Spurest du Kaum einen Hauch, Die Voegelein schweigen im Walde. Warte nur, balde Ruhest du auch.	Қараңғы түнде тау қалғып, Ұйқыға кетер балбырап, Даланы жым-жырт, дел-сал қып, Түн басады салбырап. Шаң шығармас жол-дағы, Сілкіне алмас жапырақ. Тыншығарсың сен-дағы, Сабыр қылсаң азырақ.	Горные вершины Спят во тьме ночной; Тихие долины Полны свежей мглой; Не пылит дорога, Не дрожат листы. Подожди немного, Отдохнешь и ты.

The work is performed according to the terms of the assignment. Results are analysed. We have identified the peculiarities of personality and artificial intelligence functioning. The task is presented in Table 6 below.

Features of the functioning of personality and artificial intelligence

Students' work steps	AI's work steps
Students, depending on their interest, first of all, made a table like the one above, familiarized themselves with the translation by Lermontov and the original work by Goethe. Divided into groups, they discussed the content of the poem in their groups and shared their opinions. Final thoughts were presented to other groups. A complete morphological, lexical, syntactic analysis was performed. They formulated their thoughts on the peculiarity of the Abai language, figurative linguistic coloring in comparison with the original. Argumented their words according to the rules.	Having received the terms of the task, the ChatGPT immediately wrote the answer: Let us conduct a linguistic analysis of Abai's work "Mountain peaks are sleeping in the night." Phonetic analysis: there are vowels and consonants that create harmony between word and sound. There are sounds [қ], [ғ], [ұ], [н], characteristic of the Kazakh language. Morphological parsing: the poem consists of several sentences describing the mountain, nature in the dark time of the day. There is a noun, an adjective, a verb. Semantic analysis of mountains describes the image of mountains in the dark time of day, demonstrating their scale, power, and grandeur. A figurative comparison is used: "тау қалғып" (the mountain is slumbering), which creates an image of dark and strong mountain peaks. Lexical analysis: synonym, homonym.

The students shared their reports and thoughts on the activities performed and formulated the idea that human creativity is more realistic and productive than what artificial intelligence can give. They emphasized that even an artificial intelligence that worked within preinstalled automatic program depended on human activity and ideas.

Another interesting experience was to answer a question posed by the students, where AI builds a reasoning tree on the question "what is the difference between human and AI?" It answered as follows:

1. Computational power and information processing. Artificial intelligence has excellent processing power and can process large amounts of data in a short amount of time. Although humans have exceptional creativity and analytical abilities, they cannot always compete with AI in terms of speed and accuracy of information processing.

2. Emotional intelligence. Although modern AI systems can detect and analyze the emotional states of humans, they do not have emotions or feelings of their own. Unlike humans, artificial intelligence cannot empathize or experience its own emotions.

3. Creativity and intuition. Humans have the ability of creative thinking and intuition, which allows them to find new solutions and see things in an abnormal state. Artificial intelligence can create something new based on data and algorithms, but its true creativity and intuition is limited.

4. Self-awareness. A person can know himself as a person, to analyse his own opinion and thoughts, feelings and actions. Artificial intelligence does not possess these qualities and does not have self-awareness in the same sense as a human being. Thus, despite some similarities in information processing and decision making, there are fundamental differences in thinking, emotionality and creativity between AI and humans.

While analyzing and discussing the given response, the students recognized the advantages of human cognitive activity and creative expression. Simultaneously, an examination of the ability to formulate thoughts and construct coherent texts allowed us to address the level of individuals' linguistic potential development, as guided by the established principles of linguistic potentialformation and the corresponding table of developed skills. It is presented in Table 7 below.

Orientation and emerging skills of the formation of the potential of the linguistic personality

Orientation	Score	Indicators and properties
DISCUSSION	5	Can analyse a proposed situation, text
	4	Discusses wrong and right opinions during analysis
	3	Does not pay attention to wrong, correct opinions
	2	Cannot analyse
COLLECTION	5	Can summarize their understanding in a meaningful structure
	4	There will be uncertain moments in the thought's accumulation
	3	Serious errors in arguing are made
	2	Cannot clarify the situation or summarize it when exploring the text
COMPARISON	5	Can clearly identify situations, commonalities, and differences when studying a text
	4	Can find similarities and features of thoughts, life events, and phenomena in a text
	3	Makes serious errors in comparison
	2	Cannot compare any or most phenomena
REVIEW	5	Can distinguish and identify features of thought, topical or whole part in text, opinion, and story content
	4	Can use critical thinking skills when reviewing
	3	Makes serious errors in task performance, in reviewing
	2	Cannot systematically do a review, performs the task unsatisfactorily
EVALUATION OF SIGNIFICANCE	5	The student has a good command of distinguishing thoughts in a text, conveying a topic to parts of a thought, making a plan on a topic, stating the main thought in two to three sentences, naming words, reasoning, etc.
	4	Makes mild errors in highlighting when identifying meaningful, significant parts
	3	Makes mistakes in practice, application
	2	Cannot reflect the essence and meaning of the read material
SELF-SUFFICIENCY	5	The student independently fulfils the learning task, independently finds the problem and ways to solve it, actively participates in mastering problem exercises and knowledge, tries to consolidate, and supplement the answers of friends, makes decisions independently.
SELF-SUFFICIENCY	4	Independently solves the problem under the guidance of the teacher or with the support of the group
	3	A student shares a ready-made solution, shows passivity in performing the task, needs help
	2	Student's independent activity is weak (absent)
MENTAL FLEXIBILITY	5	Can carry out creative transfer of knowledge
	4	Can copy knowledge by means of correspondence (analogy)
	3	Makes serious mistakes in transferring knowledge, gives wrong ideas and answers when performing tasks such as "Analogy"
	2	Is not able to transfer knowledge, is not able to perform tasks in a formulaic, stencil way, using any analogies

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Orientation	Score	Indicators and properties
THOUGHT PROCESS	5	The student will be able to systematically, logically, argumentatively, and competently present own thought, observe the norms of literary language
	4	Norms of literary language, style, slight errors in word usage are observed, there is systematization of thoughts, argumentation of one's thought, scattering in argumentation
	3	Serious mistakes are made in sentence construction, correct use of words, the necessary sequences, reasoning, etc. are violated
	2	The logicality of the student's speech (conformity to logic) is not present
SPEED OF THINKING	5	Thinks very quickly, works smart, knows logical steps well and is active in solving problems in the moment, can choose the right solution, expresses an important opinion
	4	Thinks quickly, makes decisions confidently, haste in reasoning
	3	Thinks slowly, decision-making speed is weak
	2	Thinking requires practice and improvement

At the same time, theoretical concepts concerning linguistic personality were revealed, attention was paid to typologies, models of linguistic personality. In this context, the linguocultural approach considers the linguistic personality as a cumulative representation of an individual who embodies the language and national-cultural traditions of a specific group. V.V. Vorob'ev highlights the concept of the national linguistic personality, emphasizing the integration of language and culture as a core focus of linguoculturology [19]. Additionally, V.A. Maslova views the linguistic personality as a social phenomenon, underlining its role in the broader societal framework.

In the linguodidactic direction, we also took into account G.I. Bogin's opinion that the model of linguistic personality is a structure consisting of a systematized list of levels of linguistic personality development, i.e., considering linguistic personality as a person capable of performing linguistic actions, creating and perceiving linguistic works [12; 57]. From these two, the following aspects are emphasized: cognitive (Yu.N. Karaulov, A.P. Babushkin et al. "determination of human language activity through linguistic knowledge"), pragmatic, according to cognitive scientists (I.P. Susov, E.A. Gorlo, etc.) (pragmalinguistic) and communicative (K.F. Sedov, S.A. Sukhikh, etc.); national (V.V. Vorobiev, et al. "linguistic personality is a part of the national culture armed with the national language") [11], [19], [20], [21], [22], [23], [24]. Consideration according to these aspects allowed us to identify, to reveal aspects of linguistic personality formed in students. During its definition, we recognize the initial steps of the types of vocabulary language personality, speaking personality, dialect language personality, emotional language personality, historical language personality, elitist language personality. We have gained the ability to differentiate and study the characteristics of personality through recognizing the linguistic personality typology.

To enhance the scientific clarity of the presented material, it is considered appropriate to distinguish between the theoretical foundations and practical approaches to the formation of students' linguistic personality.

Theoretical Foundations

The main channel for the formation of students as a linguistic personality is through language classes. For a student learning another language, along with Kazakh, the experience of cognition of specificity and identity of each language is realized when familiarizing with art works or performing tasks on language acquisition. Students engage in the process of creating their own text by familiarizing themselves with the texts and analysing them.

The formation of linguistic personality involves understanding the cognitive and pragmatic intentions embedded in the language of individuals. The theoretical foundation is based on the works of researchers such as G.E. Imasheva, who investigated the linguistic personality of M. Dulatuly, G.A. Muratova, who explored the linguistic personality of Abai, and others [25], [26].

Precedent texts, including proverbs and winged expressions, are emphasized for their cognitive and emotional significance in the development of linguistic personality. Through the use of such texts, students

not only expand their linguistic repertoire but also internalize culturally significant patterns of throught and communication. Subjectivity of personality is reflected in an individual's attitude towards the world, society, and oneself, and expressed through language [27].

Recent studies note the growing tendency to view the linguistic personality as a consumer of language. According to A.K. Zhukenova, the model of forming linguistic competence consists of four stages: perception of the model, imitation of the model, substitution and transformation, and communication [28].

Practical Implementation

To implement the formation of linguistic personality in the educational practice, a variety of methods are used:

- Analyzing the language of a particular personality, considering cognitive and pragmatic intentions;
- Conducting diachronic studies of the language used by historical figures across various works;
- Modelling a linguistic personality based on individual texts;
- Inferring the linguistic personality of an author through the analysis of the language used by literary characters;
- Performing information analysis aimed at assimilating features of national identity.

Assignments are developed based on the scientific and methodological foundations established by the mentioned researchers. These assignments aim at training students perform linguistic analyses and enhance the quality of their language learning materials.

A priority approach in developing students' argumentative skills is the use of winged expressions. Students learn to apply opinions and ideas concisely, understanding their purpose and the context of their usage. Choosing culturally significant statements as proofs in argumentation trains students in presenting themselves as linguistic individuals.

Furthermore, the integration of personality-oriented pedagogical practices supports the student's autonomy, creativity, and ability to choose the content and methods of learning. This aligns with the broader objectives of renewed education program that emphasize the development of the whole personality through dialogue, creativity, and free decision-making.

The satisfaction of diverse educational needs is linked with mastering dynamically developing knowledge fields, which is critical for students' self-development. Therefore, the formation of linguistic personality in schoolchildren is closely related to pedagogical and psychological approaches that account for individual qualities, age characteristics, and the developmental dynamics of abilities. Special emphasis is placed on fostering students' creative linguistic potential to enhance the overall quality of education.

Conclusion

A learner who has developed as a linguistic person can show himself as a functionally literate person. Person acquires competences that can be used in the existing field. A learner who clearly realizes that each text, literary work is created by an individual, develops his creativity with confidence. He establishes the purpose and objectives of researching the author (work). From this moment, creativity takes root, driving the search for ways to realize the ideas and content arising in one's own mind. In the process of developing a project or plan, the learner feels a need for phonetic, morphological, lexical, and syntactic knowledge of the language system. Consequently, the student becomes oriented toward processes of research and study. When constructing a text — be it formal, scientific, or simple — they learn to recognize the differences and adapt to building a text based on its field of application.

Analyzing the assignment texts, the word creator focuses on the selected material, aligning it with the true author's interest in the creation of the work. They discuss clear and reasoned approaches to realizing the thought, the originality of the work process in relation to the event, and engage in reflection. The student identifies an author providing prose or poetic work and prepares to express their opinion by receiving information and reading it. In doing so, they perceive themselves as participants within a holistic system of interconnected processes [29].

Such a personality establishes the criterion of awareness by analyzing the influential function for the reader and the distinctive features of the author's language. It identifies the relevance and importance of information, laying the foundation for one's actions by examining the outcomes of human linguistic activity. This individual demonstrates competence in the systematic construction of language within a text — a source of integrative knowledge derived from the author's language usage as well as extra-linguistic knowledge.

The student understands that a text is constructed through sentences organized in a sequential manner. Recognizing that a text is only understood accurately when it is composed correctly, the student directs their attention to crafting it according to the required standards.

The self-analysis of a conscious being is crucial for the development of society. However, along with the development of skills of analysing information, forecasting, setting goals, evaluating the perfect deed, the expressed thought, it is also legitimate to have internal distrust, internal objections and doubts. This, in turn, requires the improvement of knowledge sources in psychological terms as well. This is also the rationality of forming the abilities and potential of a linguistic personality: a learner finds psychological support and answers to his questions through the process of studying a work and engaging with a task.

A linguistic personality is an individual who is unique, meets the criteria of a true personality, and possesses qualitative traits that distinguish them from others. This linguistic personality is a creative person, capable of forming texts, embodying a business-minded soul, and presenting their "product of creativity." B.I. Nurdauletova described the term "linguistic personality" as follows: "A personality is the possessor of an intellectually unusual being... Personality is primarily characterized by individuality. Secondly, one must recognize, feel, and embody the values intrinsic to humanity, and these values must be reflected within oneself. Thirdly, the intellectual cognition stemming from personality must manifest as a particular form of culture (such as the art of words, drawings, sculptures, music, etc.)." Likewise, M. Heidegger's viewpoint that an individual's traits are revealed through their language is supported by countless examples, instances, and the legacy of orators taught in schools, starting with al-Farabi.

The search for the formation of personality has been successfully realized in the humanitarian school-lyceum of Kazakh culture by A. Kyraubayeva [30; 72]. "Folk education, in our opinion, should not be limited to ethnography. Folk wisdom gives meaning to the child's soul. Not to unduly restrict their freedom, not to suppress the child. Special attention must be given to the culture of speech, appearance, and behavior. From this ancestral tradition, we learn how to raise an ambitious citizen of our nation," she said, encapsulating the foundation of the national school concept. Steps to form the linguistic potential of an individual at Kazakh language lessons are clearly reflected in methodical manuals written on the experience of the school. In the world the scientist speaks about, there is a concept of language personality in the being of generation recognized as "Kazakh phenomenon." If it is so, then the formation of linguistic personality potential of schoolchildren is an imperative of a present world.

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Ж.Н. Кумисбекова, Ж.Т. Сарыбекова, Р.К. Керимбаева

Оқушылардың тілдік әлеуетін қалыптастыру тәжірибесі мен ізденісі

Мақалада қазіргі білім беру жағдайында мектеп оқушыларының тілдік тұлғасын қалыптастыру және тілдік әлеуетін дамытудың теориялық негіздері мен практикалық тәсілдері қарастырылған. Зерттеу лингвистика, педагогика және психология саласындағы ғылыми еңбектерді кешенді талдауға, сондай-ақ эксперименттік жұмыс барысында алынған эмпирикалық деректерді жалпылауға негізделген. Авторлар ұлттық-мәдени құндылықтардың, прецеденттік мәтіндер мен шығармашылық тапсырмалардың рөліне назар аудара отырып, тілдік тұлғаның даму компоненттері мен кезеңдерін жүйелейді. Инновациялық білім беру технологияларын қолдану оқушылардың креативтілігін, сын тұрғысынан ойлау қабілеттерін және танымдық белсенділігін арттырудың тиімді ынталандырудың тиімді құралы ретінде ұсынылады. Эксперименттік тапсырмаларды әзірлеу барысында білім алушылардың ақпаратты өз бетінше меңгерулері, тілдік және мәдени элементтерді интеграциялау, коммуникативтік құзыреттілікті қалыптастыру мақсат етіледі. Ұсынылған әдістердің практикалық маңыздылығын тексеру үшін салыстыру, жүйелеу және жалпылау әдістері қолданылды. Эксперименттік жұмыстың нәтижелері прецеденттік мәтіндер мен ұлттық мәдениеттің элементтерін жүйелі түрде қолдану оқушылардың тілдік белсенділігін арттырып, олардың жеке тілдік даралығын дамытуға ықпал ететінін көрсетті. Мақала соңында берілген мектептегі тілдік оқытуға қатысты ұсынымдар білім беру

процесін жаңғыртуға және тілді меңгеру арқылы оқушылардың өз қабілеттерін іске асыра білу дағдыларын дамытуға ықпал етеді. Мақала материалдары қазақ тілі мұғалімдеріне, бастауыш және орта мектеп оқытушыларына, әдіскерлерге, педагогика және лингводидактика саласындағы мамандарға, сондай-ақ оқушылардың тілдік тұлғасын дамыту мәселелерімен айналысатын зерттеушілерге пайдалы болуы мүмкін.

Кілт сөздер: тілдік тұлға, тілді оқыту, тілдік құзыреттер, тұлға әлеуеті, мектеп тәжірибесі, тәрбие, өзіндік ізденіс, функционалдық сауаттылық.

Ж.Н. Кумисбекова, Ж.Т. Сарыбекова, Р.К. Керимбаева

Поиск и опыт формирования языкового потенциала школьников

В статье рассматриваются теоретические основы и практические подходы к формированию языковой личности и развитию языкового потенциала школьников в современных образовательных условиях. Исследование опирается на комплексный анализ научных трудов в области лингвистики, педагогики и психологии, а также на обобщение эмпирических данных, полученных в ходе экспериментальной работы. Авторы систематизируют компоненты и этапы развития языковой личности, акцентируя внимание на роли национально-культурных ценностей, прецедентных текстов и творческих заданий. Предлагается использование инновационных образовательных технологий как эффективного инструмента стимулирования креативности, критического мышления и когнитивной активности учащихся. Особое внимание уделено разработке экспериментальных заданий, интеграции языковых и культурных элементов, активному участию учащихся в образовательном процессе. Применялись методы сравнения, систематизации и обобщения для проверки практической значимости предложенного подхода. Результаты экспериментальной работы свидетельствуют о том, что структурированное использование прецедентных текстов и элементов национальной культуры способствует формированию у школьников индивидуального языкового самовыражения. В завершение статьи представлены рекомендации по внедрению полученных результатов в школьное языковое обучение, что способствует модернизации образовательного процесса и развитию самореализации учащихся посредством овладения языком. Материалы статьи могут быть полезны учителям казахского языка, преподавателям начальной и средней школы, методистам, специалистам в области педагогики и лингводидактики, а также исследователям, занимающимся вопросами развития языковой личности школьников.

Ключевые слова: языковая личность, языковое обучение, языковые компетенции, личностный потенциал, школьный опыт, воспитание, самостоятельный поиск, функциональная грамотность.

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Study of the problem of younger children's adaptation to learning through their value-based attitude to school

In this scientific article the authors considered the problem of adaptation, namely, the adaptation of primary school children to school and education. The study was conducted based on school № 26 of Karaganda City among 1st-grade pupils. The problem of children's adaptation was considered through the prism of their value attitude to school, which was revealed through several methods to determine the level of adaptation to school learning. Parents of children also took part in the study. The results of the study allowed the authors to identify the existing problems of children's adaptation and some pedagogical conditions for successful adaptation to school. The parents of the children also participated in the study. The results of the study allowed the authors to identify the existing problems of children's adaptation and some pedagogical conditions for the success of the process of adaptation to school. The study identified key factors contributing to successful adaptation: positive motivation to learn, a favorable psychological climate in the classroom, and the active participation of parents in the educational process. In addition, individual and social factors influencing adaptation were considered, including the level of a child's readiness for school, the characteristics of his temperament, interaction with classmates and parents' attitude to the educational process. The article offers recommendations aimed at creating favorable conditions for the formation of a stable positive attitude towards school among children.

Keywords: adaptation, maladaptation, value-based attitude, school process, school environment, adaptation, learning activity, junior schoolchild, experiment, integration

Introduction

In the psycho-pedagogical science of Kazakhstan, research aimed at studying the problem of children's adaptation to school education has recently become increasingly important.

The term "adaptation" emerged in the 19th century (from the Latin "adaptor" — I adapt), meaning the adaptation of the organism to changing environmental conditions (field of biology), "the result of natural selection in the struggle for existence" (materialistic interpretation of C. Darwin) [1], the level of which can be determined by specific criteria: well-being, efficiency, sleep, appetite, the presence of diseases, exacerbation of chronic diseases, etc. (physical adaptation).

The philosophical explanation of the adaptation process is based on the change of a person under the influence of the external environment and the result of this change.

From the point of view of psychology, adaptation implies psychological adjustment to environmental conditions, the relationship between an individual and his/her environment as a process of mutual balancing, the change of personality stereotype following environmental conditions, as a result — a stage of intellectual development of a child (J. Piaget, theory of intellectual development) [2]. The criteria for assessing the level of psychological adaptation are motivation to learn, the level of development of psychological processes, mood, readiness, ability for self-reflection, etc.

There is a social adaptation, in the process by which a person builds his/her model of behaviour according to the social environment, strives to emulate social behavior, and consciously forms his/her ways of behaviour to find harmony with others, gets closer to the society, adopting its goals, value orientations, norms, traditions and foundations.

School adaptation is a complex and lengthy process in a child's life. The child takes on a new social role — the role of a pupil — while engaging in a new type of activity: learning. Their social environment shifts as they interact with classmates and teachers, and they must integrate into a new social group — the

school community. The transition to schooling is marked by adaptation to school conditions, requiring different cognitive engagement than in preschool and altering relationships with those around them.

In our study, we aim to explore the nature of adaptation, the child's value-based attitude toward school, and the conditions necessary for effective school adaptation. We will also examine what actions should be taken, and by whom, to ensure that the adaptation process is appropriate, enabling the school to support the child's psychological, personal, and social development.

Our research was based on the hypothesis: the process of children's adaptation to school learning will be effective if the child's educational activity is built with consideration of the child's value-based attitude to learning and implementation of pedagogical conditions of adaptation to school.

Materials and methods

The diagnostic orientation of the process determined the research format: the study of theoretical literature on adaptation problems, and scientific works of foreign and Kazakh researchers (A.V. Petrovsky, L.I. Bozhovich, I.V. Dubrovina, M.R. Bityanova, M.M. Bezrukikh, N.I. Gutkina, N.N. Tarasenko, V.V. Davydov, etc.), development of applied aspects of adaptation of junior schoolchildren to learning.

In order to collect empirical material, we used such research methods as analysis, comparison, interviews, observation, questionnaires, statistical processing of data, expert evaluation, and interpretation of results.

The participants of the study were primary school children and their parents, school teachers, and teachers of school № 26 of Karaganda City.

The analysis of the psychological aspects of value-based attitudes toward school revealed formation of value-based attitudes of junior schoolchildren as an important component of their adaptation to the educational process. As noted by Guay, Bureau, value-based attitude to school is related to the level of internal motivation of the child, which is formed under the influence of the environment and interpersonal relations. The authors emphasise that children who develop positive emotions and associations related to school show higher levels of engagement and success in learning [3].

Teachers play a key role in creating conditions conducive to the successful adaptation of younger pupils. Pedagogical methods based on empathy and individual approach increase children's satisfaction with the school environment. In particular, using interactive techniques and encouraging creative activity contributes to forming a child's positive attitude to the learning process [4]. The value-based attitude towards school in younger students depends largely on their social environment, including parents, classmates and teachers. Johnson and Lee's research emphasises the importance of family and school interaction in the adaptation process. Children whose parents are actively involved in school life more easily accept new requirements and integrate into the school community more quickly [5]. Forming a culture of cooperation between home and school is an effective means of reducing stress levels in first-graders.

Social adaptation of junior schoolchildren to the educational process is a key component of general adaptation to school. Studies show that successful adaptation to new social conditions contributes to increasing the level of learning motivation and emotional well-being of children. For example, the works of N.I. Gutkina [6] and Hafizova, K.A. [7] point to the importance of supporting children in establishing social ties at school and teaching them constructive interaction. The use of innovative pedagogical technologies plays an important role in ensuring successful adaptation of junior schoolchildren. In particular, the use of game techniques and developmental learning technologies contributes to the creation of a favourable emotional atmosphere in the classroom. A systematic approach to the integration of such techniques was successfully applied in the study of V.V. Davydov [8]. Adaptation of junior schoolchildren also includes a physiological aspect. Studies show that the adaptation period is associated with changes in the work of the nervous and cardiovascular systems. According to M.M. Bezrukikh [9], children experiencing an increased level of stress have a longer adaptation period. This requires special attention from teachers and parents.

The teacher plays a central role in the adaptation process of first-graders. According to A.V. Petrovsky [9], the style of pedagogical interaction and emotional support from the teacher significantly affect the success of adaptation. Teachers who create a supportive environment help children to get used to the new role of a student faster.

The role of parents in children's adaptation to school education can hardly be overestimated. Studies by T.V. Dorozhevets [10] show that parental involvement in the educational process contributes to the strengthening of children's value-based attitude to school. Effective interaction between parents and teachers reduces the risk of maladaptation.

An individual approach to each pupil is an important condition for successful adaptation. According to Piaget taking into account the individual characteristics of a child contributes to a smoother transition to school education [11]. For example, the creation of adapted learning programmes helps children with different starting opportunities to enter the learning process faster. Gaming activities continue to play a significant role in the lives of junior schoolchildren. Studies by L.I. Bozhovich [12] demonstrate that the integration of game elements into the learning process increases motivation for learning and facilitates the transition to new requirements. Psychological support of first-graders during the adaptation period contributes to the reduction of anxiety and the formation of stable learning motivation. The works of I.V. Dubrovina [13] confirm the need for regular conversations with psychologists and group training. Creating a positive school environment contributes to the successful adaptation of junior schoolchildren. According to Nieminen J.H [14], children who feel safe and comfortable at school, master the new role of a student faster.

The results of the conducted interventions show that the implementation of adaptation programmes based on an integrated approach gives sustainable positive results. The authors recommend wider use of pedagogical techniques aimed at the development of emotional intelligence, social and communication skills and the formation of a positive attitude to learning [15].

Results and discussions

The starting point in our study was the study of the problem field, the analysis of scientific literature on the problem of adaptation of younger schoolchildren to school learning, and the conditions of the school environment.

It is well known that the process of adaptation of an individual to certain conditions is a long and complex process, associated with the stages of change of activity and social environment [16]. For a junior schoolchild, such a stage of change of activity is the beginning of school education at school.

In the younger school age, there is not only a change of activity but also a change of educational conditions — there is a new educational environment, which makes certain requirements to the personality of the younger schoolchild [17].

These requirements relate not only to learning activities, but also to the observance of certain behavioral norms, the ability to interact with peers and teachers, and the ability to organize one's time and efforts. The school environment places demand on self-regulation, responsibility and diligence on the younger pupil.

An important aspect of adaptation is a child's psychological readiness for schooling, which includes motivational, intellectual and emotional-volitional readiness. Motivational readiness is connected with the desire to learn, interest in new knowledge, as well as with an understanding of the social significance of schooling. Intellectual readiness assumes a certain level of development of thinking, memory, and attention necessary for mastering the school program. Emotional and volitional readiness encompasses the ability to control one's behavior, follow rules and norms, and overcome difficulties.

The process of adaptation of junior schoolchildren to school can be divided into several stages: initial (first weeks of study), main (first half of the year) and final (end of the first year of study). Each of these stages shows its own peculiarities and possible difficulties. At the initial stage, the child faces a new organization of the day, the need to follow the school regime and to maintain new social contacts. In the main period, there may be difficulties with learning tasks and mastering the material, as well as the first marks. The final stage is characterized by the consolidation of new habits and roles in the school environment. The most important role in the adaptation process is played not only by the child's individual psychological characteristics but also by social factors: support from family, teachers and peers. Pedagogical support includes the creation of a favorable emotional atmosphere in the classroom, an individual approach to each student, as well as a flexible system of requirements. Thus, the successful adaptation of a junior school child to school depends on many interrelated factors, including the child's personal characteristics, the level of psychological readiness, as well as the influence of the school and family environment. This emphasizes the need for a comprehensive approach to studying and supporting the adaptation process, which was the main objective of our study.

Adaptation in its content is a continuous process aimed at adapting the child to the changing conditions of the educational environment with the help of various means, which is accompanied by a progressive restructuring of the functional systems of organism. Signs of its disorders are low level of school motivation, disruption of the functioning of organs and body systems, low level of physical performance and fitness, rapid fatigue, anxiety, insecurity, etc. The consequence of adaptation disorders can be hereditary factors and a number of unresolved problems in the process of physical education at school related to the adaptation of

children to school conditions, health, and the formation of a harmoniously developed personality. The search for ways to optimize adaptation processes and reduce the morbidity of children led to the consideration of the existing potential of physical education in this direction, which is associated with the introduction of health-forming technologies. The search for ways to optimize adaptation processes and reduce the morbidity of children has led to the consideration of the existing potential of physical education in this direction, which is associated with the introduction of health-forming technologies [18].

Having analyzed the scientific approaches of many scientists to the problem of adaptation, we have derived the author's vision of the process of adaptation of young children to school education, which consists of the following components:

- organizational and psychological readiness of the child for schooling;
- the systematic integration of the child into school processes;
- engagement in a communicative environment;
- value-based attitude to school (assimilation of norms and values of the school environment) (Table 1).

T a b l e 1

Components of the process of adaptation of young children to schooling

The process of a child's adaptation to school	- Organisational and psychological readiness of a child for schooling
	- smooth integration of the child into school processes
	- engagement in a communicative environment
	- appreciation of school

A child's organisational readiness for schooling is characterised by his or her ability to meet the demands of school and to organise his or her activities in the learning environment. It includes a range of skills and abilities that help to adapt to school life and learn effectively. The main components of organisational readiness:

- self-organisation and discipline: the child knows how to follow daily routines, follow adult instructions, and manage his/her time and work;
- rule-following: children must understand and follow classroom and school rules. This includes following instructions carefully, taking turns, following the rules of the classroom and the teacher's requirements;
- goal-setting skills: the ability to set learning objectives and follow through, which is important for homework and planning learning activities;
- focus and attention: the ability to concentrate on tasks, ignore distractions, and move from one activity to another.

Organisational readiness is developed long before school entry, and parents, carers and educators can help children develop these skills through games that include rules, independent tasks and collective forms of activity.

The success or failure of a child's learning activity depends on psychological readiness [19]. Some scientists believe that successful learning activity leads to adaptation, while unsuccessfulness leads to maladaptation, resulting in difficulties in learning, conflicts and misunderstandings in class, low level of learning motivation, etc. [20].

According to Dorozhevets T.V., the level of successful adaptation to social conditions speaks about the child's psychological readiness, and the lack of psychological readiness leads to personality conflicts, poor social adaptation, and emotional vulnerability [21].

In addition, the presence of psychological readiness for schooling guarantees, first of all, the psychological health of the child and, therefore, successful learning [22, 23].

Thus, an adopted child is adapted to the development of his personal, physical, and intellectual qualities in a new school environment [24].

The process of integrating a child into school processes is a gradual inclusion of the child into the academic, social and organisational life of the school, which requires not only mastering the curriculum, but also developing skills of interaction with classmates, teachers, and acceptance of school rules and norms. Successful integration helps the child feel comfortable in the new environment and actively participate in the life of the class and school.

The degree of integration directly affects the child's involvement in the communicative environment of the school, which implies not only communication in learning activities, but also the ability to communicate with classmates, teachers, and all participants of the school community.

In our study, we paid special attention to the identification of children's value-based attitude to school, to schooling and turned to the methods of children's adaptation to school, which are developed in pedagogical science and are actively used in research. These are methods, such as "Free classification," "Sun, cloud, rain," "Test conversation," "Starting level of a first-grader," "Colours," "What I like at school," "L. Stott's observation map," "Drawing figures," etc. These methods are complex and include several blocks, each of which addresses the tasks of the child's personal development through organised activities.

The experiment was conducted among 1st-grade pupils of school № 26 of Karaganda City. As acceptable methods, we have chosen the method "Colours," and the method "What do I like at school?" (According to N.G. Luskanova), which alternated in use among junior schoolchildren.

The "Colours" method consisted of the fact that pupils received a sheet of paper with circles in which words related to school and learning (book, teacher, class, school, lesson, homework, notebook, grade) were written. The task of the pupils was to paint the circles in colours, each of which denotes the child's attitude to the word: dark colours — negative attitude, bright colours — positive attitude. Diagnostics allowed us to determine the child's emotional attitude to school.

The results of the "Colours" technique are presented in Figures 1 and 2.

Figure 1. Negative attitudes towards school
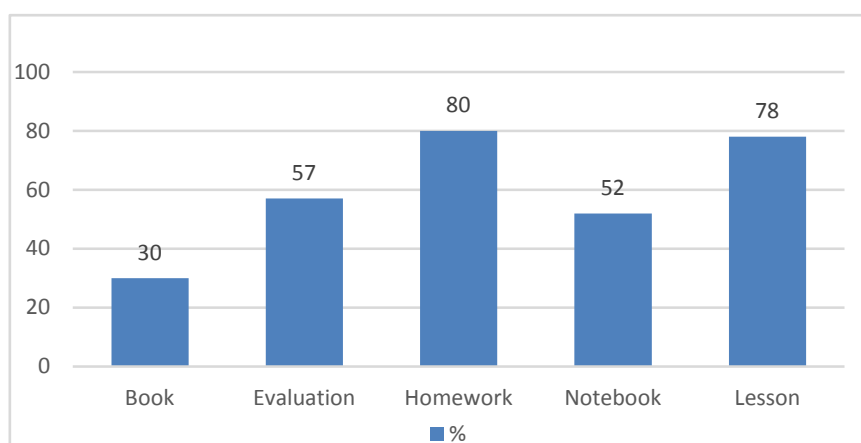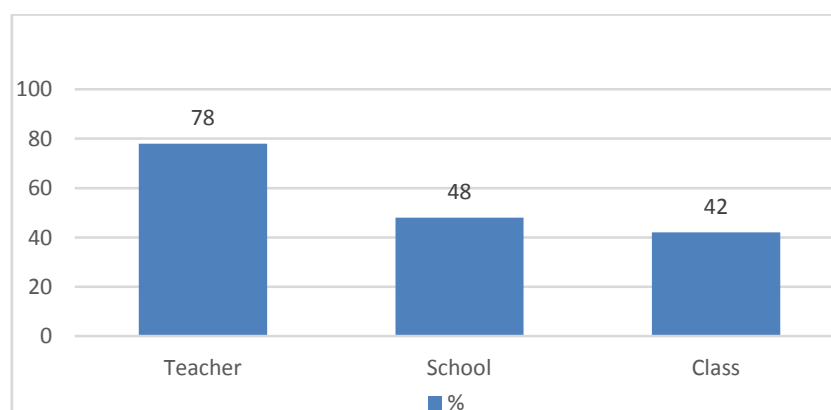

Figure 2. Positive attitudes towards school

From Figures 1 and 2 we see that such concepts as "teacher" (78 %), "school" (48 %), and "class" (42 %) reflect pupils' positive attitude to school education, to school (painted in bright colours). The concepts "book", "homework", "lesson", and "notebook" are painted in dark colours and demonstrate negative attitudes toward school education.

The use of the method "What do I like about school?" (According to N.G. Luskanova) the course of the research made it possible to reveal children's attitudes towards school by interpreting and analysing the drawings depicted by children (Fig. 3).
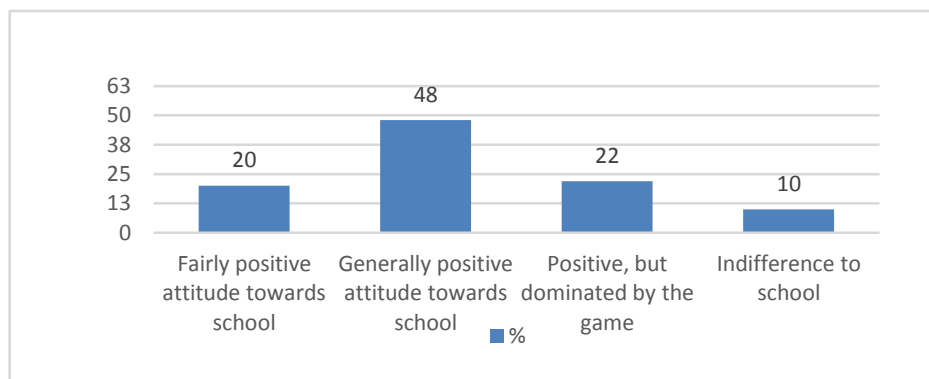
Figure 3. Results of the methodology "What do I like at school?" (According to N.G. Luskanova)

As can be seen in Figure 3, the results of the methodology showed the following:

- 20 % of children drew a teacher, a classroom, and a blackboard, indicating that the child has a positive attitude towards school;

- 48 % of children presented drawings of a non-educational nature (students at recess, students on the street, in the canteen), which demonstrates a generally positive attitude towards school, but the focus is on external school attributes;

- 22 % of pupils drew situations with non-school content (park, toys, bicycle), which indicates that children have a positive attitude towards school, but their play-driven motivation dominates.

- 10 % of schoolchildren do not have school themes in their drawings (cars, patterns, flowers), which indicates that the school environment is indifferent to them, children feel negative emotions when perceiving concepts related to schooling.

It follows from the above (detailed analysis of the results of both methods) that more than half of primary school children do not have a sufficient level of adaptation to school learning, which actualizes the research problem and requires careful consideration.

Adult participants in the educational process — teachers and parents — play an important role in ensuring successful adaptation. Therefore, we surveyed parents of 1st-grade pupils, which allowed us to identify the range of problems related to the adaptation process of schoolchildren.

Parents' answers show that the adaptation period is complicated by the following factors:

- not every child is ready for school: when entering school, the child does not possess basic learning skills (counting, reading, knowing letters, etc.).

- the child is experiencing organizational difficulties (with the new daily routine, getting up in the morning, going to bed);

- the child is not ready to communicate with unfamiliar children (there are many new people with whom connections need to be established, but difficulties arise in communicating with classmates);

- unpreparedness for clear routines and discipline (stricter system of requirements);

- the school environment does not always provide an emotionally positive relationship with children;

- absence of play activities (abrupt transition from play to learning activities), etc.

Regression analysis of parents' assessments of their children's academic adaptation indicators revealed positive and negative predictors of the objective indicator of academic adaptation: grade point average. These data highlight the critical role of school adaptation in shaping communication skills, the flexibility of peer and teacher interactions, the overall emotional state of the child within the school environment, and key aspects of learning activities (ease of mastering the material, learning skills, psychological attunement to learning, presence/absence of tension when faced with a learning task), as well as a set of motivational characteristics. Thus, the results of the questionnaire survey and regression analysis allow us to conclude that successful adaptation of first-graders to school life is a complex process that depends on many factors. The following measures can be suggested to increase the level of children's adaptation to the school environment:

1. Preparation for school: organization of special preparatory courses where children can master basic learning skills (reading, writing, counting), which will reduce the level of anxiety and insecurity.

2. Organizing a smooth transition from play to learning activities: introducing play techniques at the first stages of learning will help children to accept new requirements more easily and not experience sudden stress.

3. Development of communicative skills: conducting collective games, team-building trainings and activities that promote the establishment of friendly relations between classmates.

4. Working with parents: informing parents about possible difficulties of the adaptation period and ways of overcoming them, organizing parent meetings, and consultations with psychologists and teachers.

5. Psychological support involves ensuring that the school has a psychologist available, providing children and parents with a reliable resource for guidance and assistance in addressing challenges.

6. Individual approach: taking into account the peculiarities of each child — the level of training, temperament, and communication style, which allows the teacher to adjust the method of work depending on the needs of the class.

Thus, close cooperation of teachers, parents and school specialists, as well as attention to the individual characteristics of each student will help to create favorable conditions for the successful adaptation of first-graders and their comfortable entry into school life.

Conclusion

Thus, the adaptation of young children to school education is a process of personal change of the child and the result of his/her adaptation to new conditions of life activity. Successful adaptation of primary school-age children to school life is the key to successful learning and the personal well-being of the child.

The conducted research revealed that the following conditions must be met to ensure successful adaptation:

- it is necessary to provide an individual approach to each child in the process of his/her school adaptation in order to form a positive attitude towards school;

- it is necessary to ensure active cooperation between teachers and parents in the interests of the child as he or she enters school life;

- involvement of elements of game activities in the learning process in primary school, which will increase the level of adaptation of first-graders to learning.

Thus, the developed hypothesis of the study was confirmed by the conducted experiment. Our research does not exhaust all the issues related to children's adaptation to school and can be the subject of further research.

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Кіші балалардың мектепке құндылық қатынасы арқылы оқуға бейімделу мәселесін зерттеу

Мақалада авторлар бейімделу мәселесін қарастырған, яғни бастауыш мектеп жасындағы балаларды мектепке және оқуға бейімдеу. Зерттеу 1-сынып оқушылары арасында Қарағанды қаласының № 26 мектебінің базасында жүргізілді. Балалардың бейімделу мәселесі олардың мектепке деген құндылық қатынасының объективі арқылы зерделенген, ол мектепке бейімделу деңгейін анықтау үшін бірқатар әдістер арқылы айқындалады. Зерттеуге балалардың ата-аналары да қатысты. Зерттеу нәтижелері авторларға балалардың бейімделу мәселелерін және мектепке бейімделу процесінің сәттілігінің кейбір педагогикалық шарттарын анықтауға мүмкіндік берді. Зерттеу барысында сәтті бейімделуге ықпал ететін негізгі факторлар анықталды: оқуға оң мотивация, сыныптағы қолайлы психологиялық климат, ата-аналардың білім беру процесіне белсенді қатысуы. Сонымен қатар, бейімделуге әсер ететін жеке және әлеуметтік факторлар, соның ішінде баланың мектепке дайындық деңгейі, оның темпераментінің ерекшеліктері, сыныптастарымен қарым-қатынасы және ата-аналардың оқу процесіне қатынасы қарастырылды. Зерттеу нәтижелері бейімделу кезеңінде бірінші сынып оқушыларын қолдау стратегияларын әзірлеу кезінде тәрбиешілерге, психологтарға және ата-аналарға пайдалы болуы мүмкін. Мақалада балалардың мектепке деген тұрақты оң көзқарасын қалыптастыру үшін қолайлы жағдайлар жасауға бағытталған ұсыныстар берілген.

Кілт сөздер: бейімделу, бейімсіздену, құндылық қатынасы, мектеп процесі, мектеп ортасы, икемделу, оқу қызметі, кіші мектеп оқушысы, эксперимент, интеграция.

А.А. Тлеужанова, П.З. Ишанов, А.С. Мехмет

Исследование проблемы адаптации младших детей к обучению через их ценностное отношение к школе

В данной научной статье авторами рассматривается проблема адаптации детей младшего школьного возраста к школе и обучению. Исследование проведено на базе школы № 26 города Караганды среди учеников 1-ых классов. Проблема адаптации детей рассматривается сквозь призму их ценностного отношения к школе, которое выявляется посредством проведения ряда методик по определению уровня адаптации к школьному обучению. В исследовании также приняли участие родители детей. Результаты исследования позволили авторам определить имеющиеся проблемы адаптации детей и некоторые педагогические условия успешности процесса адаптации к школе. В ходе исследования были выявлены ключевые факторы, способствующие успешной адаптации: положительная мотивация к обучению, благоприятный психологический климат в классе, активное участие родителей в образовательном процессе. Кроме того, были рассмотрены индивидуальные и социальные факторы, влияющие на адаптацию, включая уровень подготовленности ребенка к школе, особенности его темперамента, взаимодействие с одноклассниками и отношение родителей к учебному процессу. Результаты исследования могут быть полезны для педагогов, психологов и родителей при разработке стратегий поддержки первоклассников в период адаптации. В статье предложены рекомендации, направленные на создание благоприятных условий для формирования у детей устойчивого позитивного отношения к школе.

Ключевые слова: адаптация, дезадаптация, ценностное отношение, школьный процесс, школьная среда, приспособление, учебная деятельность, младший школьник, эксперимент, интеграция.

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Бастауыш сынып оқушыларының функционалдық сауаттылық деңгейін зерттеу: өзін-өзі бағалау шкаласы

Бастауыш сынып оқушыларының функционалдық сауаттылығы заманауи қоғамда өмір сүруге дайындықтың маңызды құрамдас бөлігі. Мақалада бастауыш сынып оқушыларының функционалдық сауаттылық деңгейін бағалауға арналған зерттеу ұсынылған, ол өзін-өзі бағалау шкаласын әзірлеу және қолдануға негізделген. Мақалада функционалдық сауаттылық ұғымының теориялық негіздері, оның негізгі компоненттері және оларды бастауыш сыныпта қалыптастырудың маңыздылығы егжей-тегжейлі баяндалған. Оқу сауаттылығы функционалдық сауаттылықтың құрамдас бөлігі ретінде әртүрлі жазбаша мәтіндер мен оқу материалдарын түсінуге мүмкіндік береді. Цифрлық сауаттылық білім алу және өмір сүру үшін ресурстарға қол жеткізу және оларды тиімді пайдалану мүмкіндігін қамтамасыз етеді. Әлеуметтік сауаттылық тиімді ынтымақтастық пен топтық жұмыс кезінде білімді қолдануға ықпал етеді. Функционалдық сауаттылықты зерттеуде оның қалыптасу деңгейін диагностикалау маңызды аспект. Авторлар бастауыш сынып оқушыларының функционалдық сауаттылық компоненттерін өзін-өзі бағалау үшін арналған шкаланың құрылымын әзірлеп, оның зерттеу нәтижелерін талдаған. Нәтижелер бастауыш сынып оқушыларының функционалдық сауаттылық деңгейін анықтауға және оқу процесінде педагогикалық назар аударуды қажет ететін салаларды анықтауға мүмкіндік берді. Мақалада бастауыш сынып оқушыларының функционалдық сауаттылық деңгейіне әсер ететін факторлар, оның ішінде төмен көрсеткіштердің себептері де талданған. Алынған деректер негізінде бастауыш сынып оқушыларының функционалдық сауаттылығын арттыруға бағытталған педагогикалық ұсыныстар берілген, бұл зерттеуді бастауыш білім саласындағы педагогтер мен зерттеушілер үшін өзекті және пайдалы етеді.

Кілт сөздер: функционалдық сауаттылық, бастауыш сынып оқушылары, бастауыш мектеп, өзін-өзі бағалау шкаласы, оқу сауаттылығы, математикалық сауаттылық, цифрлық сауаттылық, ғылыми сауаттылық, әлеуметтік сауаттылық.

Кіріспе

Заманауи білім беру оқушыларға тек теориялық білім алу мүмкіндігін ғана емес, сонымен қатар оларды практикада қолдану, дағдылар мен қабілеттерді дамыту, сондай-ақ пәнаралық және метапәндік байланыстарды қалыптастыру мүмкіндігін беруге бағытталған. Оқушылар тек білім алумен шектелмей, оларды нақты өмірлік жағдайларда саналы түрде қолдана білуі қажет.

Білім беру мазмұнын жетілдіру білім алушының оқу жүктемесін төмендетуді, академиялық білімге баса назар аударуды, функционалдық сауаттылықты дамытуды, білім алушылардың қажеттіліктерін ескере отырып, мазмұнды дағдылар мен құзыреттерді дамытуға бағдарлауды көздейді [1].

Бастауыш білім берудің мақсаты — оқушының жан-жақты дамуын қолдайтын және әртүрлі салалардағы негізгі дағдыларды меңгеруге мүмкіндік беретін білім беру ортасын қалыптастыру. Оған функционалдық және шығармашылық білімді қолдану дағдылары, сыни ойлау, зерттеу жұмыстарын жүргізу, ақпараттық-коммуникациялық технологияларды қолдану, түрлі коммуникация тәсілдерін пайдалану, тілдік дағдылар мен топтық және жеке жұмыс істеу дағдылары кіреді [2].

Бұл көпқырлы құзыреттілікті қазіргі уақытта «функционалдық сауаттылық» деп те атайды.

Функционалдық сауаттылықты зерттеу өзектілігі оның қазіргі қоғамда жеке тұлғаның тиімді бейімделуі үшін маңызды рөл атқаратынымен түсіндіріледі. Бұл кезеңде жылдам өзгерістер, жаһандану және цифрландыру процесі байқалуда. Қазіргі экономика тек базалық білімдерді ғана емес, оларды іс жүзінде қолдана білуді де талап етеді. Ақпараттың артықтығы мен шынайы емес мәліметтердің таралуы жағдайында деректерді талдау, сыни тұрғыдан бағалау және қолдану қабілеті қажетті дағдыға айналады. Цифрландыру барлық өмір салаларына еніп, адамның технологияларды

тиімді пайдалануын, сондай-ақ цифрлық ортада қауіпсіз әрекеттесуін талап етеді. Функционалдық сауаттылық әлеуметтік теңсіздікті азайтуға ықпал етіп, адамның қоғамға табысты бейімделуіне мүмкіндік береді.

Шетелдік ғалымдар функционалдық сауаттылықты тұлға мен қоғамның дамуына байланысты көпқырлы концепция ретінде анықтайды. М.Özenç, C.Çarkıt тұлғаға «жұмсалған жалпы білім, дағдылар мен қабілеттерді күнделікті өмірде қолдану мүмкіндігін береді, бұл өмір сапасын айтарлықтай арттырады», – деп қарастырады [3].

Н.Ф. Виноградова функционалдық сауаттылықты: «жаңа нәрсені білуге ұмтылу, адамдар арасында өмір сүру және әрекет ету дағдысы, коммуникативтік және іскерлік қасиеттерге ие болу, заманауи құзыреттерді меңгеру», – деп түсіндіреді [4].

Функционалдық сауаттылықты білім берудің метапәндік нәтижесі ретінде түсіну қажет, ол адамға әртүрлі қызмет салаларында өзекті мәселелерді шешу үшін білімді қолдану қабілетін береді. Оның қалыптасуы барлық оқу пәндерін қамтиды, бұл оның бастауыш сынып оқушыларының заманауи әлемде сәтті бейімделуі үшін маңыздылығын көрсетеді.

Функционалдық сауаттылықтың негіздері бастауыш мектепте қаланады, осы кезеңде оқушылар сөздік және оқу әрекеттерінің негізгі түрлерін меңгереді, математика, жаратылыстану пәндері және технологиялар бойынша дағдыларын дамытады.

Бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыру мәселесі қазіргі уақытта белсенді ғылыми зерттеу және теориялық-әдіснамалық жұмыстардың нысанасына айналуда.

М.Özenç пен C.Çarkıt-тың зерттеуінде 4-сынып оқушыларының функционалдық сауаттылық деңгейі мен олардың проблемаларды шешу дағдылары арасындағы оң байланыс, сондай-ақ функционалдық сауаттылықтың оқушылардың проблемалық жағдайларда күресу қабілетіне әсері талданған [3].

Функционалдық сауаттылық картасын жасау мақсатында жүргізілген зерттеуде B.Nurgiyantoro және оның әріптестері мектепте функционалдық сауаттылықтың әртүрлі түрлерін дамыту қажеттілігін атап өтеді, себебі бұл оқушыларға өздерінің жеке тұлғалық қасиеттерін және басқа да дағдыларын дамытуға мүмкіндік береді [5].

Зерттеушілер Н.Н. Деменева, Е.Г. Гуцу және олардың қосалқы авторлары функционалдық сауаттылықты қалыптастыру барысында бастауыш сынып оқушыларының шынайы өмірде білімдерін қолдануға арналған тапсырмаларды орындау кезінде қандай мақсаттар қоятынын анықтаудың маңызды екенін белгілейді [6].

Қазақстандық ғалымдар бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыру аспектілерін тілдік әрекетті дамыту арқылы зерттейді (Г. Жусупбекова және А. Жұмаділ, 2020), сондай-ақ оқушылардың оқу сауаттылығын қалыптастырудың әдістемелік қадамдарын мәтінмен жұмыс істеу негізінде әзірлеуге назар аударады [7], [8].

С.К. Абильдина, Ж.Е. Сарсекеева және олардың қосалқы авторлары Қазақстандағы бастауыш сынып оқушылары арасында оқу сауаттылығын арттыру үшін заманауи оқыту әдістерінің қолданылуы мен тиімділігін зерттей отырып, жылдам дамып келе жатқан білім беру ландшафтында инновациялық педагогикалық стратегияларды біріктіру оқушылардың оқу дағдыларын және жалпы сауаттылықты дамыту үшін маңызды деп көрсетеді [9].

Осылайша, қазіргі бастауыш білім беру мәнмәтінінде функционалдық сауаттылықтың мәні білімдердің өзінде емес, оқушылардың оларды практикалық жағдайларда тиімді қолдана білуі, өз білімдерінің деңгейін сыни тұрғыдан бағалай алуы және үздіксіз өзін-өзі дамытуға ұмтылуы.

Функционалдық сауаттылықтың құрамдас бөліктері зерттеушілер тарапынан білім мен практикалық әрекеттің әртүрлі бағыттарына сәйкес анықталады. TIMSS (Trends in International Mathematics and Science Study), PIRLS (Progress in International Reading Literacy Study) мониторингтері шеңберінде келесі негізгі құзыреттіліктер бағаланады: оқу сауаттылығы, математикалық сауаттылық, ғылыми-жаратылыстану сауаттылық [10], [11].

Н.Ф. Виноградова «бастауыш сынып оқушысының функционалдық сауаттылығы» түсінігінде келесі компоненттерді бөліп көрсетеді: «интегративті (коммуникативтік, оқу, ақпараттық, әлеуметтік сауаттылық) және пәндік (тілдік, әдебиеттану, математикалық, жаратылыстану ғылымдары)» [4].

Цифрлық технологиялардың дамуы мен жаһандану жағдайында цифрлық сауаттылық білім беруде маңыздырақ болуда. Цифрлық сауаттылықты оқыту үздіксіз процесс ретінде қарастырылады, ол білім беру деңгейлерінен бастап кәсіби қызметке дейінгі барлық кезеңді қамтиды және білім беру мен

еңбек қызметінде цифрлық құралдарды тиімді пайдалану дағдысы ретінде анықталады (Y. Wei, 2022) [12].

Бастауыш сынып оқушыларының цифрлық сауаттылығы олардың оқу қызметін қауіпсіз және тиімді жүзеге асыруына мүмкіндік беретін белгілі бір цифрлық білімдер мен бейіндерді меңгеруі. Цифрлық сауаттылықты дамыту тек оқу нәтижелеріне қол жеткізуге жағдай тудыратын ғана емес, сонымен қатар оқушылардың цифрлық дағдылар деңгейін арттыра алатын цифрлық білім ортасының жұмыс істеуі арқылы қамтамасыз етіледі [13].

Әрбір сауаттылық түрі жалпы функционалдық сауаттылықты қалыптастыруға ықпал етеді. Түрлі ғылыми әдебиеттерге талдау жасау негізінде бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастырудың негізгі компоненттерін бөліп көрсетуге болады (1-кесте).

1 - к е с т е

Бастауыш сынып оқушыларының функционалдық сауаттылығының интегративті компоненттері

Компонент	Мазмұны
Оқу сауаттылығы	Әр түрлі жанрдағы мәтіндерді түсіну, талдау және қолдану қабілеті
Математикалық сауаттылық	Математикалық білімдерді нақты өмірлік жағдайларда қолдану қабілеті, соның ішінде сандық талдау дағдылары мен логикалық ойлау
«Ғылыми (ғылыми-жаратылыстану) сауаттылық».	Дүниенің және қоғамның құрылымы туралы сұрақтарды түсіну қабілеті
Әлеуметтік/коммуникативтік сауаттылық	Қарым-қатынас дағдылары, топта жұмыс істей білу, әлеуметтік нормалар мен құндылықтарды түсіну
Цифрлық сауаттылық	Білім алу және өмірде цифрлық құрылғыларды пайдалану, ақпарат іздеу және интернетті қауіпсіз қолдану іскерлігі

Барлық функционалдық сауаттылық компоненттері бір-бірімен тығыз байланысты және өзара әрекеттесіп, қазіргі қоғамда бастауыш сынып оқушысының табысты оқуына және бейімделуіне негіз құрайды. Барлық компоненттер оқушыға негізделген шешімдер қабылдау, оқу және өмірлік міндеттерді шешу, өзгермелі әлемде сенімді болу қабілетін дамытады.

Материалдар мен әдістер

Бастауыш сынып оқушыларының функционалдық сауаттылығын зерттеудің маңызды аспектілерінің бірі оның қалыптасу деңгейіне диагностика жасау. Халықаралық тәжірибеде осы мақсат үшін әдістемелер кешені әзірленген, олардың арасында TIMSS, PIRLS мониторингтері орталығы орын алады. TIMSS, PIRLS-тің тәсілдері мен тапсырмалары негізінде функционалдық сауаттылықты диагностика жасау үшін ұлттық құралдар әзірленеді.

Бастауыш сынып оқушыларының функционалдық сауаттылығын бағалау білім беру процесінде маңызды рөл атқарады, себебі бұл дағдыларды меңгеру деңгейін анықтап, оқушылардың жан-жақты дамуы үшін педагогикалық стратегияларды түзетуге мүмкіндік береді. Бастауыш сынып оқушыларының функционалдық сауаттылығын бағалау кешенділік, көпдеңгейлік талаптарына сай болуы және меңгерілген білімдерді практикалық өмірлік тапсырмаларды шешуде қолдану қабілетін ескеруі керек.

Өзін-өзі бағалауды бастауыш сынып оқушыларының функционалдық сауаттылығын диагности-калау процесіне енгізу, оның саналы және мақсатты түрде қабылдануын арттырып, оқушылардың рефлексия және өзін-өзі дамыту дағдыларын жетілдіруге мүмкіндік береді. Өзін-өзі бағалау оқушыларға жетістік аймақтарын және өзін-өзі дамыту қажеттілігін түсінуге көмектеседі, бұл шынайы мақсаттар қою дағдыларын қалыптастыруға ықпал етеді. Бұл процесс оқушылардың білім алуында өздеріне деген жауапкершілікті арттырып, олардың ішкі мотивациясын қалыптастыруға көмектеседі. Оқушылар оқу барысында жетістіктерге жету үшін тек сыртқы бағалауларға тәуелді болмай, өз күш-жігері мен еңбекқорлығына негізделген ішкі ынталандыруды түсініп, өз даму процесін белсенді түрде басқаруға ұмтылады.

Зерттеудің мақсаты — бастауыш сынып оқушыларының функционалдық сауаттылық деңгейін өзін-өзі бағалау шкаласы арқылы анықтап, функционалдық сауаттылықты игерудегі негізгі кедергілердің алдын алу.

Мақсатқа жету үшін зерттеу әдістері қолданылды:

– Бастауыш сынып оқушыларының функционалдық сауаттылығының өзін-өзі бағалау шкаласының мазмұнын қалыптастыру мақсатында әдеби көздерді талдау;

– Автормен әзірленген өзін-өзі бағалау шкаласын пайдалана отырып, бастауыш сынып оқушыларының функционалдық сауаттылық деңгейін бағалау;

– Жауаптардың жиынтығы мен талдауы арқылы сандық және сапалық әдістермен нәтижелерді өңдеу, әр респонденттің шкала бойынша жауаптарын жинақтап, функционалдық сауаттылықтың әр компоненті бойынша сұрау нәтижелерінің сипаттамалық талдауын жүргізу.

Шкала қағаз нұсқасында ұсынылды. Өзін-өзі бағалауға Қарағанды қаласының «№ 66 мектеп-лицейі» КММ, «№ 16 жалпы білім беретін мектебі» КММ 4-сынып оқушылары (барлығы 42 оқушы) қатысты. Функционалдық сауаттылықтың компоненттері бойынша өзін-өзі бағалауда кешенді тәсіл қолданылды. Оқушыларға тапсырмаларды орындаудағы өздерінің сенімділік деңгейі мен қабілетін бағалау қажет болды, бұл шкала бойынша 1-ден 3-ке дейін бағаланды, мұндағы 1-ші «мен мұны істей алмаймын», 2-ші «мен мұны қиындықпен жасаймын», 3-ші «мен мұны жақсы істей аламын».

Функционалдық сауаттылық деңгейлері әр компонент бойынша оқушының бес тұжырымға бер-ген бағаларының орташа мәніне негізделіп анықталды: оқушы негізгі тапсырмаларды орындауда қиындықтарға кездесіп, мұғалімнен айтарлықтай көмек алуды қажет етеді (төмен деңгей); оқушы білімдерін шектеулі жағдайларда қолдана отырып тапсырмаларды орындайды (орташа деңгей); оқушы дағдыларды сенімді меңгеріп, тапсырмаларды өз бетімен шешуде жоғары деңгейде көрсетеді (жоғары деңгей).

Нәтижелер және олардың талдауы

Өзін-өзі бағалау нәтижелері функционалдық сауаттылық компоненттері бойынша қорытындыланды (1-сурет).
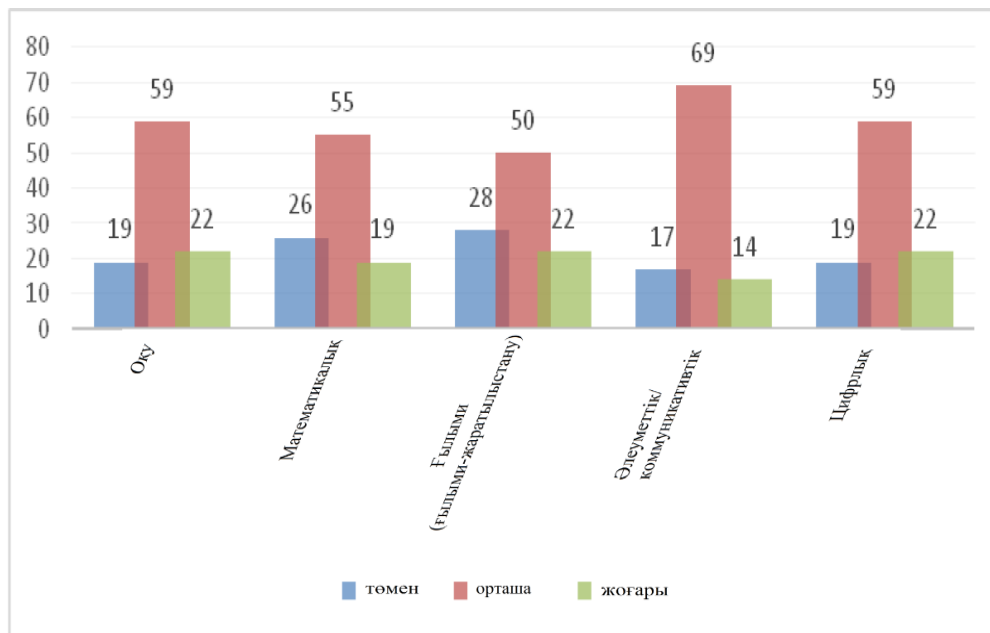
1-сурет. Функционалдық сауаттылық деңгейлері компоненттер бойынша (%)

Өзін-өзі бағалау нәтижелері келесі компоненттер бойынша жіктеледі: оқу, математикалық, ғылыми-жаратылыстану, әлеуметтік/коммуникативтік, сондай-ақ цифрлық сауаттылық. «Оқу сауаттылығы» компоненті бойынша 59 % оқушылар орташа деңгейде өздерін бағалаған, бұл көпшілігі оқу тапсырмаларын табысты орындайтынын, бірақ қиындықтар туындайтын топпен жұмыс істеу қажет екенін көрсетеді. Математикалық сауаттылық бойынша 55 % оқушылар өздерін орташа деңгейде бағалаған, бұл қанағаттанарлық нәтижелерге ұмтылуды көрсетеді, бірақ мұғалімдердің на-

зарын қажет етеді. Ғылыми-жаратылыстану және математикалық сауаттылық бойынша 28 % және 26 % оқушылар өз деңгейлерін төмен деп бағалаған. Өзін-өзі бағалауға қатысқан бастауыш сынып оқушыларының көпшілігі функционалдық сауаттылықтың барлық компоненттері бойынша орташа деңгейде (50 %-дан 69 %-ға дейін) көрсеткіштерге ие. Дегенмен, өзін-өзі бағалауы төмен топтармен, әсіресе ғылыми және әлеуметтік сауаттылық бойынша жұмыс ұйымдастыру маңызды. Осы бағыттармен кешенді жұмыс жүргізу, цифрлық сауаттылыққа назар аудару оқушылардың функционалдық сауаттылық деңгейін арттыруға көмектеседі.

Өзін-өзі бағалау нәтижелері әрі қарай даму үшін қажетті салаларды анықтауға мүмкіндік берді (2-кесте).

2-к е с т е

Шкала бойынша орташа көрсеткішке ие тұжырымдар: 1-ші «мен мұны істей алмаймын»

Компонент	Тұжырым
Оқу сауаттылығы	«Мәтінді соңына дейін оқығаннан кейін таныс емес сөздердің мағынасын түсінемін және түсіндіре аламын» «Мәтіндегі негізгі ойды таба аламын»
Математикалық сауаттылық	«Қажетті ақпаратты кестелер мен диаграммалардан таба аламын»
«Ғылыми (ғылыми-жаратылыстану) сауаттылық»	«Жануарлар мен өсімдіктердің бір-біріне және қоршаған ортаға қалай тәуелді екенін түсінемін»
Әлеуметтік/коммуникативтік сауаттылық	«Өз пікірімді басқалар түсінетіндей етіп жеткізе аламын»
Цифрлық сауаттылық	«Интернетте қиындықтарға тап болмау үшін қалай әрекет ету керектігін білемін»

Көрсетілген тұжырымдар бойынша төмен бағалар бірқатар себептермен түсіндірілуі мүмкін, яғни оқушылардың жеке ерекшеліктерімен, сондай-ақ білім беру ортасымен және оқыту тәсілдерімен байланысты болуы мүмкін. Мүмкіндік болатын себептерді қарастырайық.

«Мәтінді соңына дейін оқығаннан кейін таныс емес сөздердің мағынасын түсінемін және түсіндіре аламын» деген тұжырым шектеулі белсенді және пассивті сөздік қорды көрсетеді, бұл өз кезегінде мәтінді түсінуді қиындатады. Сонымен қатар, сөздердің мағынасын түсіндіруде тілдің жеткіліксіз деңгейде дамуы айтарлықтай кедергі келтіреді. Оқу тәжірибесінің жеткіліксіздігі немесе шектеулілігі мәнмәтінді және сөздердің мағынасын түсіну қабілетіне әсер етеді. Сондай-ақ, мәтіндермен жұмыс істеу дағдыларының болмауы аталған қиындықтардың туындау себептерінің бірі.

«Мәтіндегі негізгі ойды таба аламын» деген тұжырым бойынша төмен көрсеткіштің келесі ықтимал себептерін атап өтуге болады. Оқушылар күрделі немесе абстрактілі мәтіндерді қабылдауда қиындықтарға тап болуы мүмкін, бұл олардың қабылдау ерекшеліктері мен назардың даму деңгейіне байланысты, соның нәтижесінде негізгі ойды бөліп алу күрделене түседі. Сонымен қатар, аналитикалық ойлаудың жеткіліксіз деңгейде дамуы және ақпаратпен жұмыс істеу дағдыларының болмауы да аталған қиындықтардың туындауына ықпал етуі мүмкін.

«Қажетті ақпаратты кестелер мен диаграммалардан таба аламын» деген тұжырым бойынша төмен көрсеткіштің себептері сандық ақпаратты, графиктер мен диаграммаларды түсіну және өңдеудегі қиындықтармен байланысты, бұл математикалық сауаттылықтың төмен деңгейін көрсетеді. Сонымен қатар, сыныпта графикалық материалдармен жұмыс істеудің аз тәжірибесі визуалды деректерді қабылдау мен талдауға теріс әсер етеді. Математикалық терминологияны түсінбеу, айны-малылар арасындағы байланысты анықтаудағы қиындықтар және қорытындыларды жазу дағдыларының болмауы бастауыш сынып оқушыларының математикалық сауаттылығын төмендетіп, жалпы функционалдық сауаттылық деңгейіне әсер етеді.

«Жануарлар мен өсімдіктердің бір-біріне және қоршаған ортаға қалай тәуелді екенін түсінемін» деген тұжырым бойынша нәтиженің төмендігі экология және биология саласындағы білімнің бол-мауымен түсіндіріледі, бұл жеткіліксіз оқытудан немесе осы мәселелер бойынша білім беру

материалдарының тапшылығынан болуы мүмкін. Табиғи ғылымдарға төмен қызығушылық, практикалық тапсырмалар, эксперименттер мен бақылаулардың аздығы қоршаған процестер мен өзара байланыстарды түсінуде қиындықтар туғызады.

«Өз пікірімді басқалар түсінетіндей етіп жеткізе аламын» деген тұжырым бойынша нәтиженің төмен болу себептерін атап өтуге болады. Коммуникативтік дағдылардың жеткіліксіздігі және сөйлеуді ұйымдастырудағы қиындықтар ойды нақты әрі түсінікті түрде жеткізуге кедергі келтіреді. Сонымен қатар, төмен өзін-өзі бағалау және өзіне деген сенімсіздік өз пікірін түсіндіруде қиындықтар туындатады. Белсенді тыңдау дағдыларының болмауы және дәлелдерді келтірудегі қиындықтар да өз пікірін түсінікті жеткізуді күрделендіреді.

«Интернетте қиындықтарға тап болмау үшін қалай әрекет ету керектігін білемін» деген тұжырым бойынша төмен көрсеткіш цифрлық сауаттылық деңгейінің жеткіліксіздігін және интернеттегі қауіпсіздік негіздеріне қатысты білімнің болмауын көрсетеді. Сонымен қатар, интернеттегі өз әрекеттерін бақыламау нәтижесінде оқушылар ықтимал тәуекелдерді түсінбеуі мүмкін. Критикалық ойлау дағдыларының болмауы немесе олардың төмен деңгейде болуы интернеттегі сенімсіз ақпаратты анықтауға айтарлықтай кедергі келтіреді.

Осылайша, бастауыш сынып оқушыларының функционалдық сауаттылық деңгейіне әртүрлі факторлар әсер етеді, олар шартты түрде бірнеше топқа бөлінеді (3-кесте).

3-к е с т е

Бастауыш сынып оқушыларының функционалдық сауаттылық деңгейіне әсер ететін факторлар

Факторлар тобы	Мазмұны
Жеке	Психикалық және когнитивтік процестердің дамуы, оқу мотивациясы, өзін-өзі бағалау деңгейі, денсаулық жағдайы, темперамент ерекшеліктері
Отбасылық	Ата-аналардың білім деңгейі, ата-аналардың білім беру процесіне қатысуы, отбасының әлеуметтік-экономикалық жағдайы, отбасындағы атмосфера, демалыс сипаты, білім беру ресурстарына қолжетімділік
Педагогикалық	Оқыту сапасы, педагогтың кәсібилігі, оқыту тәсілдері, заманауи әдістер мен техноло-гияларды меңгеру, жеке тұлғаға бағытталған оқыту, мектептің материалдық-техникалық базасы, сыныптағы оқушылар саны
Әлеуметтік	Мәдени деңгейі, технологиялардың қолжетімлілігі, демалыс ұйымдастырудың әртүрлілігі

Жоғарыда қарастырылған факторлар бір-біріне әсер етіп, функционалдық сауаттылық деңгейіне ықпалын күшейтеді немесе әлсіретеді. Бұл факторларды білім беру практикасында ескеру бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыру үшін тиімді жағдайлар жасауға мүмкіндік береді.

Өзін-өзі бағалау нәтижелері мен факторларды ескере отырып, бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыру бойынша ұсыныстарды айқындаймыз:

• мәтінді талдау дағдыларын дамытуға арналған тапсырмаларды енгізу: негізгі ойды іздеу, мәнмәтінмен жұмыс, себеп-салдар байланыстарын анықтау;

• дауыстап оқу және оқығанды талқылау арқылы мәтінді түсіну дағдыларын жақсарту;

• мәтінді тиімді түсіну дағдыларын қалыптастыру бағдарламаларын енгізу;

• өмірлік жағдаяттарға байланысты оқу тапсырмаларын шешу: сатып алу, өлшеу, жоспарлау;

• оқу тапсырмаларын орындау кезінде көрнекі материалдар мен интерактивті құралдарды пай-далану;

• оқушылардың жобалық қызметке қатысуын ұйымдастыру;

• қарапайым эксперименттер мен бақылаулар ұйымдастыру;

• сыныпта топтық жұмысты қолдану;

• белсенді тыңдау, диалог жүргізу және сендіру дағдыларын дамытуға арналған жаттығулар енгізу;

• сыныпта талқылау арқылы таңдау жағдаяттарын құру;

• тұлғаралық өзара әрекеттестікті, эмоционалдық интеллектіні арттыруға арналған жаттығулар өткізу;

• сабақтарда цифрлық құрылғылар мен ресурстарды тұрақты пайдалану;

• сенімділікті тексеруге баса назар аудара отырып, интернетте ақпаратты іздеу негіздеріне үйрету;

• цифрлық редакторларда мультимедиялық контент жасауға арналған тапсырмаларды қолдану;

• цифрлық этикетті, жеке деректерді қорғау дағдыларын қалыптастыру бойынша жұмыстар жүргізу.

Қорытынды

Бастауыш сынып оқушыларының функционалдық сауаттылығы қазіргі қоғамдағы өмірге дайындықтың негізгі құрамдас бөлігі. Бастауыш мектеп жасында функционалдық сауаттылықты қалыптастыру кейінгі кезеңдерде және жалпы өмірдегі табысты оқытудың негізін қалайды. Функционалды сауатты бастауыш сынып оқушысының сипаттамалары: тұрмыстық мәселелерді тиімді шешу қабілеті, әлеуметтік жағдайларда өзара әрекеттесу және бейімделу дағдысы, білім беру ортасында және күнделікті өмірде тиімді коммуникацияны қамтамасыз ету үшін оқу, жазу бойынша негізгі дағдыларды пайдалану, фактілер мен құбылыстарды талдау және алынған білімді жаңа мәнмәтіндерде қолдану үшін пәнаралық байланыстарды интеграциялау.

Ұсынылған бағалау шкаласы бастауыш сынып оқушыларына негізгі дағдылардың даму деңгейін бағалауға, рефлексия дағдыларын дамытуға, ал педагогтерге жеке білім беру траекторияларын әзірлеуге мүмкіндік береді. Бастауыш сынып оқушыларының функционалдық сауаттылығын өзін-өзі бағалау нәтижелері бес компонент бойынша білім алушылардың көпшілігі өз дағдыларын орташа деңгейде бағалайтынын көрсетті. Орташа деңгейдің ең үлкен үлесі коммуникативтік, оқу және цифрлық сауаттылық саласында байқалады. Ғылыми және математикалық сауаттылық бойынша өзін-өзі төмен бағалайтын оқушылармен жұмыс істеуге ерекше назар аудару қажет. Сонымен қатар, зерттеу нәтижелері бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыруда назар аударуды қажет ететін бағыттарды анықтауға мүмкіндік берді, оларға мәтіндегі негізгі ойды табу, схемалық және кестелік түрде қажетті ақпаратты іздеу, қоршаған ортадағы өзара тәуелділікті түсіну, сондай-ақ олардың көзқарасын дұрыс және нақты тұжырымдау дағдылары кіреді.

Осылайша, бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыру және дамыту қазіргі білім берудің басым міндеттерінің бірі, оны шешу үшін әртүрлі тәсілдерді, әдістер мен құралдарды біріктіретін кешенді жүйені құру қажет. Төменде бастауыш сынып оқушыларының функционалдық сауаттылығын қалыптастыру процесін ұйымдастыруға арналған әдістемелік ұсыныстар тұжырымдалған, олар білім беру процесінің ұйымдастырушылық және мазмұндық аспектілерін қамтиды:

• Оқыту индивидуализациясы (оқушылардың қабілеттерін, ерекшеліктерін және қызығушылықтарын ескеру);

• Пәнаралық байланыстар (функционалдық сауаттылықтың әртүрлі компоненттерін интеграциялау);

• Позитивті білім беру ортасы (қателік жасау мүмкіндігі, тиімді кері байланыс, педагогтер мен ата-аналардың қолдауы);

• Педагогтердің біліктілігін арттыру (заманауи оқыту әдістерін, цифрлық технологияларды меңгеру);

• Оқушылардың қосымша сабақтарға, спорт секцияларына қатысуы, хобби болуы (мектеп бағдарламасына кірмейтін дағдыларды дамыту);

• Бастауыш сынып оқушыларының функционалдық сауаттылық деңгейін тұрақты бағалау (оқыту тәсілдерін түзету);

• Білім беру процесінде цифрлық технологияларды қолдану (нақты өмірлік мәселелерді шешу үшін когнитивтік, коммуникативтік, практикалық дағдыларды дамыту).

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К.Б. Копбалина, С.К. Абильдина, Б.А. Жекибаева

Исследование уровня функциональной грамотности младших школьников: шкала самооценки

Функциональная грамотность младших школьников является ключевым компонентом подготовки к жизни в современном обществе. В статье представлено исследование, направленное на оценку уровня функциональной грамотности учащихся начальной школы посредством разработки и применения шкалы самооценки. В работе изложены теоретические основы понятия функциональной грамотности, включая ее ключевые компоненты и значимость их формирования на этапе младшего школьного возраста. Читательская грамотность помогает школьникам понимать разные письменные тексты и учебные материалы. Цифровая грамотность обеспечивает доступ к ресурсам и их эффективное использование для обучения и жизни. Социальная грамотность способствует успешному сотрудничеству и применению знаний в командной работе. Ключевым аспектом в изучении функциональной грамотности является диагностика уровня ее сформированности. Авторами разработано структурированное содержание шкалы, предназначенной для самооценки компонентов функциональной грамотности младших школьников, проанализированы результаты ее апробации. Результаты позволили определить уровень функциональной грамотности младших школьников выявить области, требующие педагогического внимания и дальнейшего развития в процессе обучения. Особое внимание уделено анализу факторов, влияющих на уровень функциональной грамотности младших школьников, включая причины низких показателей. На основании полученных данных предложены педагогические рекоменда-

ции, направленные на повышение функциональной грамотности младших школьников, что делает данное исследование актуальным и полезным для педагогов и исследователей в области начального образования.

Ключевые слова: функциональная грамотность, младшие школьники, начальная школа, шкала само-оценки, читательская грамотность, математическая грамотность, цифровая грамотность, научная грамотность, социальная грамотность.

K.B. Kopbalina, S.K. Abildina, B.A. Zhekibayeva

Research on the level of functional literacy of primary school students: a self-assessment scale

Functional literacy of primary school students is a key component of preparing for life in modern society. The article presents a study devoted to assessing the level of functional literacy of younger schoolchildren through the development and application of a self-assessment scale. The paper describes in detail the theoretical foundations of the concept of functional literacy, including its key components and the importance of their formation at the stage of primary school age. Reading literacy as a component of functional literacy allows you to understand various written texts and educational materials. Digital literacy provides access to resources and their effective use for learning and living. Social literacy promotes successful collaboration and the application of knowledge in teamwork. A key aspect in the study of functional literacy is the diagnosis of the level of its formation. The authors have developed a structured content of a scale designed for self-assessment of the components of functional literacy in younger schoolchildren, and analyzed the results of its testing. The results allowed us to determine the level of functional literacy of younger schoolchildren and identify areas that require pedagogical attention and further development in the learning process. Special attention was paid to the analysis of factors affecting the level of functional literacy of younger schoolchildren, including the reasons for low rates. Based on the data obtained, pedagogical recommendations were proposed aimed at improving the functional literacy of younger schoolchildren, which makes this study relevant and useful for teachers and researchers in the field of primary education.

Keywords: functional literacy, primary school students, elementary school, self-assessment scale, reading literacy, mathematical literacy, digital literacy, scientific literacy, social literacy.

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Prevention of deviations by means of forming social behavior of students

The article deals with the peculiarities of formation of social behavior of schoolchildren, the importance of mechanisms of self-regulation of behavior. It is connected with a wide range of deviations, widespread in the modern school environment. The prevention of deviations is the main component in the formation of a stable life position of a personality. The development of schoolchildren's social skills is an actual direction of socio-pedagogical work, as the main task of global competence formation is to increase the effectiveness of social skills and functional literacy of students. The aim of the article is to study the application of social and pedagogical technologies, in particular, the creation of a constructive environment as an important tool for shaping the social behavior of school students. The authors propose a training program for 6–10-year-old children to develop their social competence; a thematic plan of lessons with specific recommendations for their organization and implementation is given. The integrated use of methodological approaches (theory of individuality development, dispositions, situational theory, behavioral approach to the definition of deviant behavior) allowed the authors to devise methods to develop adaptive abilities and ensure social competence of personality through the development of self-regulation mechanisms.

Keywords: deviations, social behavior, schoolchildren, official and informal training program, mastering strategies of social behavior, effectiveness of social skills, age features, global competencies, critical thinking.

Introduction

Kazakhstan sets a perfect example of a post-Soviet country that is finding itself in the process of transitioning to the market and democracy and building ambitious plans for its entry into the list of the most competitive countries worldwide. For a country this young and sovereign, the above issues appear especially relevant. Deviant behavior has become a daunting problem lately. More pupils are displaying abnormal behavior and thus destabilizing learning processes within school settings [1]. The spread of various forms of deviations in modern society particularly affects the space of children's relationships. In modern digital realities, it is important to differentiate between effective, inefficient and problematic smartphone use (Nawaz, 2023) is also considered as one of the forms of deviant or proactive behavior [2]. In these conditions, organization of the process of developing a new, future type of personality becomes imperative.

The existing education system in each country plays a pivotal role in reaching this goal.

The relevance of modernizing approaches to the process of personality development adequate to the modern social requirements of society appears obvious as well. It should hold a special place for the development of a schoolchild's social activity skills as the goal of preventing deviations in behavior. It seems that efficiency largely depends on the unity of pedagogical science and practice.

Psychological support and development of students' personal qualities will become the key to successful adaptation to the rapidly changing conditions of the modern world.

They are directly responsible for the preservation and development of the whole world of activity. This is the exact reason why social responsibility and outside world interaction skills are of paramount importance for behavior. Thus, the state's educational policy needs to actively update pedagogical activities to shape social behavior effectively. Rapidly advancing technologies, driving global development at an accelerated pace, further exacerbate the situation.

Kazakhstan is integrated into the world community in matters of effective social development of observing children's rights to education and social security through active application of a number of interna-

tional documents. Among them: the Universal Declaration of Human Rights, the Convention on the Rights of the Child, the Bologna Declaration, the World Declaration on the Survival, Protection and Development of Children, etc.

These and other additional documents found the footings for our research and analysis of social technologies forming relational behavior. Undoubtedly, the problems of forming a constructive social orientation of behavior deserve the closest interest, in light of which, we are talking about the future of Kazakhstan, its value-based orientations, as well as the national security, the roots of which stem from the upbringing, personality development, creative growth, and civic education of the younger generation [3].

There is a multitude of social mechanisms for monitoring and regulating different variations of both institutional and non-institutional manifestations of individual behavior.

These regulatory mechanisms consist of the following:

1. Establishment of external behavior adjusters, e.g., norms, rules, patterns, instructions, codes, etc.;
2. Behavior adjustment;
3. Behavior assessment;
4. Establishment of sanctions.

An individual's environmental activity is largely determined by the following spectrum of social-factor influence: peer community, current agents of socialization, and real institutional influence of society [4; 5].

Concurrently, a child in our society first encounters a large-scale "socially sanctioned" deviation from the norm right at the beginning of schooling, being forced to integrate themselves into the official and additional, unofficial (developed for more effective, from the teacher's point of view, development of cognitive skills and abilities) curricula. Undoubtedly, the official curriculum existing on the basis of relevant model rules and standards aims to organize educational and upbringing process through introduction of modern technologies and is regulated by specific research results in this area [6]. Now, the additional, unofficial curriculum reflecting a unique reaction to real conditions, including for the implementation of official curriculum's objectives, creates opportunities for a gradual introduction of the child, now positioned as a subject of school education, into the world of knowledge and social relations through development of social skills, formation of a personal model of behavior, and understanding of the nature of social requirements. Children are naturally spontaneous in their perception of the very essence of the unofficial curriculum due to its relative obligatory nature. It is not about the need to subordinate the teacher to a strictly formalized approach to education, but rather finding a connection between the standard and creative variability in addressing the issues of developing a socially responsible personality as a whole. In these circumstances, special importance belongs, on the one hand, to providing the teacher with greater independence in determining the methods of integrating new things into the content of education and upbringing, and on the other hand, to creating conditions that best promote independent personal development of the student's adaptive abilities and their social competence.

From the first days of schooling, the child begins to realize how all forms of their social activity receive a specific, fairly strict social assessment. We believe that a child's immersion in the environment of new relationships and assessments depends on the creation of appropriate conditions within the school's educational space. This process requires the presence of open social interactions, fostering the student's understanding of personal social responsibility, the fundamental nature of social norms and expectations, and the role of these norms in mediating the relationship between the child as an individual and society. Openness means a close connection between the educational process and the real conditions of social interaction. Specific social norms play a pivotal role in developing the strategy of the individual's social behavior.

A child who knows the rules is not always adapted to school life. We assert that knowing the norms alone does not contribute to, but rather negatively affects, adaptation to the school space. Realizing and understanding this is of utmost importance.

However, the formation of social skills in regulating behavior helps him adapt as quickly as possible. Social skills and behavior regulation are honed through direct interactions within a comprehensive educational framework and structured activities.

Social competence requires a specific result in real social skills and abilities through the practice of active social interaction.

We believe that such practice must be specially organized in a children's environment and will help develop individual social skills and abilities, including the following:

1. A clear articulation of an issue. Addressing it is a prerequisite for everyone involved.
2. Circumstantiation of the "staff" structure, breakdown of roles and responsibilities.

3. Group decision making.

4. Player interaction system.

5. Articulation of the shared objective.

6. Occurrence or creation of conflicts, player viewpoint and interest differences.

7. Creation and execution of the procedure for addressing issues.

8. Identifying methods to track game advancement and evaluate effectiveness of problem-solving measures.

9. Maintaining a positive attitude at all times during game.

10. A flexible incremental scoring system for all player activities.

It is assumed that students will learn to prevent and resolve conflicts with the environment through their most complete analysis via practice of game interaction. We insist on this approach, since game activity contributes to creation of conditions for informal relationships and, accordingly, allows the child to independently realize and determine hierarchy of values and social guidelines by themselves.

The following is an illustration of such a lesson.

Game title: "The Path of Difficulties."

This game contributes to the development of social integration skills through teaching the understanding of the uniqueness of each community member's personal interests, the search for common ground. Among the game's main objectives in the context of developing socially active behavior, we can highlight the following: assistance in constructively resolving a socially difficult situation, teaching the understanding of the essence of constructive / non-constructive behavior, and the features of its manifestation at both personal and social levels.

The lesson will progress in the following manner:

1. It is assumed that students will be able to actively search for answers to the following questions in a variable manner

- Can you remember any challenging situations you've encountered?

- What makes you categorize these situations as difficult?

- How did you respond to these challenging times?

- What was the outcome of these situations?

2. Common scenarios are identified, showcasing both constructive and non-constructive behaviors. Students will illustrate these scenarios with symbols or drawings on a sheet, independently building their own "path of difficulties."

Concurrently, the student must also independently find various options for solving these difficulties

The key objective of the activity is to generate a wide variety of responses. An adult or teacher will note all behaviors on the board.

3. The group will then engage in a discussion, examining the potential consequences of the behaviors shared and addressing the question: "What outcomes can result from such a set of actions?"

4. As a result, the student, critically comprehending specific situations, understands the essence of constructive behavior and possibilities of its integration into the structure of their social activity.

Consequently, it can be argued that development of social self-regulation can be realized with the help of specially organized game-based educational programs that provide for active group interaction

It is important that curricula be built with consideration of the principles of respect, immediate response, openness, "Stop" (when each participant has the right to either speak out or remain silent), etc.

Undoubtedly, training of personnel is of particular importance for the implementation of such curricula. We believe that professionalization of social educators as specialists capable of promoting development of social skills and pro-social abilities needs special attention. Analysis of the content of curricula for the Karaganda Buketov University social educators gives grounds to assert that special course "Innovative Technologies for Organizing the Educational Process in Schools" can be especially distinguished in the content of the entire complex of academic disciplines ensuring the process of professional training. Such attention is dictated by its specificity in relation to familiarizing university students with the possibility of developing professional skills in integrating innovative technologies into the content of professional activity itself.

Methods and Materials

In today's environment, despite the rather great attention of the scientific and pedagogical community and the presence of certain results in this area, researching the issues of developing social skills in schoolchildren, forming their skills of pro-social activity and socially adequate behavior still remains relevant.

Indicatively, the analysis shows how the issues of organizing psychological and pedagogical support for school students in adaptation to the educational space as an environment for developing social behavior skills, social activity of the individual and finding ways to prevent behavioral deviations are still important.

We used historical and chronological methods to research constructive behavior teaching technologies. The list of utilized methods goes on and includes historical and logical analysis, comparative analysis, systematization, generalization, synthesis, and descriptive methods.

B.G. Ananyev conducted pioneer research in social behavior and formulated an individuality development theory (Personality. Subject of the activity. Individuality) [7]. He explored an array of differences between higher animals and humans. Social behavior is influenced by a multitude of features, including:

- Anatomical and morphological differences,
- Mental organization differences,
- Cultivating global connectivity (as subjects).

Personality development borrows from personal attributes, i.e., psychology, physiology, and intellect. Social behavior, identity, and self-perception in the world stem from the entire set of these properties.

Another theory that we will study is disposition (Allport, F. Znanetsky and W. Thomas), reviewed in the Anthology of American Sociology of the 20th Century [8].

Based on a special view of the concept of the rule of law, the disposition is such a part of it that, based on specific rules, reflects the entire set of socially approved methods and forms of behavior. From the point of view of the problem in question, this theory allows us to realize possibilities of integrating law, understanding its essence in the context of the child's acceptance of a social norm.

No less relevant is Situational theory (P. Hersey, K.H. Blanchard), which outlines not only an insight into the essence of social behavior of an individual, but also the nature of leadership [9].

We feel important to note that socially effective leadership is possible based on development of such qualities as openness to social communication, self-confidence, readiness to work in a team through awareness of joint development goals, prosocial orientation, and responsibility.

Social behavior is studied not only on the basis of understanding and defining the essence of the norm, but also by studying the specifics of behavior in a state of deviation from it. The above-mentioned problem has actualized the appeal to identifying causes and consequences of asociality. An attempt to determine it is reflected in sufficient detail in the behavioral approach to determining the features of stating deviant behavior of an individual and a social group [10]. The key idea is that social and asocial behavior of an individual and a social group is the result of adaptation to the environment and, concurrently, the process of adaptation to its constant dynamic changes. The behavior patterns are seriously influenced by the hierarchy of needs and values that a person is guided by. Under these conditions, an individual's social performance, repeatability of the personally positive result of social interaction entails a certain skill, social learning determining an individual's behavior pattern.

Figure 1 shows two ideas Gordon Allport's theory rests upon.

At the core any form of behavior is manifested either at the individual or group level. There is always a focus on adaptation to environmental changes.

Individuals prove out and apply every behavioral attribute in their book to achieve their goals.

People have a wide range of predispositions to react in a certain way in different situations (that is, personality traits). This means that people demonstrate a certain constancy in their actions, thoughts and emotions, regardless of the passage of time, events and life experience.
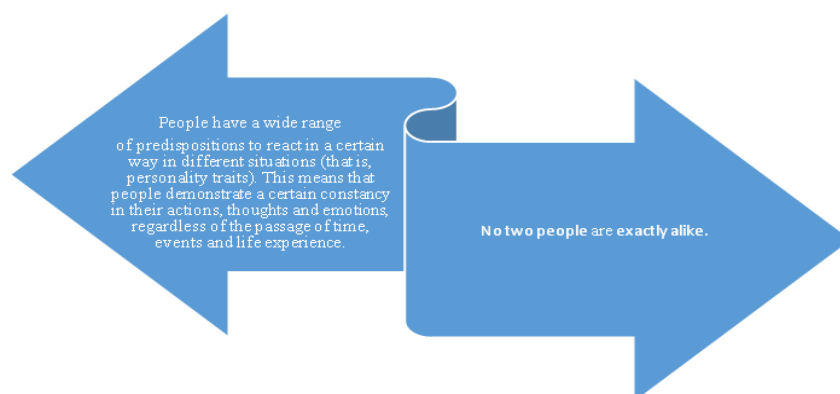
No two people are exactly alike.

Figure 1. Gordon Allport's Idea

R. Smit notes in his book several psychological and pedagogical studies that prove that the six- to eight-year-old age is sensitive due to the emergence and formation of such characteristics as the formation of "Self-image," "Self-concept" (R. Burns, I.S. Kohn, etc.); worldview (T. Shibutani); deviation of reflexive thinking (V.V. Davydov, G.A. Zuckerman) [11]. It is important to remember how social skills and abilities are developed through the child's personal experience in the process of intentionally organized activities that contribute to the development of competencies required for social interacting (team, family, environment). Since this is how affiliative impulses form, i.e., the desire for psychological community with a group, which, in adolescence, is reinforced by conformist pressure from peers as motivating factors of social behavior. At school age, the active social interaction experience is important for the development of social competence of behavior. Consequently, for the next path to developing social competence, we consider it important to highlight specially organized interaction between students to avoid feelings of isolation, anxiety, worry, self-doubt, and mood deprivation. Social skills, such as establishing contact, joint activities, distribution of responsibilities, conflict resolution, listening skills, asking for help, self-regulation, etc. are developed and mastered in the process of joint activities. Activity interaction (group work, prosocial activities) should hold a major place both in the academic and extracurricular time of students. The effective development of social skills during organization, e.g., of prosocial work requires clear algorithms for completing tasks, discussing goals and rules of interaction, and practicing self-consciousness. Interaction can be focused on educational situations, however, upon completion of the task, it is important not only to evaluate its implementation, but also to discuss if the norms and rules of working in the group were observed. This approach promotes conscious implementation of established rules.

Children aged eight to ten develop their life goals and prospects in their self-consciousness (E. Erickson), the choice of selected motives (Y.L. Kolominsky), the formation of the social position "I am in the society of a child" (D.I. Feldstein), the formation of social maturity (A.A. Gudzovskaya), mastering social experience (K. Fopel) [12, 13, 14, 15, 16].

At the age of six to ten, children begin to show chaos in their mental processes while their behavior becomes disordered, developing a desire for recognition and to succeed in socially important activities [17].

In primary school (ages 6–10), students exhibit impulsiveness, act thoughtlessly, fail to weigh strengths and weaknesses, are very frank and spontaneous in expressing their emotions and feelings, which is due to the weakness of the mechanisms of volitional behavior regulation. However, the desire for recognition and success in learning still play an important role, therefore, the teacher must provide an opportunity to compare the starting data with the changes that occurred under the influence of compensatory and rehabilitation measures. Vygotsky's theory confirms the need for developmental learning, especially for the students that are less gifted, pedagogically neglected, lagging behind the pace of learning and mental development because their progress in the zone of proximal development is tinted with unevenness and uncertainty. Case in point, students with a predominance of visual-effective thinking fell into the category with unclaimed abilities, although it is precisely them who can easily develop flexible skills and show a tendency to communicate (aesthetic, environmental education, assignments in art lessons). Students with weak behavior regulation skills are neurotic, hypochondriacal (as a mental defense), which causes them to be withdrawn, distrustful, and isolated. Overexertion in improperly structured educational activities leads to underdevelopment of social needs and does not foster an interest in learning.

Examining the relationship dynamics between the child and their social environment appears to be one of major features of contemporary theoretical models of child development. A person's capacity to put the needs and priorities of a group first is basically how social regulation of behavior manifests itself. It is not inherent. L.S. Vygotsky has listed social factors directing and assisting children in adapting their own behavior, thus forcing development of normative regulation of behavior.

Figure 2 shows components constructing interaction [18].

The correct teachers' educational tactics reasonably direct their social behavior to achieve immediate goals in ways that provide an opportunity for social adaptation and communication [16].

The existing scientific literature provides a wealth of studies on childrearing; however, emerging social and educational trends have revitalized the topic, leading to additional investigations aimed at identifying new practical solutions, particularly ones concerning elementary school-aged children.

During the primary education phase, it is beneficial to focus on enhancing younger students' experiences in public relations and their social skills as part of their social development. The lack of solid knowledge of the method and conditions that facilitate or, conversely, complicate the beginning of the action is a real obstacle to the realization of one's own values and life positions [11].
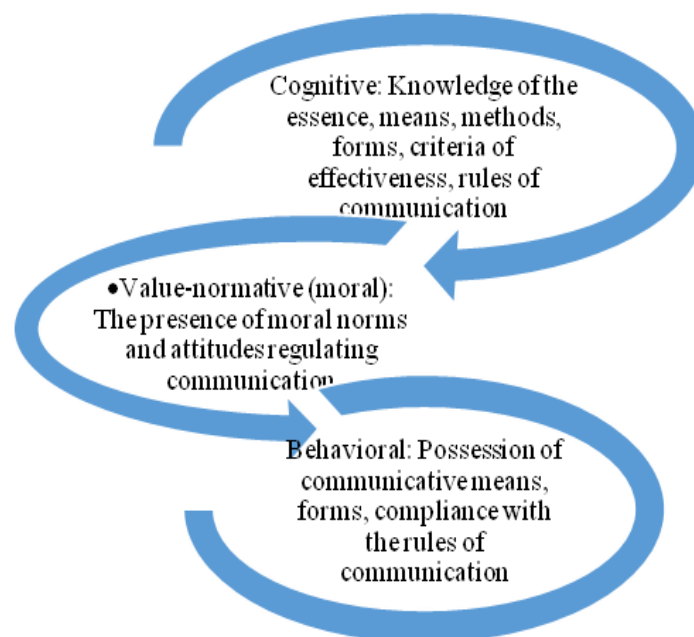
Figure 2. Interaction Elements

The core perspective supporting the integration of moral and spiritual education with other school subjects, especially "Global Competence," is rooted in a comprehensive understanding of humanity and the world. This perspective acknowledges that humans are not simply biological and social beings but also possess a profound spiritual essence manifesting in the world through life, movement, growth, order, and harmony, and perceived in human consciousness as a timeless universal value.

With this foundation established, we then proceeded to examine the pedagogical principles (Fig. 3).

It is essential to recognize that methods for planning, organizing, and conducting classes designed to cultivate social behavior cannot be standardized. These methods differ according to the educational process context, the social and pedagogical strategies employed, the educational content, and, most critically, the teacher's qualities and expertise. Teacher competence increases with their ability to effectively utilize a range of techniques and training resources. Managing the process of social behavior development involves both studying and teaching, requiring a variety of verbal and non-verbal communication methods and strategies. These approaches help guide, direct, and regulate students during their educational activities, to foster their capacity to acquire vital collaborative learning skills with both the teacher and their peers [19].

Karaganda city's Secondary Schools No. 66 and 86 served as the sites of active research. Secondary School No. 86 students show a pronounced talent in artistic activity (the ability to draw and music), and Secondary School No. 66 students show a tendency mainly in cognitive activity (mathematical ability). Selection of these two educational institutions is dictated by the need to identify the features of shaping social behavioral skills of the student's personality with an applied orientation in a comparative aspect of the student's personality with an artistic orientation.

To identify specific traits of students' social behavior, we have prepared a special set of questionnaires and six tests. In March 2023, we conducted a comprehensive survey of students on the topic "Direction of Thinking," "Development of Willpower." In total, 124 peoples took part in the survey: 62 people from Secondary School No. 86 and 62 people from Secondary School No. 66.

Figure 3. Structure of the Subject "Global Competencies"

Considering the unique traits of each student can aid in their social development and decrease conflicts by fostering social behavior skills. When individuals establish long-term goals that are realistically attainable, it is essential to break down their activities into manageable parts, develop a corresponding action plan, and address tasks systematically.

Methods of self-education: self-control. Table 1 shows the main stages of shaping social behavior.

T a b l e 1

The main stages of the formation of social behavior

Main stages			
Motive	**Struggle of motives**	**Selection of actions**	**Implementation**
- Emergence of an invitation or establishment of an objective	- Discussion phase or identifying motivations (selecting tools, strategies, and techniques to achieve the goal)	- Decision-making (determining actions to accomplish the goal)	- Implementation of the decision made

The results have been processed after testing and presented in Table 2 and Figure 4.

T a b l e 2

Students' Social Behavior's Basic Skills

Educational Institution Basic Skills of Social Behavior	Basic Skills of Social Behavior							
	Courage	**Autonomy**	**Discipline**	**Perseverance**	**Determination**	**Restraint**	**Purposefulness**	**Initiative**
No. 86 HS	26 %	21 %	35 %	6 %	2 %	6 %	2 %	2 %
No. 66 HS	8 %	27 %	23 %	13 %	8 %	3 %	2 %	16 %
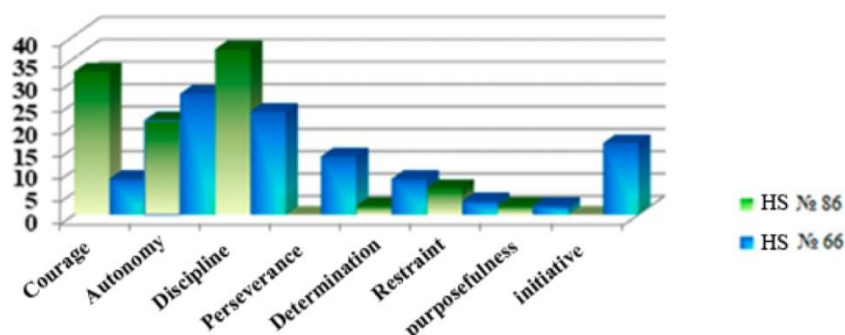
Figure 4. Basic Skills of Students' Social Behavior

Processing the results will consistently require consideration of the proportion of a certain expression of willpower. As practice shows, there are practically no pure manifestations of social behavior. If the percentage of any quality of will is 40 % or more, this quality prevails. If it is 30–39 % the quality of will is obvious, 20–29 % of the quality is sufficiently expressed and should be taken into account, 20 % is weak, 10 % is neglectable.

As a result of our research, we were able to dissect social behavior into the following fundamental skills:

1. The ability to show courage (correctly meet another person, introduce yourself);
2. The ability to be disciplined (be conscious in any situation);
3. The ability to be persistent (control your voice; correct apologies);
4. The ability to persevere;
5. The ability to demonstrate patience (exhibit restraint, tact, and politeness);
6. The ability to respond competently to criticism.

The next example of the effective influence of self-knowledge means on shaping social behavior of a student's personality was an indicator of a decrease in conflict among students in the period from 2021 to 2023 after conducting classes "Global competencies" among peoples. We determined it through the study (modification) of self-esteem according to the Dembo-Rubinstein method. The results were processed after testing. The data obtained are presented in Table 3, as well as shown in Figure 5.

T a b l e 3

Trend of Minimizing Conflicts Among Students at Secondary School No. 86

School No. 86. Number of Students Involved in Conflicts	Academic Year 2018-2019	Academic Year 2019-2020	Academic Year 2020-2021	Academic Year 2021-2022	Academic Year 2022-2023
	11	7	6	3	0
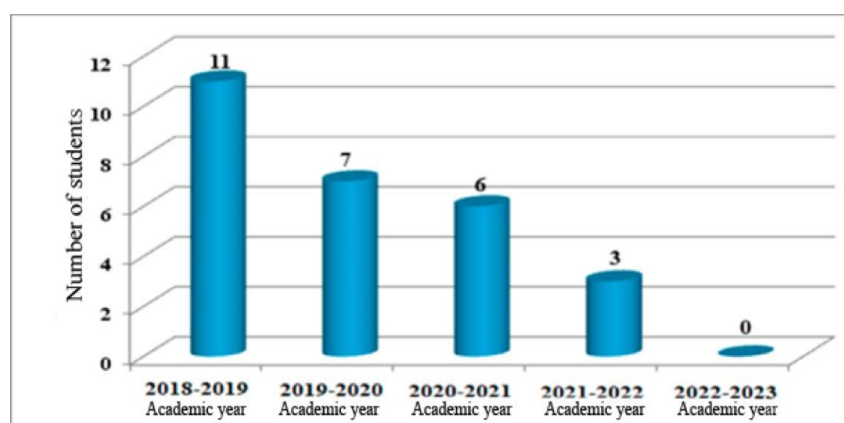
Figure 5. Trends in Reducing Conflicts Among Secondary School No. 86 Students

Results and Discussion

The subject "Global competencies" has become popular among students.

Self-education methods for social behavior can be implemented under specific pedagogical conditions.

The majority of grade 1–4 students (74.3 %) show a high level of knowledge on social behavior skills among students in the experimental groups, 14 % show a low level of knowledge, and only 11.7 % of students show a satisfactory level of social behavior's importance.

The algorithm for teaching social behavior skills in the program is based on an innovative technology of empirical learning — the Kolb model (Experimental Learning Model) that presents training as a cycle spiraling upward and consisting of four stages: direct experience, reflective observation, abstractive excogitation, and active experimentation.

Kolb's model views experience as a result of thinking and reflection. The greater the deviations along this path, the more attention the student's efforts require to create an abstract model, which they then confirm in practical reality.

The cycle shows how the student extracts personal, thoughtful experience in a specific situation. This experience is lived directly through mental observations (reflection). The result of reflection determines how they learned to use knowledge (intellectual sphere), the ability to build relationships (social sphere), and the skills of communicating with beauty (aesthetic sphere) [20].

Students verify these conclusions in actions, actively experimenting and using them to create a new experience or a new vision of the original concrete experience. Honey P. and Mumford A. modified the Flask model. The authors argue that having determined the dominant teaching style, each student can be attributed to one or another type (Fig. 2), conditionally titled "An Activist" (active-concrete type), "A Thinker" (reflexively concrete type), "A Theorist" (reflexively abstract type), and "A Pragmatist" (active-abstract type) [21].

Managing the acquisition of social behavior skills is a process consisting of the following sequentially related stages:

1. Cognitive (cognitive and motivational). The importance of student awareness of their rights and responsibilities is generally recognized as a possibility and necessity of observing the rules of behavior and interacting based on biological, psychological, and social essence of a person (from the disciplinary responsibility's standpoint, the criteria for classifying an act as common are not assessed as clearly as in society but are associated with the personal attitude of the teacher and organization of education).

2. Activity. Assignment of norms and methods of constructive student's interaction with peers.

3. Reflexive-evaluative. Understanding the significance of interaction in constructive ways and the ability to carry out reflexive activity (to contemplate and evaluate their actions, behavior, emotions, and mental well-being, to gauge the depth of their knowledge, and to acknowledge personal development).

4. Behavioral. Understanding different methods of interaction and applying past experiences in a variety of contexts and circumstances. Figure 6 illustrates collaboration of stages involved in the development of social behavior.

Specific experience
(Acquiring/possessing experience)

Engaging in active experimentation
(Planning/testing the knowledge obtained)

Reflecting on a new experience
(Evaluating/contemplating the experience)

Abstract conceptualization

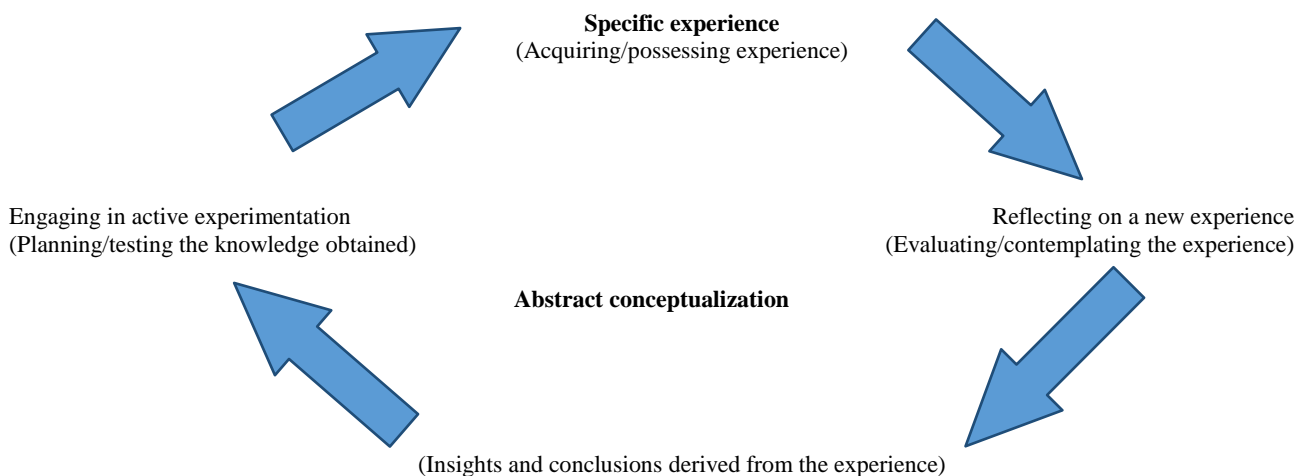(Insights and conclusions derived from the experience)

Figure 6. Phases of the Process for Developing Social Behavior According to the Flask Model

The joint efforts of scientists and experts enabled adaptation of the proposed model for home education, considering the methodological, didactic, psychological, and pedagogical principles underlying this approach, enriching it with new innovative methods, which was later called "Technology aimed at enhancing social skills by fostering critical thinking development." Currently, this technique has been adapted to modern conditions and is included in the teacher retraining program by the Centers of Pedagogical Excellence of Kazakhstan. The spread of various forms of deviant behavior is a concern for teachers, parents, and the public. For this reason, in the 2024-2025 academic year, 50 schools of the Republic of Kazakhstan test the anti-bullying program Dosbol LIKE [22]. More than 70 thousand schoolchildren and over 5 thousand teachers have taken part. In order to successfully implement the program, instructional and methodological seminars have been held for the participants from among the teachers. On September 12, 2024, the KiVa anti-bullying program was launched in 110 schools in Kazakhstan [23; 33]. Accordingly, one of the most important tasks of society is to find methods to eradicate negative forms of deviations at school, "to ensure targeted work on social rehabilitation of children with deviant behavior" [24], as well as to improve teacher competencies in working with such children in the process of their socialization.

Teachers of Karaganda Buketov University also demonstrate interesting experience in using innovative strategies and methods in the classroom, for example, in professional self-determination [22]. Following the completion of the determining phase of the pedagogical experiment, it was found that the levels of social behavior skill development in both classes differ significantly, ranging from high to low. Since the 2022 academic year, a new course "Global competence" has been introduced, starting from grades 5–9. Nonetheless, primary school do not offer this program, so we have developed and implemented a program for shaping social behavior skills in peoples through self-knowledge. This course has successfully highlighted the importance of developing individual social behavior skills.

Subsequently, conducting the formative stage of the pedagogical experiment, the level of shaping social behavior skills in the children of the experimental group increased significantly, and remained practically unchanged in the children of the control group. This made it possible to conclude that the complex of lessons developed by us leads to the formation of social behavior skills in peoples.

Conclusion

The tendencies of the modern Kazakh society to update approaches to the organization of the teaching and educational process are closely related to the search for effective technologies for the development of a person striving in his daily interaction with the environment to harmonize personal and social ties. This is especially important in the process of prevention of deviations in the modern school environment. Formation of social behavior allows in many respects to provide effective prevention of various deviations in relationships of school students. Accordingly, most theorists and experts understand this process to imply a fairly wide space for self-realization and self-expression of an individual in their development rooted in a deliberate awareness of the essence of personal freedom. This refers to a process that facilitates the broad expression of individual potential through a meaningful engagement with the social environment, recognizing its vastness and diversity.

Furthermore, it is crucial for the child to take the initiative in finding ways to integrate into society independently. The awareness of the self-realization development, according to L.I. Bozhovich, A.K. Dusavitsky, D.I. Feldstein, V.I. Slobodchikov, I.V. Dubrovin, largely manifests itself in the younger school age as a special stage in the interiorization of social norms and values. The proof of this position is based on the intensive development of the child's arbitrariness and reflection of his behavior; independent understanding of the social norm, the reasons for the presence/absence of social recognition; development of the need to master new social roles. Analysis of experiment results shows the ability of students in both classes to predict problematic moments in interaction. They use a wide range of skills, have difficulties in matters of interaction, and these data vary significantly. The distinctiveness of age is heightened by a child's willingness to learn various forms of social interaction.

Implementing the proposed program in primary schools can effectively address anxiety at an early stage of development by utilizing specific adaptation strategies. The program also promotes familiarization with a number of effective behavioral strategies that minimize desadaptative processes; the formation of social skills, achievement motives. This course is not provided for elementary school, for which reason we have developed and implemented a program for them to develop social behavior skills while actively using elements of self-knowledge, self-regulation of behavior, development of critical thinking, etc. Undoubtedly, its effectiveness in its practical application requires an individual approach in each specific situation.

This paper presents an analysis of traditional and innovative technological approaches to the process of forming social behavior skills. Therefore, schematization of the process allows us to see how students need a team for self-affirmation as a citizen of society, a classmate in a group, or a family member [25]. The obstacles to introduction of innovative technologies into social worker's modern professional activities have been given a detailed description.

Using effective strategies that will help improve discipline in the classroom, reduce the level of conflicts, and increase the overall level of self-regulation of behavior. The proposed program's implementation in elementary education could contribute to the reduction of anxiety, mood disorders, and self-doubt.

Acknowledgements

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Әлеуметтік мінез-құлықты қалыптастыру құралдарымен оқушылардың ауытқуларының алдын алу

Мақалада оқушылардың әлеуметтік мінез-құлқын қалыптастыру ерекшеліктері, мінез-құлықты өзін-өзі реттеу тетіктерінің маңызы қарастырылған. Бұл қазіргі мектеп жағдайында кең таралған ауытқулардың кең ауқымына байланысты. Ауытқулардың алдын алу — тұлғаның тұрақты өмірлік ұстанымын қалыптастырудың негізгі құрамдас бөлігі. Оқушылардың әлеуметтік дағдыларын дамыту әлеуметтік-педагогикалық жұмыстың өзекті бағытын білдіреді, өйткені жаһандық құзыреттілікті қалыптастырудың басты міндеті — оқушылардың әлеуметтік дағдылары мен функционалдық сауаттылығының тиімділігін арттыру. Мақаланың мақсаты — әлеуметтік-педагогикалық технологияларды қолдануды зерттеу, атап айтқанда, мектеп оқушыларының әлеуметтік мінез-құлқын қалыптастырудың маңызды құралы ретінде сындарлы орта құру. Авторлар 6-10 жастағы балаларға олардың әлеуметтік құзыреттілігін дамыту бойынша оқыту бағдарламасын ұсынған; сабақтардың тақырыптық жоспары оларды ұйымдастыру мен өткізудің нақты ұсыныстарымен бірге берілген. Әдістемелік тәсілдерді кешенді қолдану (даралықты дамыту теориясы, диспозиция, Т. Хилтонның ситуациялық теориясы, девиантты мінез-құлықты анықтауға мінез-құлық тәсілі) авторларға жүргізілген зерттеу негізінде мінез-құлықты өзін-өзі реттеу тетіктерін дамыту арқылы бейімделу қабілеттерін дамыту және жеке тұлғаның әлеуметтік құзыреттілігін қамтамасыз ету жолдарын әзірлеуге мүмкіндік берді.

Кілт сөздер: ауытқулар, әлеуметтік мінез-құлық, мектеп оқушылары, ресми және бейресми оқу бағдарламасы, әлеуметтік мінез-құлық стратегияларын игеру, әлеуметтік дағдылардың тиімділігі, жас ерекшеліктері, жаһандық құзыреттілік, сыни ойлау.

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Предупреждение девиаций средствами формирования социального поведения школьников

В статье рассмотрены особенности формирования социального поведения школьников, значение механизмов саморегуляции поведения. Это связано с широким спектром девиаций, распространенных в современной школьной среде. Предупреждение отклоняющегося поведения выступает основным компонентом в формировании устойчивой жизненной позиции личности. Развитие социальных навыков школьников является актуальным направлением социально-педагогической работы, так как главной задачей формирования глобальных компетенций является повышение эффективности социальных умений и функциональной грамотности учащихся. Целью статьи является изучение применения социально-педагогических технологий, в частности — создания конструктивной среды как важного инст-

румента формирования социального поведения обучающихся школ. Авторы предлагают обучающую программу для детей от 6 до 10 лет по развитию их социальной компетентности, приводится тематический план занятий с конкретными рекомендациями их организации и проведения. Комплексное использование методологических подходов (теория развития индивидуальности, диспозиции, ситуационная теория Т. Хилтона, поведенческий подход к определению девиантного поведения) позволило авторам на основе проведенного исследования разработать пути развития адаптивных способностей и обеспечения социальной компетентности личности через развитие механизмов саморегуляции поведения.

Ключевые слова: девиации, социальное поведение, школьники, официальная и неофициальная программа обучения, овладение стратегиями социального поведения, эффективность социальных умений, возрастные особенности, глобальные компетенции, критическое мышление.

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Формирование педагогических компетенций у будущих учителей начальных классов средствами дистанционного обучения

Статья посвящена проблеме формирования педагогических компетенций у будущих учителей начальных классов средствами дистанционного обучения. В статье обоснована актуальность повышения качества подготовки педагогов в условиях цифровизации. Повышение требований к качеству начального образования актуализирует вопрос компетентности учителей начальных классов. Основное содержание статьи связано, во-первых, с возможностями дистанционного обучения в формировании педагогических компетенций у будущих учителей начальных классов; во-вторых, с материалами мониторинга уровня сформированности педагогических компетенций у будущих учителей начальных классов путем самооценки. Авторами на основе анализа работ ученых, синтеза учебно-методических идей, обобщения собственного педагогического опыта и метода самооценки студентов получен ответ на вопрос: «Обеспечивается ли формирование педагогических компетенций у будущих учителей начальных классов средствами дистанционного обучения?». В статье сформулированы педагогические компетенции будущих учителей начальных классов в соответствии с направлениями педагогической деятельности: целеполагание, планирование, методика, организация, рефлексия, коммуникация, саморазвитие. Представлен анализ результатов проведенной самооценки педагогических компетенций будущих учителей начальных классов. Большинство педагогических компетенций, сформированных на высоком и среднем уровне у обучающихся с применением дистанционных образовательных технологий, связаны с теоретическими знаниями, планированием будущей деятельности, постановкой целей, организацией по улучшению собственной продуктивности. Результаты самооценки педагогических компетенций будущих учителей начальных классов указывают на необходимость создания определенных условий для их формирования средствами дистанционного обучения.

Ключевые слова: компетентностный подход, компетенции, педагогические компетенции, дистанционное обучение, профессиональная подготовка, студенты, учитель начальных классов.

Введение

В современном обществе образование остается одним из ключевых приоритетов общества и государства. Это проявляется в частых реформах, проводимых с целью адаптации системы образования к мировой социально-экономической ситуации. Реформированию подверглись все уровни образования, в том числе начальное образование. Повышение требований к качеству начального образования поднимает актуальный вопрос компетентности учителей начальных классов.

Как отмечает Т.А. Хорошавина «трансформация системы образования предъявляет достаточно высокие требования к педагогической компетенции профессионала, определяет его деятельность в условиях перестройки информационного пространства. По мере усложнения задач совершенствуется профессиональная компетентность педагога» [1].

Исследователи А.В. Нуркамытова и А. Ислам основную идею компетентностного подхода видят в том, что «все полученные знания должны применяться на практике. Все знания теоретического характера должны стать инструментом для решения практических задач» [2].

Одним из перспективных способов реализации образовательных программ в условиях цифровизации является внедрение в учебный процесс дистанционных образовательных технологий. Поэтому формирование компетенций будущих учителей начальных классов в условиях образовательной среды организации образования необходимо обеспечивать средствами дистанционного обучения.

Теоретический анализ данной проблемы говорит о недостаточной изученности вопросов дидактики и методологии дистанционной подготовки будущих учителей начальных классов. Для этого не-

обходимо раскрыть потенциал и недостатки дистанционного обучения, а также профессиональные требования к деятельности учителя начальных классов.

Ж. Капашева, Н. Мирза и др. в ходе проведения исследования акцентируют внимание на необходимости взаимодействия со студентами инновационными способами, направленными на развитие компетенций современных педагогов и повышение их квалификации [3].

На наш взгляд, в ходе дистанционного обучения реализуются общеизвестные закономерности обучения, принципы дидактики, компоненты теории обучения.

Д.М. Джусубалиева, А.К. Мынбаева, А.Е. Мамбетказиев считают, что «построение дистанционного обучения имеет специфическую дидактическую систему. Поскольку система дидактическая, то к ней предъявляются те же требования, что и для традиционного обучения, но с некоторыми поправками» [4].

В ходе анализа исследовательских работ ученых и педагогического опыта отмечается, что дистанционное обучение не уступает в качестве традиционным формам обучения.

Ж. Гарданова и ее коллеги по результатам своего исследования отмечают «наличие не сбалансированной системы преподавания в условиях дистанционного обучения в вузе, которая обеспечивает лишь средний уровень сформированности компетенций студентов» [5].

Теоретический анализ и опыт преподавания позволяет отметить преимущества дистанционного обучения в системе профессиональной подготовки. Поскольку дистанционные средства обучения обеспечивают непрерывность образования. Возможность удаленного обучения говорит о доступности дистанционного обучения и его пользе в рамках инклюзивного образования. Последовательность обучения в рамках определенного промежутка времени обеспечивает демократичность дистанционного образования. В рамках дистанционного обучения обучающийся вовлекается в общение синхронно и асинхронно, что говорит о гибкости технологии. Кроме того, средства дистанционного обучения позволяют обучать массово, выходя за рамки привычного количественного состава групп обучающихся.

S-M. Korte и его коллеги, исследуя компетенции педагогов в области дистанционного обучения подчеркивают, что оно «оказало положительное влияние как на навыки применения ИКТ преподавателей и студентов, так и на результаты обучения некоторых студентов» [6].

Несмотря на достаточное количество положительных сторон, имеются и трудности в реализации дистанционного обучения. Ж. Гарданова и другие ученые отмечают ряд факторов, снижающих качество профессиональной подготовки. Отсутствие у преподавателей необходимого опыта дистанционной работы; проблемы с установлением контакта со студентами; недостаточно серьезное восприятие студентами этой формы обучения; значительная степень расслабления студентов дома; невозможность получить оперативные ответы на уточняющие вопросы в ходе урока; отсутствие командного общения [5].

Наш собственный опыт преподавания позволяет добавить к недостаткам дистанционной профессиональной подготовки технические ограничения при ее реализации, а также низкую практическую активность участников образовательного процесса в рамках определенных групп образовательных программ.

Работа учителя начальных классов в современных условиях требует расширения его компетенций. Понятие «компетенция» достаточно широко употребляемый термин в обществе, в том числе неоднократно рассматривается в психолого-педагогической литературе.

А.В. Хуторской формулирует компетенцию как «отчужденное, заранее заданное социальное требование (норма) к образовательной подготовке ученика, необходимое для его продуктивной деятельности в определенной сфере» [7].

Существуют различные типы компетенций, которые можно классифицировать по их уровням и типам. Следует отметить специфику требуемых компетенций будущих учителей начальных классов, которые усваивают знания, применяют их (предметные компетенции), но также овладевает навыками обучения других (педагогические компетенции). Компетенции в данном случае имеют двойное значение в деятельности будущего учителя.

Л. Агеева и Т. Левченко отмечают, что «на основании принятия квалификационных рамок Болонского процесса и признание важности формирования и развития профессиональных компетенций как основы университетских образовательных программ, выделяются общие компетенции, включающие три типа: инструментальные, межличностные и системные» [8].

S-M. Korte и другие, отмечают в своем исследовании: «технологические компетенции учителей и их интересы в использовании технологий различаются, а технологии быстро развиваются, технологическая педагогическая подготовка должна постоянно проводиться на индивидуальном и школьном уровнях» [6].

Высшее образование в Республике Казахстан ориентировано на подготовку высококвалифицированного, конкурентоспособного педагога, обладающего фундаментальными и прикладными знаниями, исследовательскими навыками для осуществления научно-педагогической, практико-ориентированной деятельности. Для того, чтобы студент — будущий учитель начальных классов аккумулировал потенциал педагогических компетенций для осуществления своего профессионального роста необходимо также владение средствами дистанционного обучения, обеспечивающие учебный процесс цифровыми образовательными ресурсами с целью создания условий для того, чтобы у обучающихся происходило приращение в знаниях, умениях и личностных качествах.

Эффективность использования средств дистанционного обучения зависит от способности профессорско-преподавательского состава управлять качеством применения технологий и развивать активность студентов в образовательном пространстве организации высшего образования для достижения конечных целей профессиональной подготовки будущих учителей начальных классов.

В образовательной программе «6В01301 — Педагогика и методика начального обучения» НАО «Карагандинский университет имени академика Е.А. Букетова» в формулировке результатов обучения на основе цифровых компетенций (Digitalskills) указывается, что в процессе обучения будущий учитель начальных классов овладевает дистанционными образовательными технологиями, применяет методы и средства дистанционного обучения, информационно-коммуникационные технологии, онлайн сервисы, платформы для дистанционного обучения в системе школьного образования, составляет задания для дистанционного обучения. Данный результат формируется в процессе изучения ряда дисциплин, в том числе «Информационно-коммуникационные технологии», «Методика применения цифровых образовательных ресурсов в начальной школе», «Методика преподавания учебного предмета «Цифровая грамотность» в начальной школе» и др.

В результате освоения образовательной программы у будущего учителя начальных классов формируются следующие компетенции: свободно применяет информационно-коммуникационные технологии (ИКТ) для организации учебно-воспитательного процесса на всех его этапах — от подготовки к занятиям до создания цифровой среды, способствующей учебной мотивации обучающихся; предоставляет обратную связь обучающимся и их родителям (законным представителям) по итогам выполненных СОР и СОЧ; обменивается информацией, опытом с помощью цифровых технологий между учителями ближнего и дальнего зарубежья; повышает уровень собственной квалификации посредством онлайн-обучения.

В документе «Об утверждении профессиональных стандартов для педагогов организаций образования» [9] по уровню квалификации 6 высшее образование (бакалавриат), специальности подготовка учителей без предметной специализации, профессии учитель начальной школы представлен перечень трудовых функций и навыков, на основе которых авторами сформулированы компетенции педагога с критериями:

1. Профессиональные ценности: выполняет свою профессиональную деятельность на основе уважения и ответственности, академической честности и справедливости.

2. Профессиональные знания: понимает педагогические подходы качественного обучения на основе знаний стратегических документов в области образования, культурных ценностей и теории обучения.

3. Практика преподавания / обучения и воспитания: планирует образовательный процесс, организует безопасную, благоприятную среду для всех обучающихся/воспитанников и обеспечивает достижение целей обучения и воспитания.

4. Профессиональное развитие: управляет собственным профессиональным ростом и развивает компетенции для эффективной педагогической деятельности.

Рассмотренные выше виды компетенций можно сгруппировать на основе направлений педагогической деятельности учителя начальных классов: целеполагание, планирование, методика, организация, рефлексия, общение, творчество, саморазвитие.

Методы и материалы

На основе анализа работ ученых, синтеза учебно-методических идей, образовательной программы, обобщения собственного педагогического опыта и метода самооценки студентов предпринята попытка ответить на вопрос: «Обеспечивается ли формирование педагогических компетенций у будущих учителей начальных классов средствами дистанционного обучения?»

Исследователями сформулированы следующие педагогические компетенции будущих учителей начальных классов, степень сформированности которых говорит о качестве оказываемых образовательных услуг средствами дистанционного обучения:

– ответственно подходит к постановке целей своей деятельности, ее реализации;

– информационно грамотен — умеет искать, отбирать и анализировать информацию, необходимую для работы, а также создавать ее;

– владеет навыками использования информационных технологий;

– применяет знания на практике — реализация педагогической деятельности с учетом возрастных и других особенностей обучающихся, использование современных технологий обучения и воспитания;

– демонстрирует способность выстраивать общение со всеми участниками образовательного процесса, в том числе онлайн, умение сотрудничать, навыки командной работы;

– владеет инструментами объективного оценивания достижений обучающихся, обеспечивает обратную связь;

– проявляет творчество и инициативу в педагогической деятельности, работает над формированием авторского подхода к педагогической деятельности;

– реализует процесс самообразования на основе рефлексии собственной деятельности и результатов ее оценки другими педагогами.

Для определения самооценки будущими учителями начальных классов своих педагогических компетенций авторами использованы листы самооценки. В данном исследовании самооценки приняли участие 34 студента выпускного курса образовательной программы «6В01301–Педагогика и методика начального обучения», обучающиеся с применением дистанционных образовательных технологий. В листе отражены индикаторы вышерассмотренных ключевых педагогических компетенций и предложены для самооценки уровни их сформированности (В-высокий — оценивается на 50 баллов, С-средний — 30 баллов, Н-низкий уровень — 20 баллов) (Таблица 1).

Т а б л и ц а 1

Лист самооценки педагогических компетенций

№	Индикаторы педагогических компетенций	В	С	Н
1	Я уважаю всех участников образовательного процесса			
2	Я осознаю ответственность своей будущей педагогической деятельности			
3	Я понимаю особенности и потребности разных типов обучающихся			
4	Я могу ставить объективные цели обучения и воспитания			
5	Я планирую образовательный процесс в соответствии с целями обучения и воспитания			
6	Я осваиваю инновационные технологии организации образовательного процесса			
7	Я умею искать и отбирать нужную мне информацию на основе анализа			
8	Я владею методами оценивания при разработке, планировании и проведении урока			
9	Я подбираю технологии обучения и воспитания и стратегии оценивания в соответствии с целями обучения и воспитания с учетом индивидуальных особенностей и потребностей обучающихся			

№	Индикаторы педагогических компетенций	B	C	H
10	Я могу обеспечить безопасную образовательную среду, в том числе и цифровую, создавать учебные материалы			
11	Я провожу анализ своих профессиональных компетенций и практику других			
12	Я планирую непрерывное улучшение собственной практики			
13	Я могу сотрудничать с другими (преподавателями, студентами)			
14	Я участвую в исследованиях практики учителей начальных классов			
15	Я делюсь своим опытом и знаниями			

Результаты и их обсуждение

Студентам были представлены листы самооценки, где они самостоятельно определяли свой уровень развития педагогических компетенций, в которых отражали субъективное мнение о своих сильных сторонах и резервах для дальнейшего профессионального роста. Поскольку ответы респондентов были анонимными, то полученные результаты отражают действительность и могут быть использованы для построения надёжных выводов.

Анализ листов самооценки студентов позволил получить информацию о степени сформированности педагогических компетенций будущих учителей начальных классов в условиях дистанционного обучения (рис.1).
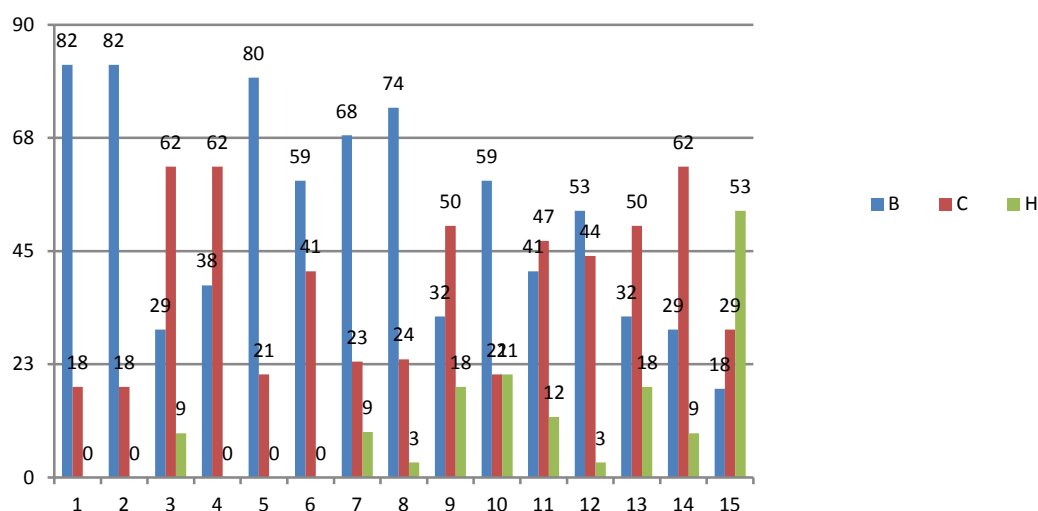
Рисунок 1. Результаты самооценки педагогических компетенций

Полученные данные показывают, что большинство студентов отметили у себя в качестве наиболее сформированных педагогические компетенции 1, 2, 5, 6–8, 10, 12.

82 % будущих учителей начальных классов отметили, что достаточно уважительно относятся ко всем участникам образовательного процесса и осознают всю ответственность своей будущей педагогической деятельности.

79,5 % участников считают, что могут планировать образовательный процесс в соответствии с целями обучения и воспитания самооценки.

59 % осваивают инновационные технологии организации образовательного процесса для дальнейшего применения на практике. Большинство студентов (68 %) отлично владеют навыками поиска, отбора нужной информации, ее анализа. На высоком уровне (73,5 %) владеют методами оценивания при разработке, планировании и проведении урока, что важно в реальной педагогической деятельно-

сти. 59 % могут создать безопасную образовательную среду, в том числе и цифровую, разрабатывать учебные материалы. 53 % успешно планируют непрерывное улучшение собственной практики.

Большинство отмеченных у будущих учителей начальных классов как максимально сформированные педагогические компетенции можно отнести к предварительным, теоретическим, не гарантирующим практические навыки.

Сформированы на среднем уровне, по мнению студентов, педагогические компетенции 3, 4, 9, 11, 13, 14. Понимают особенности и потребности разных типов обучающихся 61,8 % студентов, но это не гарантирует их учет в дальнейшей педагогической деятельности, так как студенты отмечают, что средне владеют навыками подбора технологий обучения, воспитания и стратегий оценивания в соответствии с целями обучения и воспитания с учетом индивидуальных особенностей и потребностей обучающихся (50 %). Большинство студентов могут ставить объективные цели обучения и воспитания (61,8 %), изучают опыт действующих учителей начальных классов (61,8 %).

Наибольшее количество студентов по компетенции 15 отмечается с низким уровнем. 53 % студентов не могут делиться своими знаниями и опытом, что затруднит в будущем их профессиональное общение и рост. Кроме того, несколько студентов отметили у себя низкий уровень сформированности компетенции подбора технологий обучения и воспитания (18 %), обеспечения образовательной среды, создания учебных материалов (20,5 %) и сотрудничества с другими людьми (18 %). Что касается низкого уровня компетенции сотрудничества с субъектами педагогического процесса (преподаватели, студенты), то это связано с недостаточным объемом живой и совместной работы студентов в период обучения, слабыми навыками преподавателей по организации совместной и групповой работы в дистанционной среде обучения.

Таким образом, по результатам самооценки, большинство педагогических компетенций, сформированных на высоком и среднем уровне у студентов, обучающихся с применением дистанционных образовательных технологий, связаны с теоретическими знаниями, планированием будущей деятельности, постановкой целей, планированием улучшения своей деятельности. Ряд компетенций (умение искать и отбирать нужную информацию на основе анализа, освоение инновационных технологий организации образовательного процесса, навыки организации образовательной среды, в том числе цифровой, разработки учебных материалов) сформированы на достаточном уровне, благодаря самим условиям дистанционного обучения, то есть их формирование неизбежно. Студенты на среднем уровне готовы и могут сотрудничать, так как для дистанционного обучения характерно «одиночество обучения». Навыки рефлексии собственной деятельности также сформированы у большинства студентов на среднем уровне, что связано, прежде всего, с отсутствием обратной связи в условиях дистанционного обучения в вузе. Сложности с подбором методов, технологий обучения и воспитания в соответствии с целями обучения и воспитания с учетом индивидуальных особенностей и потребностей обучающихся, на наш взгляд, связаны с редким использованием, академической направленностью обучения, большим объемом теоретического материала, предназначенного для самостоятельного изучения, с недостаточным использованием кейсов из реальной деятельности учителей начальных классов.

Следует отметить, что полученные результаты могут отличаться в случае оценки преподавателями сформированности педагогических компетенций студентов. Тем не менее, результаты самооценки педагогических компетенций будущих учителей начальных классов указывают на необходимость создания определенных условий для их формирования средствами дистанционного обучения.

В ходе бесед и наблюдений за студентами, можно отметить несколько аспектов, способных повлиять на формирование педагогических компетенций будущих учителей начальных классов. Во-первых, дистанционное обучение требует повышенного внимания преподавателей в силу удаленности и минимума «живого общения». Во-вторых, обучающихся с применением дистанционных образовательных технологий больше привлекает практическая сторона обучения, исходя из чего, следует опираться на их опыт, использовать больше практических заданий, привлекать практикующих учителей (например, демонстрация реальных уроков).

Одной из причин недостаточного уровня педагогических компетенций, может быть, использование не всех возможностей дистанционного обучения, технологий для достижения результатов обучения. Данный момент исследован М.К. Омаровой, которой была оценена степень эффективности использованных технологий для достижения результатов обучения в процессе преподавания дистанционного учебного курса. По результатам опроса студентов, автор отмечает, что «необходимо уделить время выбору технологий обучения, предварительно изучить их практические последствия, функционал, который поможет студентам достичь результатов обучения» [10].

Изменение формата итоговых оценочных заданий на положительно повлияет на формирование практических педагогических компетенций будущих учителей. Для развития компетенции сотрудничества необходимо увеличение использования совместных заданий, взаимооцениваемых заданий, обеспечивающих общение и поддержку студентов. Формированию навыков исследования опыта действующих учителей начальных классов будет способствовать проведение тематических мини-конференций для студентов, обучающихся с применением дистанционных образовательных технологий.

Выводы

Таким образом, исходя из результатов исследования, можно констатировать, что формирование педагогических компетенций у будущих учителей начальных классов средствами дистанционного обучения обеспечивается не в полной мере. Для достижения их сформированности необходимо создать следующие педагогические условия:

- связь с обучающимися, мониторинг их достижений, предоставление обратной связи;
- обеспечение дифференцированного подхода;
- использование интерактивного подхода в дистанционном обучении;
- обучение навыкам самооценки прогресса и рефлексии своих навыков;
- оптимальное сочетание дистанционного обучения с контактным;
- создание условий для самореализации индивидуальности студента;
- активное использование инновационных средств дистанционного обучения для формирования практических компетенций;
- разнообразие форм учебной деятельности: групповая, проектная, индивидуальная и т.д.

Соблюдение данных условий обеспечит подготовку высококвалифицированных специалистов, обладающих педагогическими компетенциями, способных решать будущие профессиональные задачи в качестве субъекта в дистанционном формате обучения и преподавания.

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Г.С. Отыншина, С.А. Одинцова, А.Т. Кенжебаева, С.А. Салкимбаева

Қашықтықтан оқыту арқылы болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттілігін қалыптастыру

Мақала қашықтан оқыту арқылы болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттілігін қалыптастыру мәселесіне арналған. Сонымен қатар цифрландыру жағдайында мұғалімдерді даярлау сапасын арттырудың өзектілігі негізделген. Бастауыш білім беру сапасына қойылатын талаптарды арттыру бастауыш сынып мұғалімдерінің құзыреттілігі мәселесін өзекті етеді. Мақаланың негізгі мазмұны, біріншіден, болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттіліктерін қалыптастырудағы қашықтықтан оқыту мүмкіндіктерімен; екіншіден, өзін-өзі бағалау негізінде болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттіліктерінің қалыптасу деңгейінің мониторинг материалдарымен байланысты. Авторлар ғалымдардың еңбектерін талдау, оқу-әдістемелік идеяларды синтездеу, өзіндік оқыту тәжірибесін қорыту және оқушылардың өзін-өзі бағалау әдісі негізінде «Болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттіліктерін қашықтықтан оқыту арқылы қалыптастыру қамтамасыз етілуде ме?» деген сұраққа жауап алды. Мақалада болашақ бастауыш сынып мұғалімдерінің педагогикалық қызмет бағыттарына сәйкес мақсат қою, жоспарлау, әдістеме, ұйымдастыру, рефлексия, коммуникация, өзін-өзі дамыту сияқты педагогикалық құзыреттіліктер тұжырымдалған. Болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттіліктері өзін-өзі бағалау нәтижелерінің талдауы ұсынылған. Қашықтықтан оқыту технологияларын қолдану арқылы білім алушыларда жоғары және орташа деңгейде қалыптасатын педагогикалық құзыреттіліктердің басым бөлігі теориялық білімге, болашақ іс-әрекетті жоспарлауға, мақсат қоюға, өз өнімділігін арттыруды ұйымдастыруға байланысты. Болашақ бастауыш сынып мұғалімдерінің педагогикалық құзыреттіліктерін өзін-өзі бағалау нәтижелері оларды қашықтықтан оқыту арқылы қалыптастыру үшін белгілі бір жағдайлар жасау қажеттілігін көрсетеді.

Кілт сөздер: құзыреттілік тәсіл, құзыреттер, педагогикалық құзыреттер, қашықтықтан оқыту, кәсіби дайындық, студенттер, бастауыш мектеп мұғалімі.

G.S. Otynshina, S.A. Odintsova, A.T. Kenzhebayeva, S.A. Salkimbayeva

Formation of pedagogical competencies of future primary school teachers by means of distance learning

The article is devoted to the problem of the formation of pedagogical competencies of future primary school teachers by means of distance learning. The article substantiates the relevance of improving the quality of teacher training in the conditions of digitalization. Increasing the requirements for the quality of primary education makes the issue of the competence of primary school teachers relevant. The main content of the article is connected, firstly, with the possibilities of distance learning in the formation of pedagogical competencies of future primary school teachers. Secondly, it is linked with the materials of monitoring the level of formation of pedagogical competencies of future primary school teachers on the basis of self-assessment. Based on the analysis of the works of scientists, the synthesis of educational and methodological ideas, the generalization of their own pedagogical experience and the method of self-assessment of students, an attempt was made to answer the question "is the formation of pedagogical competencies of future primary school teachers ensured by means of distance learning?" The authors formulated the pedagogical competencies of future primary school teachers based on the areas of pedagogical activity: goal setting, planning, methodology, organization, reflection, communication, self-development. The analysis of the results of the self-assessment by future primary school teachers of their pedagogical competencies is presented. Most of the pedagogical competencies formed at a high and intermediate level among students studying with the use of distance learning technologies are associated with theoretical knowledge, planning future activities, setting goals, planning to improve their activities. The results of self-assessment of pedagogical competencies of future primary school teachers indicate the need to create certain conditions for their formation by means of distance learning.

Keywords: competence approach, competencies, pedagogical competencies, distance learning, professional training, students, primary school teacher.

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ОҚЫТУДЫҢ ИННОВАЦИЯЛЫҚ ТЕХНОЛОГИЯЛАРЫ
ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ ОБУЧЕНИЯ
INNOVATIVE TECHNOLOGIES OF EDUCATION

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Развитие эмоционального интеллекта как фактор профессиональной компетентности педагога

В настоящей статье приводится обоснование значимости формирования навыков эмоционального интеллекта в структуре профессиональных компетенций педагогов, в том числе начинающих, а также специалистов помогающих профессий. Авторы знакомят читателей с опытом реализации программы по развитию эмоционального интеллекта, разработанной экспертами международного уровня в данной сфере, адаптированную под конкретную задачу — осуществление эффективного наставничества в коррекционной школе-интернате. Это является инновационным подходом в системе наставничества молодых, вновь принятых педагогов и других работников в образовательной организации. Программа разработана на основе анализа научной литературы по данному конструкту, ключевым теоретическим подходам к изучению эмоционального интеллекта, а также его структурных компонентов, включающих способности к идентификации, пониманию и управлению как собственных эмоциональных состояний, так и эмоций других людей. Применения программы развития эмоционального интеллекта продемонстрировали доказанную эффективность, по оценке профессионального сообщества в сфере педагогического наставничества в ходе прохождения конкурсных испытаний. Материал адресован разработчикам моделей наставничества образовательных организаций. В перспективе данная система мероприятий, направленная на развитие уровня эмоционального интеллекта педагогов, может быть использована психологами, преподавателями для повышения личностных профессиональных компетенций специалистов, работающих с лицами, имеющими различные нарушения в развитии.

Ключевые слова: тьютор развития эмоционального интеллекта, система наставничества в школе, эмоциональный интеллект, надпрофессиональные компетенции учителя, педагогическое наставничество, экспертная оценка, профессиональное развитие.

Введение

В современном мире, где образование претерпевает постоянные изменения, а требования к педагогам растут, эмоциональный интеллект (ЭИ) становится одним из ключевых факторов профессиональной компетентности. Более чем просто знание предмета, педагог должен обладать способностью понимать и управлять своими эмоциями, а также распознавать и влиять на эмоции других — учеников, коллег, родителей.

Тема развития эмоционального интеллекта актуальна как для молодых педагогов, так и для опытных специалистов помогающих профессий, а также специалистов, работающих в сфере образования, лиц с ограниченными возможностями здоровья по следующим причинам.

С одной стороны, специалист с высоким эмоциональным интеллектом способен решать проблему эмоциональной нестабильности, социальной изоляции, снижать тревожность и коммуникативные

барьеры обучающихся с ограниченными возможностями здоровья. Известно, что дети с расстройствами аутистического спектра, синдромом дефицита внимания и гиперактивности, нарушениями слуха и зрения, интеллектуальной недостаточностью, психическими расстройствами обладают ограниченной способностью идентифицировать, распознавать эмоции свои и других людей.

С другой стороны, эмоциональный интеллект имеет существенное значение для педагогов и специалистов, особенно в контексте специального (дефектологического) образования. В данной работе мы хотим представить кейс, который используется в практике наставничества в коррекционной школе-интернате для детей с особенностями интеллектуального развития в г. Москве.

В современных условиях реализации федеральных государственных образовательных стандартов (ФГОС) дошкольного, начального и общего образования для детей с ограниченными возможностями здоровья и для обучающихся с умственной отсталостью, педагоги и специалисты становятся ключевыми ресурсами, основным активом образовательного учреждения в контексте инновационного, прогрессивного развития образовательной деятельности. Это подразумевает, что для наиболее результативного, продуктивного решения задач, стоящих перед системой общего образования, все ее участники образовательного процесса — учителя, преподаватели, воспитатели и другие специалисты — должны обладать новыми компетенциями, необходимыми для обеспечения высокого качества образования. Они развивают аналитические способности, навыки продуктивной педагогической работы, планирования индивидуального профессионального пути, улучшают свою образовательную деятельность, адаптируются к меняющимся условиям и требованиям, а также проектируют, разрабатывают, компилируют и распространяют качественные образовательные материалы.

В связи с актуальными требованиями к организации и содержанию специального коррекционного образования в современных школах, для экспериментального решения задачи наставничества, был разработан и реализован проект в московской школе по внедрению наставничества для профессионального развития педагогов. Цели и задачи наставничества, направленные на учет интересов, желаний и запросов подопечных, способствовали созданию образовательной коррекционно-развивающей среды, стимулирующей самосовершенствование и самообразование каждого отдельного учителя. Этот проект был призван адаптировать учителей к современным требованиям и помочь им в профессиональном развитии.

В рамках реализации наставнической деятельности мы считаем целесообразным применение подхода, в котором эмоциональный интеллект специалиста рассматривается как когнитивная компетенция, позволяющая распознавать и интерпретировать эмоции, оптимизировать мыслительные процессы посредством использования эмоциональных ресурсов, понимать природу эмоций и их внешние проявления, а также осознанно управлять собственными эмоциональными реакциями [1, 2].

Внедрению программы развития эмоционального интеллекта предшествовала эмпирическая часть исследования, включавшая диагностику уровня эмоционального интеллекта наставляемых и наставников. На основе методики исследования оценки уровня эмоционального интеллекта использовался тест MSCEIT [1, 2, 3, 4], разработанный авторами используемой теоретической модели эмоционального интеллекта (Дж. Мэйера, П. Сэловея и Д. Карузо). В основе методики — теста эмоционального интеллекта — модель эмоционального интеллекта как способности Дж. Мэйера, П. Сэловея и Д. Карузо [5] и психоэволюционная теория эмоций Плутчика Р. [6], ставшие основой концепции методики, представленной учеными Е.А. Сергиенко, Е.А. Хлевнаой, И.И. Ветровой, Т.С. Киселевой [7] прототипом которой была методика MSCEIT v. 2.0 [8].

Обосновывается значимость формирования навыков эмоционального интеллекта (ЭИ) в структуре профессиональных компетенций педагогов, в том числе начинающих специалистов. На основе анализа научной литературы рассматриваются существующие дефиниции данного конструкта, ключевые теоретические подходы к его изучению, а также структурные компоненты ЭИ, включающие способности к распознаванию, пониманию и регуляции как собственных эмоциональных состояний, так и эмоций других окружающих.

На основании проведенного анализа была выбрана программа по развитию эмоционального интеллекта, разработанная экспертами международного уровня в данной сфере — Лабораторией эмоционального интеллекта «EI Lab», адаптированную под конкретную задачу — осуществление эффективного наставничества в коррекционной школе-интернате, что является инновационным подходом в системе наставничества молодых, вновь принятых педагогов и других работников в образовательной организации.

В школе-интернате для детей с интеллектуальными особенностями, включая легкую, умеренную и тяжелую умственную отсталость, внедряется программа развития эмоционального интеллекта. Она предназначена для молодых и начинающих специалистов, а также педагогов, и реализуется через индивидуальное наставничество. Целью является восполнение психолого-педагогических ресурсов в рамках школьной системы поддержки педагогов, учитывая текущее отсутствие психолога в работе с наставляемыми.

Программа базируется на материалах, предоставленных тьютору эмоционального интеллекта М.В. Зинченко, после завершения курса повышения квалификации и успешной сдачи Международного экзамена в Международном центре «Креативные технологии консалтинга». Данный Центр разработал программу, основываясь на научной модели профессоров Йельского университета и университета Нью-Гэмпшира, при их непосредственном участии и экспертной поддержке.

В основе модели системы наставничества школы-интерната для детей с интеллектуальными нарушениями, на базе которой реализовывалась программа, лежит принцип актуализации образовательного пространства для каждого педагога, при этом развитие определяется самим наставляемым. Наставник, обеспечивая индивидуальное сопровождение, способствует профессиональному росту, создавая условия для развития по индивидуальной траектории, учитывая образовательные потребности и выбор актуального содержания и форм обучения. В контексте данной программы развития эмоционального интеллекта, наставник выполняет роль фасилитатора, обеспечивая доступ к необходимым ресурсам и инструментам для саморазвития наставляемого. Особое внимание уделяется созданию безопасной и поддерживающей среды, где педагоги могут открыто обсуждать свои эмоциональные переживания, профессиональные вызовы и запросы на развитие.

Деятельность наставника направлена на организацию условий для входа каждого наставляемого в процесс специального коррекционного образования как в процесс управления собственной траекторией профессионального развития. Индивидуальные встречи между наставником и наставляемым проводятся регулярно, обеспечивая возможность для обсуждения конкретных ситуаций из педагогической практики, анализа эмоциональных реакций и разработки стратегий для улучшения эмоционального самоконтроля и эмпатии. В процессе наставничества используются различные техники и методики, адаптированные из материалов, предоставленных тьютором М.В. Зинченко, включая ролевые игры, анализ кейсов и ведение дневника самонаблюдений.

Наставник играет ключевую роль в процессе профессионального становления наставляемого, выступая в качестве катализатора его личностного и карьерного роста. Он не только делится своим опытом и знаниями, но и помогает наставляемому сформировать четкое представление о текущем состоянии его профессиональных компетенций.

В ходе совместной работы наставник способствует выявлению областей, требующих улучшения, а также определению потенциальных направлений для развития. Этот процесс включает в себя анализ сильных и слабых сторон наставляемого, оценку его навыков и умений, а также выявление пробелов в его знаниях.

Наставник, обладая глубоким пониманием рынка труда и требований к специалистам в конкретной области, помогает наставляемому сориентироваться в многообразии образовательных программ и выбрать наиболее подходящие для достижения поставленных целей. Он оказывает поддержку в разработке индивидуальной образовательной траектории, учитывающей личные предпочтения, возможности и карьерные устремления наставляемого.

Таким образом, наставничество становится эффективным инструментом для повышения квалификации и профессионального развития, обеспечивая наставляемого необходимыми знаниями, навыками и компетенциями для успешной реализации в выбранной сфере деятельности.

Материалы и методы

Цель программы — развивать эмоциональный интеллект для роста профессионализма и благополучия педагогов, повышать культуру отдельного специалиста / педагога / работника школы и школьного сообщества в целом, вести к осознанности и пониманию себя.

Программа построена таким образом, чтобы последовательно и системно повышать уровень развития эмоционального интеллекта наставляемых — участников программы. Программа повышения уровня эмоционального интеллекта для учителей, работающих с детьми с ментальными нарушениями, тщательно структурирована для достижения максимальной эффективности в применении полу-

ченных знаний на практике. Каждый этап имеет четкие цели и задачи, направленные на развитие конкретных навыков.

На первом этапе акцент делается на самосознании и саморегуляции. Наставляемые учатся идентифицировать и понимать свои собственные эмоции, знакомятся с классификацией существующих эмоций и подробно узнают о функциях каждой, а также овладевают техниками эффективного управления ими. Это критически важно для поддержания эмоционального равновесия в стрессовых ситуациях, часто возникающих в работе с детьми с ментальными нарушениями. В это время наставляемые обучаются таким техникам, как экспресс-диагностика своих эмоций, осознание своих эмоциональных проявлений, точная передача эмоциональных состояний, техники вербализации чувств, моделирование эмоций, распознавание эмоций, невербальное проявление эмоций, понимание информации, которую дают эмоции, техники снижения эмоционального напряжения.

Второй этап посвящен развитию навыков эмоционального интеллекта во взаимодействии с другими участниками образовательного процесса. Учителя осваивают стратегии конструктивного разрешения конфликтов, сложных, неоднозначных ситуаций, возникающих в ходе образовательного процесса, а также использованию способностей эмоционального интеллекта во взаимодействии со всеми участниками образовательного процесса и создания позитивной рабочей атмосферы. Особое внимание уделяется развитию эмпатии и умению понимать эмоциональное состояние окружающих. На данном этапе участникам предлагаются к освоению стратегии достижения целей через создание взаимоотношений, основанных на своих эмоциях и эмоциях других участников образовательных отношений. Наставляемые учатся управлять эмоциями, развивать способность стимулировать активность и вызывать в людях рабочую мотивацию. Большое внимание на этом этапе отводится определению ценностей.

Третий этап направлен на развитие навыков работы с группой, включая педагогов и родителей. Учителя изучают техники эффективной коммуникации и управления групповой динамикой, что позволяет им успешно разрешать конфликты и создавать благоприятную среду для обучения и развития детей. На данном этапе происходит обучение стратегиям достижения целей через создание взаимоотношений в группе, изучаются техники работы с конфликтными ситуациями, техники направления эмоций педагогов / родителей на результат, который будет способствовать повышению качественного образования детям с ментальными нарушениями, развивается умение понимать манипуляции в группе родителей и эффективно реагировать на них, умение предотвращать конфликтные ситуации и грамотно разрешать.

Четвертый этап посвящен интеграции полученных знаний и навыков в повседневную практику. Наставляемые учатся применять эмоциональный интеллект для повышения качества взаимодействия со всеми участниками образовательного процесса, осваивают техники развития эмоциональной гибкости, креативности, стимулирования мышления и использования эмоций в социальном взаимодействии, что способствует созданию более эффективной и поддерживающей среды для детей с ментальными нарушениями.

Углубленное изучение и применение программы наставничества способствует формированию у наставляемых не только теоретических знаний, но и практических навыков, необходимых для эффективной работы в образовательной среде. Программа предоставляет возможность ознакомиться с современными методами и техниками, направленными на развитие эмоционального интеллекта, что является важным аспектом успешного взаимодействия с учениками, коллегами и родителями. Особое внимание уделяется развитию эмпатии и способности к пониманию эмоционального состояния других людей. Это достигается благодаря использованию специализированных тренингов и практических упражнений, которые помогают участникам программы улучшить свои коммуникативные навыки и создать более доверительные отношения в коллективе.

Даже по итогам первого года реализации Программы участники — наставляемые отмечали положительные результаты практического опыта внедрения и реализации программы в образовательной организации. Они отмечали расширение своих представлений о научной основе конструкта «эмоциональный интеллект», его структуре, спектре возможностей применения навыков, формируемых в ходе реализации программы; об инструменте Диагностики уровня развития эмоционального интеллекта; о первых шагах в освоении техник развития эмоционального интеллекта («Эмоциональный термометр», использование эмоций в решении задач, снижение интенсивности эмоций и ряд других техник и приемов); снижение числа конфликтов с коллегами, администрацией, родителями; рост вовлечённости обучающихся с ограниченными возможностями здоровья и ряд других положи-

тельных эффектов. Программа наставничества также направлена на поддержку профессионального здоровья педагогов. Участие в программе позволяет специалистам освоить методы преодоления стрессовых ситуаций, а также повысить свою устойчивость к эмоциональным перегрузкам. Это способствует сохранению психологического благополучия и повышению эффективности работы.

Программа подразумевает:

– широкое использование методик и технологий рефлексивно- и эмоционально-ценностного отношения к участникам системы наставничества, которые способствуют актуализации глубинных жизненных ресурсов, нередко скрытых от них самих;

– специфическую эмоционально-моральную поддержку наставников и наставляемых посредством проведения специальных сертифицированных тренингов, направленных на развитие эмпатических способностей, применения акмеологических практик, укрепляющих профессиональное здоровье специалистов, способствующих преодолению жизненных и профессиональных кризисов;

– формирование психологической готовности наставляемого не копировать чужой, пусть и очень успешный опыт, а выйти на индивидуальную траекторию, которая поможет сформироваться неповторимому профессиональному почерку педагога.

В конечном итоге, программа наставничества создает условия для профессионального роста и развития педагогов. Наставляемые получают возможность не только перенять опыт более опытных коллег, но и сформировать свой собственный уникальный стиль работы, основанный на глубоком понимании образовательных процессов и умении эффективно взаимодействовать с участниками образовательного процесса.

Результаты и их обсуждение

Применение программы развития эмоционального интеллекта позволяет не только эффективно адаптировать молодого специалиста к новым условиям работы, но и способствует формированию у него осознанного отношения к профессии, а также развитию необходимых компетенций для успешной педагогической деятельности. Программа развития эмоционального интеллекта выступает в качестве катализатора, ускоряющего процесс интеграции молодого педагога в коллектив и способствующего его профессиональному росту. Реализация программы наставничества, основанной на развитии эмоционального интеллекта, предполагает создание доверительной и поддерживающей среды, в которой молодой специалист чувствует себя комфортно и уверенно. Наставник, обладающий высоким уровнем эмоционального интеллекта, способен эффективно взаимодействовать с наставляемым, понимать его потребности и оказывать необходимую поддержку.

Индивидуальная траектория развития, разработанная с учетом личностных особенностей и профессиональных целей молодого педагога, позволяет максимально эффективно использовать его потенциал. Программа включает в себя различные формы обучения и развития, такие как тренинги, мастер-классы, семинары и индивидуальные консультации.

В результате применения данной программы, молодой специалист не только успешно адаптируется к педагогической деятельности, но и развивает свой эмоциональный интеллект, что положительно сказывается на его взаимодействии с учениками, коллегами и родителями. Это, в свою очередь, способствует созданию благоприятной образовательной среды и повышению качества образования в целом. Оценка эффективности программы проводится на основе динамики развития эмоционального интеллекта педагогов, их удовлетворенности процессом наставничества и изменений в их педагогической практике, а также анализа результатов работы наставляемых, отзывов участников и данных о достижении поставленных целей. Обратная связь от наставляемых регулярно собирается и анализируется для дальнейшей корректировки и улучшения программы. На основе полученных данных в программу вносятся необходимые корректировки для повышения ее эффективности.

В целях получения экспертной оценки эффектов реализации программы развития эмоционального интеллекта в системе наставничества Государственного казенного общеобразовательного учреждения города Москвы «Специальная (коррекционная) общеобразовательная школа-интернат № 79», промежуточные результаты были представлены на конкурс Московской городской организации Общероссийского Профсоюза наставников и систем наставничества в отношении молодых педагогов образовательных организаций города Москвы «Наставник молодых педагогов — 2023». Команда школы наставников стала призером, получив II место в номинации «Лучшая система наставничества».

Результаты исследования, направленного на изучение эффектов от реализации программы развития эмоционального интеллекта у педагогов и специалистов, получили подтверждение со стороны экспертного сообщества. В частности, специалисты и эксперты в области педагогического наставничества Московской городской организации Профсоюза образования отметили значимость проведенной работы и ее соответствие современным требованиям к профессиональной подготовке педагогов.

Экспертами было отмечено, что предложенная система групповых занятий способствует:

– развитию ключевых компетенций, необходимых для эффективного педагогического взаимодействия;

– снижению уровня профессионального стресса у молодых, вновь принятых педагогов и специалистов, занимающихся обучением и воспитанием детей с особенностями физического и психического развития;

– формированию навыков эмоциональной саморегуляции, что особенно актуально в условиях высокой психоэмоциональной нагрузки в образовательной среде.

Опыт внедрения программы развития эмоционального интеллекта в систему наставничества для педагогов коррекционного образования крайне ценен.

Это подтверждает и исследование в Scopus: «Emotional Intelligence asa Predictorof Beginner Teacher Resilience» (2022) — педагоги с высоким ЭИ реже уходят из профессии. Для наставляемых высокий эмоциональный интеллект помогает справляться с эмоциональными перегрузками, такими как агрессия, тревожность учеников с ограниченными возможностями здоровья, поскольку формирует гибкие навыки (эмпатия, невербальная коммуникация), критичные в специальном (коррекционном) образовании. Для наставников ЭИ позволяет точнее диагностировать трудности наставляемых, например, страх работы с «особыми» детьми.

Полученные данные не только подтверждены статистически, но и получили экспертное признание, что свидетельствует о практической значимости исследования и целесообразности внедрения разработанной методики в систему профессионального развития педагогов.

Заключение

Принимая во внимание доказанную эффективность данного механизма, становится возможным формирование у наставляемых четкого представления о текущем уровне их профессиональной компетентности. Это позволяет им более осознанно подходить к выбору дальнейших образовательных траекторий, основанных на реальных потребностях и стремлении к профессиональному росту. Важным аспектом является предоставление наставляемым возможности самостоятельного выбора форм дополнительного профессионального образования. Это способствует развитию их ответственности и мотивации к обучению, а также позволяет адаптировать процесс обучения к индивидуальным особенностям и предпочтениям. Трэки индивидуальной образовательной программы должны разрабатываться с учетом специфики профессиональной деятельности обучающихся и направлены на развитие конкретных компетенций, необходимых для успешного выполнения их должностных обязанностей. Такой подход позволяет обеспечить максимальную практическую пользу от обучения и повысить его эффективность. В конечном итоге, реализация данного механизма способствует формированию у обучающихся устойчивой мотивации к непрерывному профессиональному развитию и повышению квалификации, что является необходимым условием для успешной карьеры в современном мире.

С учетом вышесказанного кафедрой специального дефектологического образования Московского института психоанализа были обобщены механизмы интеграции ЭИ в образовательные программы высшего образования и использованы в дополнительных образовательных программах, факультативах Московского института психоанализа, как эффективного решения задачи учительского роста в системе специального коррекционного образования. Ожидаемыми эффектами от внедрения программ развития эмоционального интеллекта у студентов, являются:

– усиление способности молодого педагога к инновациям;

– формирование субъектной позиции педагога;

– формирование способности разрабатывать инновационные инструменты — персонализированные мотивационные системы для обучающихся с различными нарушениями в развитии.

Предлагаемый подход к развитию эмоционального интеллекта всех участников образовательного процесса продуктивен, потому что:

– объединяет научные модели ЭИ с практическими задачами инклюзии;

– учитывает разнообразие потребностей детей с ОВЗ;

– снижает риски выгорания педагогов.

Повышение уровня развития эмоционального интеллекта студентов позволяет активно включать их в инновационную деятельность, формировать субъектную позицию в достижении целей в образовательных организациях. Высокий эмоциональный интеллект выпускников обеспечит положительные эффекты в достижении корпоративных и личных целей, в повышении качества управленческих решений и во взаимодействии всех участников образовательных отношений [9].

Эмоциональный интеллект как способность понимать и управлять своими эмоциями, а также распознавать и влиять на эмоции других, становится ключевым фактором успешной адаптации студентов к требованиям инновационной среды. Развитие эмоционального интеллекта способствует формированию у студентов уверенности в себе, умения эффективно общаться и сотрудничать, а также способности к саморегуляции и принятию взвешенных решений в сложных ситуациях.

Инновационная деятельность требует от студентов не только знаний и навыков, но и умения адаптироваться к изменениям, проявлять креативность и инициативу. Эмоциональный интеллект позволяет студентам эффективно управлять своим эмоциональным состоянием, справляться со стрессом и неудачами, а также поддерживать позитивный настрой, необходимый для достижения поставленных целей.

Формирование субъектной позиции в достижении образовательных целей предполагает активное участие студентов в процессе обучения, их готовность брать на себя ответственность за результаты своей деятельности и проявлять инициативу в решении возникающих проблем. Эмоциональный интеллект способствует развитию у студентов уверенности в своих силах, умения анализировать свои сильные и слабые стороны, а также способности к самомотивации и самоконтролю.

Таким образом, повышение уровня развития эмоционального интеллекта студентов является важным фактором успешной интеграции в инновационную деятельность и формирования субъектной позиции в достижении образовательных целей. Образовательные организации должны уделять особое внимание развитию эмоционального интеллекта студентов, используя различные методы и технологии, такие как тренинги, семинары, деловые игры и другие формы активного обучения.

Перспективы дальнейших исследований могут включать:

– долгосрочный мониторинг влияния развития эмоционального интеллекта на профессиональную адаптацию специалистов, занимающихся обучением, воспитанием и сопровождением лиц с особенностями физического и психического развития;

– внедрение курса по развитию эмоционального интеллекта в содержание образовательных программ по направлению подготовки «Специальное (дефектологическое) образование»;

– разработку дифференцированных программ с учетом специфики различных педагогических специальностей.

В заключении хотелось еще раз подчеркнуть, что развитие эмоционального интеллекта является неотъемлемой частью профессиональной компетентности современного педагога. Это не просто «мягкий навык», а ключевой фактор, определяющий эффективность обучения, качество взаимоотношений с учениками и коллегами, а также устойчивость к стрессу и эмоциональному выгоранию. Инвестиции в развитие эмоционального интеллекта педагогов — это инвестиции в будущее образования, в создание более гуманной, эффективной и вдохновляющей образовательной среды. Педагоги, обладающие высоким уровнем эмоционального интеллекта, способны не только передавать знания, но и воспитывать эмоционально зрелых, уверенных в себе и успешных личностей, готовых к вызовам современного мира. Поэтому, развитие эмоционального интеллекта должно стать приоритетной задачей для образовательных учреждений и самих педагогов, стремящихся к профессиональному росту и самосовершенствованию. Внедрение программ развития эмоционального интеллекта, создание поддерживающей среды и поощрение самоанализа и рефлексии — это шаги, которые помогут педагогам раскрыть свой потенциал и стать настоящими лидерами в образовании. В конечном итоге, развитие эмоционального интеллекта педагога — это вклад в создание более счастливого и гармоничного общества.

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Э.В. Кулешова, М.В. Зинченко

Педагогтың кәсіби құзыреттілігінің факторы ретінде эмоционалдық интеллекті дамыту

Мақалада педагогтардың, соның ішінде жаңадан бастаушылардың, сондай-ақ мамандыққа көмектесуші мамандардың кәсіби құзыреттілік құрылымында эмоционалды интеллектің дағдыларын дамытудың маңыздылығының негіздемесі келтірілген. Авторлар осы саладағы халықаралық сарапшылар әзірлеген эмоционалдық интеллекті дамыту бағдарламасын жүзеге асыру тәжірибесімен, нақты міндетке бейімделген — түзету мектеп-интернатында тиімді тәлімгерлікті жүзеге асыру, білім беру ұйымындағы жас, жаңадан қабылданған мұғалімдерге және басқа да қызметкерлерге арналған тәлімгерлік жүйесіне инновациялық көзқарас болып табылатындығымен таныстырады. Бағдарлама осы құрылым бойынша ғылыми әдебиеттерді, эмоционалдық интеллекті зерттеудің негізгі теориялық тәсілдерін, сондай-ақ оның құрылымдық құрамдас бөліктерін, оның ішінде сәйкестендіру қабілеттерін қамтитын, өзінің эмоционалдық күйлерін де, басқа адамдардың эмоцияларын да түсіну және басқару қабілетін талдау негізінде әзірленді. Эмоционалды интеллекті дамыту бағдарламасын қолдану конкурстық сынақтар кезінде педагогикалық тәлімгерлік саласындағы кәсіби қоғамдастық бағалағандай, дәлелденген тиімділікті көрсетеді. Материал білім беру ұйымдары үшін тәлімгерлік үлгілерін әзірлеушілерге арналған. Болашақта педагогтардың эмоционалдық интеллект деңгейін дамытуға бағытталған бұл іс-әрекеттер жүйесін психологтар мен педагогтар әртүрлі дамуында ауытқуы бар тұлғалармен жұмыс істейтін мамандардың жеке кәсіби құзыреттілігін арттыру үшін пайдалана алады.

Кілт сөздер: эмоционалды интеллекті дамыту тьюторы, мектептегі тәлімгерлік жүйесі, эмоционалдық интеллект, педагогтың кәсіби жоғары құзыреттіліктері, педагогикалық тәлімгерлік, сараптамалық бағалау, кәсіби даму.

E.V. Kuleshova, M.V. Zinchenko

Development of Emotional Intelligence as a Component of Professional Competence for Educators and Helping Professionals

This article substantiates the importance of developing emotional intelligence skills as part of professional competencies for educators, including novice teachers and helping professionals. The authors presented an implementation case study of an emotional intelligence development program created by internationally recognized experts in this field. The program was specifically adapted for effective mentoring in a special need boarding school, representing an innovative approach to mentoring newly hired teachers and staff in educational institutions. The program was developed through analysis of scientific literature on emotional intelligence constructs, key theoretical approaches to studying emotional intelligence, and its structural components. These components include abilities to identify, understand, and manage both one's own emotional states and those of others. The applied emotional intelligence development program has demonstrated proven effectiveness, as evaluated by the professional mentoring community during competitive assessments. This material is addressed to developers of mentoring models in educational institutions. Prospectively, this system of measures aimed at developing educators' emotional intelligence levels could be utilized by psychologists and instructors to enhance the professional competencies of specialists working with individuals having various developmental disorders.

Keywords: emotionally Intelligent Leader, pedagogical mentoring / tutor mentoring, emotional intelligence, extraprofessional teacher competencies, professional development.

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Exploring current thematic and methodological patterns in STEAM education research

Science, Technology, Engineering, Arts, and Mathematics (STEAM) is a recent educational strategy that proposes interdisciplinary teaching, encouraging innovation and economic growth. However, at the stake of this field development, there is a lack of research exploring the recent state of STEAM education research approaches. Therefore, this study aimed to explore the thematic and methodological patterns of recent STEAM education research, and for this purpose performed an in-depth PRISMA-guided systematic literature and content analysis of 20 manuscripts published between 2019 and 2024 in the Taylor & Francis and Emerald databases. The study noticed that research on STEAM education has increased in the past two years, and the qualitative method was the most frequently utilized research design; students and teachers were the primary research participants; however, the experts' and policymakers' perceptions of STEAM education have received little attention. Findings also revealed three categories of themes in current STEAM education research: 1) encouraging meaningful STEAM learning experiences for students, 2) teacher education and 3) understanding STEAM education as a field that requires further in-depth study of its processes. Implications were provided to advance further studies in STEAM education research.

Keywords: STEAM, education, research, patterns, PRISMA, content analysis, systematic analysis, literature review.

Introduction

STEAM is a latest educational approach that advocates integrated teaching of science, technology, engineering, arts, and math (Rodrigues-Silva & Alsina, 2023) [1]. In 2013 the US adopted a resolution "that adding Art and Design into Federal programs that target the Science, Technology, Engineering, and Mathematics (STEM) fields encourages innovation and economic growth in the United States" (US Government Publishing Office, 2013:1) [2]. Since that time STEAM has acquired its significance in educational discourse. In particular, the review of empirical studies suggests that the research on STEAM education has progressed within the last ten years. Studies emphasize specific aspects and issues in STEAM education. For example, Bequette and Bequette (2012) [3] believe that blending arts and science may lead to a synergistic interaction and increased student engagement. The case study conducted by Henriksen (2014) [4], who interviewed the most successful teachers to explore their creative teaching techniques, showed that arts-based education enhances enthusiasm, involvement, and successful learning in STEM disciplines and enables students to get superior outcomes.

Additionally, Land (2013) [5] suggests that STEAM education could promote communication and collaboration among students. Furthermore, researchers like Perignat and Katz-Buonincontro (2019) [6] highlight that STEAM programs increase the involvement of females and minorities. Another study done by Yakman and Lee (2012) [7] confirms that STEAM by teaching students on cognitive skills needed to be adaptive lifelong learners helps prepare children to comprehend the changes they will experience in their lives. However, at the high stake of this field development, there are lack of studies exploring the current state of existing STEAM education research approaches, purposes, and thematic focus. Such an overview may give an expanded assessment of evidence for stakeholders, practitioners, and scholars, as well as allow them to study patterns and changes in research over time (Polanin & Dell, 2017) [8]. Thus, this research aims to answer the following research question: What are the recent thematic and methodological patterns in STEAM education research? To answer this question, the study first determines the frequency of publications in the previous five years, the range of journals that issue STEAM education research, and the allocation of papers by design of the study, respondents, research goal, and conceptual focus.

The literature reports STEAM education research has progressed within the last decade. Studies focus on specific aspects and issues in STEAM education, such as conceptualizing and defining the term (Perignat

& Katz-Buonincontro, 2018; Rodrigues-Silva & Alsina, 2023) [6], [1], discussing STEAM education's role in nurturing early childhood education (Wahyuningsih et al., 2020) [10], enhancing student creativity (Aguilera & Ortiz-Revilla, 2021) [11], encouraging teacher professional development (Monkeviciene et al., 2020) [12], digital competencies for sustainable innovations and computational pedagogy (Deák & Kumar, 2024; Hyun & Park, 2020; Psycharis, 2018) [13], [14], [15]. Some researchers attempted to investigate advancements in STEAM research; and for this purpose, employed bibliometric and systematic reviews. For example, Pahmi et al. (2022:93) [16] did a bibliometric review of 35 manuscripts published between 2012 and 2021. The study found STEAM education is closely related to the project-based learning method, and significantly enhances problem-solving (Pahmi et al., 2022) [16]. Santi et al., (2021) [17] investigated patterns of STEAM in science education and conducted a bibliometric mapping of literature. They examined 30 Scopus papers from 25 prominent journals dated from 2013–2020. Study findings indicated that South Korea is emerging as the most frequently published country, and that such themes as STEAM education, engineering education, education computers, and students are the most commonly explored subjects by researchers (Santi et al., 2021) [17]. Similarly, Marín-Marín et al. (2021) [18] undertook a study to assess the progress of STEAM-EDU in scientific publications. The concept STEAM was reviewed in the Web of Science database utilizing the WoS programs. The research methodology employed in the paper was bibliometric. They conducted a co-word analysis of 1116 works published between 2006 and 2020 (Marín-Marín et al., 2021:1) [18]. Findings suggest STEAM-EDU research follows an established pattern, although new fields of inquiry are emerging. In contrast to Santi et al. (2021) [17], Marín-Marín et al. (2021) [18] discovered that the United States is the leading generator of publications in this field of research. J. Bazler and M. Vansickle were discovered to be the most famous researchers in the subject, having authored the most manuscripts (14 each) in STEAMEDU study (Marín-Marín et al., 2021:16-17) [18]. In addition, STEAM research investigates gender inequalities, its impact on diverse populations, student skill development, and teacher preparation for STEAM-based teaching and learning. Furthermore, Nurdiyanso et al., (2023) [19] analyzed 9 publications extracted from Scopus published between 2013 and 2023 applying meta-analysis. This review discovered that such factors as instructor and student attitudes, and educating talent influence STEAM education. Additionally, findings demonstrated positive STEAM learning outcomes at elementary, junior high, and high school levels of education (Nurdiyanso et al., 2023) [19]. In particular, the study confirms a correlation between STEAM education and improved thinking skills among Indonesian pupils. A paper by Zhao (2022) [20] explored research trends in both STEAM and STEM education and reviewed 495 papers published in 16 top journals from 2016 to 2021. The findings reveal a significant rise in STEM education research since 2016. Although STEAM education has fewer publications than STEM, it is rising more rapidly than STEM education. STEAM/STEM goals, motivations, evaluation, policy, curriculum, assessment, teaching, teacher education, and learning are some of the most commonly explored themes (Zhao, 2022:162) [20].

Prior literature is valuable for identifying the overall research trends, but these studies are limited in shedding light on the aims of STEAM research, and its recent overall thematic and methodological patterns. They are also limited in the range of publications, databases, and timeline included for the analysis.

Therefore, to fill the existing gap this study conducts a systematic review of the international empirical literature and explores recent STEAM education research. For this purpose, the study identifies the research purpose, methodological patterns, and thematic focus of recent STEAM education research. This might be useful in proposing valuable outlooks and perspectives for further STEAM research.

Methods and materials

Publications were selected following the PRISMA principles methodology (Page et al., 2021) (see Fig. 1) [9]. To the best knowledge of the author, there is a lack of studies that investigated STEAM education research within the last five years that applied PRISMA methodology to identify the research purpose and methodological and thematic patterns. The data were collected from Taylor & Francis and Emerald databases. Selected research included peer-reviewed publications and high-quality empirical journal articles published in the English language within the last five years from 2019 to 2024. The acronym STEAM (Science, Technology, Engineering, Arts, and Mathematics) was employed as the concept in search of publications' titles, abstracts, and keywords. Each database was run using the STEAM concept in the advanced search. The main subject for STEAM research analysis was education, which was employed as a term in the search filter (see Table 1).
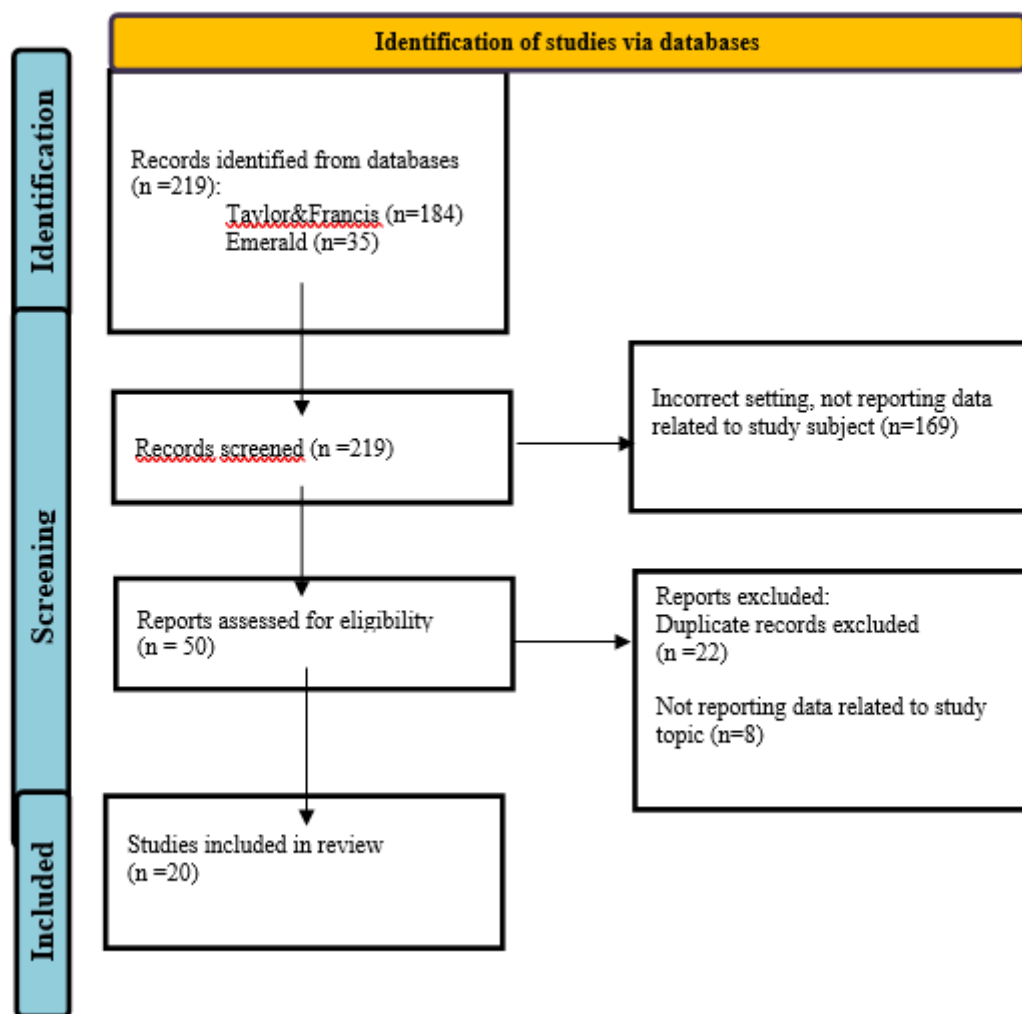
Figure 1. PRISMA flow diagram compliant with PRISMA 2020 statement (Page et al., 2021) [9]

Overall, 219 records were identified from two databases. Specifically, in the total of 59 articles were found where the concept appeared in the articles' title, 67 articles in the abstract, and 58 in keywords; totaling 184 articles extracted from the Taylor & Francis database. The same principle was employed for the Emerald database search: 9 articles were found with the STEAM concept appearing in the title, and 26 in the abstract, totaling 35 identified records. As a result of the records screening, abstract analysis, and assessment for eligibility, 199 articles were excluded due to incorrect seating, duplication, and not reporting data related to the study topic and subject. In total 20 papers were identified that satisfied the inclusion criteria among 219 sources and were subject to in-depth content analysis.

T a b l e 1

Inclusion and exclusion criteria

Inclusion criteria		Exclusion criteria
Dimension	Designation	Publications published until 2018

Publications from non-peer-reviewed journals and grey literature |
Year of publication	2019–2024	
Databases	Taylor & Francis (https://www.tandfonline.com/) Emerald (https://www.emerald.com/insight/)	
Types of document	Articles published in peer-reviewed journals	

Inclusion criteria		Exclusion criteria
Dimension	Designation	Editorials, book reviews, conference proceedings, expert briefings
Subject	Education (article demonstrates use of STEAM in formal education in practice and/or theory)	
Search words	STEAM (Science, Technology, Engineering, Arts, and Mathematics; concept appears in the article's title, abstract, and keywords)	Publications published not in English, and non-education-related subjects
Language	English	

Results and discussion

The study's goal was to explore the thematic and methodological patterns of STEAM education research. For this reason, a PRISMA-guided systematic literature review of 20 manuscripts published between 2019 and 2024 in the Taylor & Francis and Emerald databases was performed. Table 2 shows the list of articles that were selected for in-depth analysis. Figure 2 shows the frequency of publications by year and an increase in STEAM education-related studies in 2023 and 2024 (n=8; n=4) compared to earlier years. Similarly, Zhao (2022) [20] who explored research trends in STEAM and STEM education found that research on STEAM is rising rapidly.

T a b l e   2

Sampled studies

ID	Studies (1–10)	ID	Studies (11–20)
S1	Bertrand and Namukasa (2023) [21]	S11	Ben-Horin et al. (2023) [31]
S2	Chen et al. (2019) [22]	S12	Salmi et al. (2023) [32]
S3	Gonzalez (2022) [23]	S13	Perales and Aróstegui (2024) [33]
S4	Bertrand and Namukasa (2020) [24]	S14	Magnusson and Bäckman (2023) [34]
S5	An (2020) [25]	S15	Loumpourdi (2024) [35]
S6	Romero-Ariza et al. (2021) [26]	S16	Yunianto et al. (2024) [36]
S7	Belbase et al. (2022) [27]	S17	Roughley et al. (2019) [37]
S8	Santos et al. (2023) [28]	S18	Hilppö and Stevens (2023) [38]
S9	Laksmiwati et al. (2024) [29]	S19	Ross et al. (2023) [39]
S10	Malagrida et al. (2022) [30]	S20	Laksmiwati et al. (2023) [40]
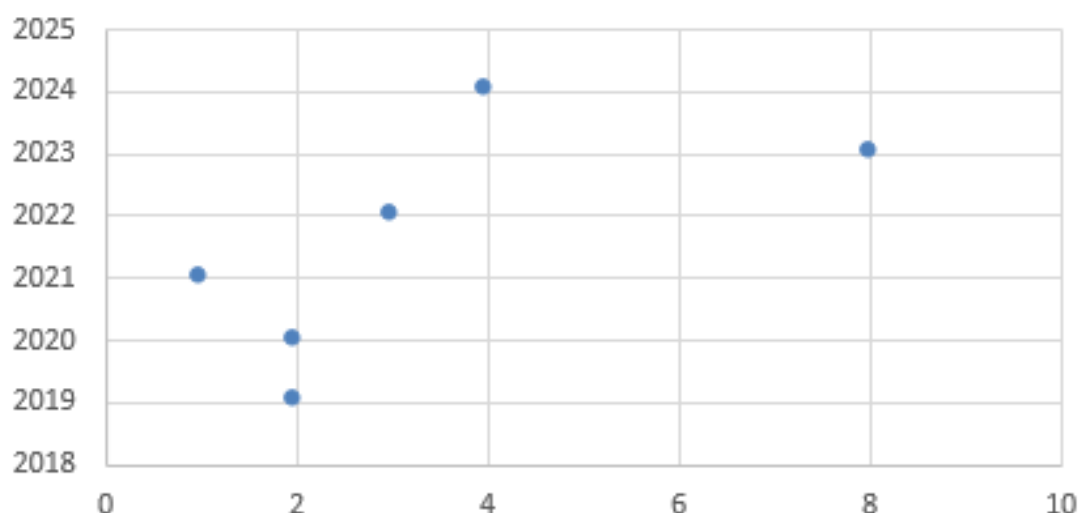
Figure 2. The publications' frequency

T a b l e 3

A total of 16 selected journals with STEAM education studies

No	Journal name	# of publications
1	Journal of Research in Innovative Teaching & Learning	4
2	Cogent Education	2
3	Asian Association of Open Universities Journal	1
4	Journal for the Study of Education and Development	1
5	International Journal of Mathematical Education in Science and Technology	1
6	Educational Media International	1
7	Asia Pacific Journal of Education	1
8	Research in Science & Technological Education	1
9	Interactive Learning Environments	1
10	Arts Education Policy Review	1
11	Early Years	1
12	Journal of Vocational Education & Training	1
13	Science Activities	1
14	Higher Education Pedagogies	1
15	Education 3–13	1
16	Environmental Education Research	1

Table 3 shows a list of publications featuring STEAM education research. Table 4 illustrates the distribution of publications by study design, and suggests that qualitative study design was the most frequently employed research approach by scholars (60 %), followed by the mixed and multi-methods approach (25 %). Among them, the quantitative and other designs were used least frequently (15 %). This suggests that there is a lack of quantitatively examined STEAM education research. In addition, the study reveals that various types of qualitative methods were employed; qualitative case studies, ethnography, narrative analysis, and

literature reviews were the most common methods applied by the researchers. One explanation for this could be the reason that qualitative methods are useful in exploring recent or less researched areas of research to build fundamental knowledge, where previous knowledge is less available (Aspers & Corte, 2019; Levitt et al., 2018) [41], [42].

T a b l e 4

The distribution of publications by study design (2019–2024)

Study design	Methods	%	Study ID
Mixed and mutli-methods (f=5)	Case study: teaching design, process analysis, self-evaluation and peer evaluation forms	25	S2
	Case study: longitudinal analysis, qualitative reflections		S3
	Pre-and post-surveys, open-ended questions with thematic and tasks analysis		S5
	Quasi-experimental pre-test/post-test design, qualitative reflections		S6
	Design-based research: teacher's workshops, pre-test/post-test surveys, classroom observations, reflection notes		S8
Quantitative (f=2)	Quasi-experimental: surveys	10	S12
	Workshops, surveys		S9
Qualitative (f=12): Empirical (f=7) Desk research (f=5)	Qualitative case study: interviews, lesson observations, document analysis	60	S1
	Qualitative case study: observations, interviews, document analysis		S4
	Ethnography: studio observations, semi-structured interviews		S18
	Interviews, narrative analysis		S19
	Exploratory case study: semi-structured interviews, document analysis		S20
	Educational-design research: lessons design+ modelling+reflections		S16
	Literature review, focus group discussions		S10
	Literature review, document analysis		S7
	Literature review		S11
	Literature review		S13
	Literature review (meta-study)		S14
	Literature review		S15
Other (f=1)	Practice-based research: studio practice, student projects, workshops, modules, roundtable	5	S17

Notably, students and teachers were the research participants in most studies (36 %). 29 % of studies were explored solely from teachers' and 14 % from students' perspectives. Students, teachers, and directors participated jointly in 14 % of STEAM education research. Interestingly, only one study jointly involved the views of practitioners, experts, and policymakers, which implies that these stakeholders' understanding of STEAM education has been scarcely studied (see Table 5).

The distribution of publications by research participants (2019–2024)

Research participants	f	%	Study ID
Students+teachers+directors	2	14	S1, S4
Students	2	14	S3, S12
Teachers	4	29	S5, S6, S9, S10
Students+teachers	5	36	S2, S8, S16, S18, S19
Practitioners+experts+policymakers	1	7	S20
Total	14	100	S1, S4, S3, S12, S5, S6, S9, S10, S2, S8, S16, S18, S19, S20

Furthermore, this study reveals that there are three categories of thematic focus in STEAM research: a) meaningful STEAM learning experience for students, b) teacher education and professional development, and c) understanding STEAM education (see Table 6). In particular, results indicate that current research on STEAM education is mainly focused on understanding how to facilitate meaningful STEAM learning experiences for students (40 %). This is related to investigating scholars' pedagogical models and instructional programs for meaningful math learning, learning STEAM online, developing students' transferable, interdisciplinary, and trans-disciplinary STEAM skills, fostering students' participatory citizenship, assessing cognitive learning outcomes, integrating CT, and fostering interest-driven creativity. Next, teacher and employment education (30 %) were identified as the second category. Most studies concentrated on examining the impact of STEAM on teachers' beliefs, performance, planning of the lessons, and developing research competence realization in STEAM. Understanding STEAM education (30 %) was another category that emerged from the content analysis. Researchers within this category investigated the prospects, processes, and problems of current STEAM education. Compliant with previous research (Aguilera & Ortiz-Revilla, 2021; Monkeviciene et al., 2020) [11], [12], concentrating on students' skill development and teacher preparation was found as a prevailing focus among STEAM education scholars. However, this research reveals that in addition to teachers' and students' knowledge development, exploring STEAM education as an emerging field (processes, principles, and priorities) is another topic that interests the research community.

Review results by research purpose and thematic focus (2019–2024)

Thematic focus	Sub-themes	Research purpose	f	%	Study ID	Year
Meaningful STEAM learning experience for students	Learning of mathematics	To propose and investigate a pedagogical model for meaningful math learning	8	40	S1	2023
	Learning STEAM online	To provide references for teachers			S2	2019
	Developing transferable, interdisciplinary, trans-disciplinary STEAM skills	To describe how synergies between research and business plan competitions can promote student inclusion			S3	2022
		To understand the STEAM instructional programs by nonprofit organizations			S4	2020
	Fostering students' participatory citizenship	To understand how STEAM interdisciplinary activities may promote students' participatory citizenship			S8	2023

Thematic focus	Sub-themes	Research purpose	f	%	Study ID	Year
Meaningful STEAM learning experience for students	Assessing cognitive learning outcome	To identify influential variables that promote cognitive learning	8	40	S12	2023
	Integrating CT	To identify instances of learners' creative actions			S16	2024
	Fostering interest-driven creativity	To theorize and foster interest-driven engagement and creativity			S18	2023
Teacher education and professional development	Pre-service teachers' disposition	To examine the impact of STEAM on pre-service teachers	6	30	S5	2020
	Secondary education teacher professional development	To understand the effect of STEAM courses on teachers' beliefs, performance			S6	2021
	Teacher professional development	To study how the iterative design affected the planning of the lessons			S9	2024
		To develop "responsible research and innovation" implementation in STEAM			S10	2022
		To model a meta-approach to feature arts in STEAM			S14	2023
	Employees education	To investigate skill advancement for 4IR manufacturing employees			S15	2024
Understanding STEAM education	Prospects, priorities, processes, pedagogic principles and problems	To learn the current state of STEAM education	6	30	S7	2022
		To formulate an integrated set of pedagogic principles in STEAM education			S11	2023
		To review the necessity of combining STEAM with arts in school curricula			S13	2024
		To explain the case of the MA Art in Science program			S17	2019
		To study the experience of STEAM-related climate change education projects in rural Wales			S19	2023
		To investigate how STEAM education is put into action in Indonesia			S20	2023

Conclusion

This systematic review aimed to identify and categorize the methodological and thematic patterns of STEAM education research within the last 5 years. The research included an in-depth content analysis of peer-reviewed publications published in the English language from 2019 to 2024 that were selected according to PRISMA methodology principles. Furthermore, a qualitative study design was the most frequently employed research approach by scholars. The study revealed that students and teachers were the main research participants in most studies; however, practitioners, experts and policymakers' perceptions of

STEAM education have been scarcely studied. This study has also revealed that there were three categories of themes in STEAM research: a) encouraging meaningful STEAM learning experiences for students, b) teacher education and professional development, and c) understanding STEAM education as a field that requires further in-depth study of its processes, principles, priorities, opportunities, and challenges.

The perspectives for further STEAM education research could be to diversify research approaches in studying the field and employ a variety of methods, including quantitative and mixed-methods study designs. Studying STEAM education from the lens of different stakeholders, such as managers, practitioners, and policymakers, and comparing these with teachers' and students' perspectives could enrich further study findings and bring more diversified views. It is hoped that future research in STEAM education will keep growing, therefore it would be useful to evaluate patterns in the next 10 years.

This review focused only on journal articles with full access published in the English language based on two databases, therefore further research could survey editorials, book reviews, conference proceedings, and expert briefings, and enlarge the scope of research by including studies available in other languages and sources.

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Д.М. Орынбасарова

STEAM-білім беру саласындағы зерттеулердің тақырыптық-әдістемелік бағыттарына жүйелі шолу

Ғылым, технология, инженерия, өнер және математика (STEAM) — инновация мен экономикалық өсуді ынталандыратын пәнаралық оқытуды ұсынатын соңғы білім беру стратегиясы. Алайда, осы саладағы зерттеулердің дамуына қарамастан, STEAM-білім берудің зерттеу тәсілдерінің, мақсаттары мен тақырыптық бағыттарының соңғы жағдайын зерттейтін зерттеулердің жетіспеушілігі байқалады. Сондықтан бұл зерттеу STEAM-білім берудегі соңғы зерттеулердің тақырыптық және әдістемелік бағыттарын зерттеуге бағытталған және осы мақсатта Taylor & Francis және Emerald дереккорларында 2019-2024 жылдар аралығында жарияланған 20 зерттеу мақаласының PRISMA әдістемелерін пайдалана отырып, әдебиеттерге терең жүйелі шолу жасалды. Зерттеу соңғы екі жылда STEAM-білім беру зерттеулерінің артқанын көрсетті; сапалық тәсіл ең жиі қолданылатын әдіс; студенттер мен оқытушылар зерттеудің негізгі қатысушылары болды, дегенмен сарапшылар мен саясаткерлердің STEAM-білімін қабылдауы, ол жайлы ойлары толық зерттелмеген. Нәтижелер сонымен қатар STEAM-білім берудегі ағымдағы зерттеулерде тақырыптардың үш санаты бар екенін көрсетеді: 1) студенттерге арналған STEAM-оқыту тәжірибесін зерттеу, 2) педагогикалық білім және 3) STEAM-білім беруді оның процестерін, принциптерін, басымдықтары мен мәселелерін одан әрі терең зерттеуді қажет ететін сала ретінде түсіну. Автор STEAM-білім беру саласындағы қосымша зерттеулерді ілгерілету үшін тұжырымдар келтірген.

Кілт сөздер: STEAM, білім беру, жүйелі шолу, контенттік талдау, PRISMA, бағыт, зерттеу, әдебиетке шолу.

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Тематические и методологические направления исследований в области STEAM-образования: систематический обзор литературы

Наука, технологии, инженерия, искусство и математика (STEAM) — это недавняя образовательная стратегия, которая предлагает междисциплинарное обучение, поощряющее инновации и экономический рост. Однако, несмотря на развитие исследований в этой области, наблюдается недостаток работ, изучающих недавнее состояние исследовательских подходов, целей и тематической направленности образования STEAM. Поэтому данное исследование было направлено на изучение тематических и методологических направлений недавних исследований образования STEAM, и с этой целью был проведен углубленный систематический обзор литературы с использованием методологий PRISMA, охватывающий 20 исследовательских статей, опубликованных в период с 2019 по 2024 год в базах данных Taylor & Francis и Emerald. Анализ показал, что исследования образования STEAM увеличились за последние два года; качественный подход был наиболее часто используемым методом; студенты и преподаватели были основными участниками исследования, хотя восприятие образования STEAM экспертами и политиками почти не изучалось. Результаты также показали, что в текущих исследованиях STEAM-образования есть три категории тем: 1) изучение опыта обучения STEAM для студентов, 2) педагогическое образование и повышение квалификаций и 3) понимание STEAM-образования как области, требующей дальнейшего глубокого изучения его процессов, принципов, приоритетов и проблем. Сформулированы выводы для продвижения дальнейших исследований в области STEAM-образования.

Ключевые слова: STEAM, образование, систематический анализ, контентный анализ, PRISMA, направления, исследование, обзор литературы.

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Inequity by Design: How Bell Curve Grading Undermines Student Success

The Bell Curve approach is a method of assessment that compares students to one another and grades them by following a normal distribution pattern. Such a model entails a small number of high achievers, a large group clustered around the average, and a minority with low scores or failing. Despite widespread criticisms, the Bell Curve approach is still used nowadays in higher education worldwide due to its expected capacity to prevent grade inflation, differentiate student abilities, and foster a competitive framework. Through a qualitative, argument-driven analysis, this study highlights the Bell Curve system's flaws by addressing its misalignment with principles of educational equity, negative impact on students' motivation, and unintended promotion of mediocrity. The analysis further reveals the system's limitations, particularly when applied to small cohorts or across varying academic levels, and debunks some of the myths related to the assumed values of the Bell Curve grading. In light of the main findings, alternative approaches — such as criterion-referenced grading, mastery-based learning, and formative assessment strategies — seem more effective in supporting fair, meaningful, and equitable assessments in today's educational landscape.

Keywords: Bell Curve, criterion-referenced grading, formative assessment, higher education, inequity, mastery-based learning, mediocrity, normal distribution.

Introduction

The Bell Curve, also known as Gaussian curve, was firstly conceived in the eighteenth century as a model to address mathematical issues. It is grounded in the assumption that most natural phenomenon and human traits, such as intelligence or height, follow a normal distribution when examined from a statistical perspective (Fendler and Muzaffar, 2008). Visually, this distribution resembles a bell-shaped curve, with values centered around the mean and frequencies decreasing symmetrically as values diverge from the center.

In the mid-20th century, this model gained traction in academia as a method to differentiate student performance by embracing the hypothesis that only a small fraction of students might attain high or low scores, while the others would naturally cluster around the average. (Cohen, 2018). This approach, therefore, enforces a normal distribution that ostensibly prevents cases of grade inflation or extended failures by limiting the number of students who can attain the highest or lowest marks (Curwin, 2014).

In the last decades, Bell Curve grading has faced increasing criticisms, mostly due to its arbitrary distributions of marks that neglects students' background and/or just ignore the above-average capacity of certain groups. And yet, this approach is still used and promoted in a number of higher education institutions globally. Indeed, addressing how such a model directly influences student learning, well-being, and the fairness of academic assessment keeps a central relevance in the academic world.

This article critically examines the Bell Curve approach and underlines its negative impact in the educational learning process. The key research questions are: what are the current benefits and limits of the Bell Curve approach in higher education? How other methods of assessment could compensate such weaknesses? The main goal is to demonstrate how this model of grading perpetuates inequity and promotes mediocrity by rewarding average performance over true academic achievement. Alternative methods of assessment seem, on the contrary, to offer better conditions for both the learning process and personal development.

Structurally, to begin with, this paper provides a theoretical framework of analysis by drawing from educational psychology, assessment theory, and critical pedagogy. Next, it explains the qualitative research methodology chosen by the author to identify and critically examine the underlying assumptions and effects of Bell Curve grading system in education. Then, it proceeds with the analysis and discussion of results. First, it examines key criticisms of Bell Curve grading, with a focus on its impact on equity, motivation, and academic outcomes, as well as issues arising from its misapplication in small groups and neglect of devel-

opmental progress. Second, it considers why some researchers continue to support the Bell Curve grading system in higher education and tries to rebut such arguments. Finally, this study proposes a shift toward alternative grading models — such as criterion-referenced grading (Popham, 2011), mastery-based learning models (Guskey and Link, 2019), and formative assessment practices (Black and Wiliam, 1998) — which seems to better align with the principles of educational equity, intrinsic motivation, and growth potential.

Methods and Materials

From a theoretical perspective, this study explores three fundamental principles that boost quality in higher education contexts: educational equity, intrinsic motivation, and growth potential. Arguably, these principles serve as cornerstones for fostering inclusive, engaging, and forward-thinking learning environments in higher education.

The concept of educational equity emphasizes fair and individualized access to academic opportunities and resources. Equity theorists argue that a "one-size-fits-all" approach fails to account for individual learning differences and social inequities among students. As a result, a standardized grading often disadvantages those who may already be marginalized within academic settings (Cohen, 2018). Differently, assessments that are adaptive and sensitive to individual progress and achievements, rather than comparative rankings, might promote a more inclusive learning environment.

According to Deci and Ryan's Self-Determination Theory (2000), learning environments that promote autonomy, competence, and relatedness enhance intrinsic motivation, which is essential for sustained academic engagement. In other terms, students best operate in an educational environment in which the feel themselves effective, autonomous and able to develop meaningful connections. Grading practices that prioritize competition and restrict high achievement to a small number of students can subvert these motivational factors by creating a competitive rather than cooperative framework. In due course, this restrictive system could discourage risk-taking, undermine motivation and lead students to focus solely on securing an average standing rather than striving for excellence.

In the view of Maslow (1968) and Bloom (1976), educational systems should prioritize helping students reach their full potential by fostering an environment that meets essential psychological needs, supports growth, and emphasizes mastery of skills. This requires adopting models that build on foundational knowledge and progress through increasingly complex cognitive skills, while also creating a collaborative culture where students support each other, thus enhancing both motivation and meaning in learning. Ultimately, the focus of education should be on fostering personal growth, fulfillment, and achievement instead of recreating a kind of state-of-nature scenario characterized by a "war" of all against all.

Methodologically, this article takes a qualitative, argument-driven approach to assess Bell Curve grading within the broader discussions of fair, effective, and equitable assessment practices. Following Creswell and Poth's (2018) framework for qualitative research and Snyder's (2019) guidelines for literature review methodology, this study utilizes a theoretical and literature-based analysis to critically examine existing perspectives. Sources were selected based on their relevance, credibility and currency by searching keywords like, for example, "Bell Curve grading," "alternative educational grading methods," and "limits of norm-referenced grading" in diverse academic databases such as Google Scholar, ResearchGate and SCOPUS. In addition, the author used two AI academic research platforms such as Elicit and Research Rabbit to ensure a comprehensive coverage of significant scientific literature.

The abstracts of the identified sources were checked by the author to assess their relevance considering the scope of this article. Selected sources were, then, analyzed through a qualitative coding approach. The identified key themes were organized into three categories: the limits of the Bell Curve grading, counterarguments supporting the model, and alternative assessment methods. This thematic organization allowed for a systematic synthesis of diverse perspectives, providing a thorough critique of Bell Curve grading and its alternatives.

On the whole, this methodological approach ensures a balanced and thorough exploration of Bell Curve grading, offering insights that contribute to ongoing debates about fairness and equity in educational assessment practices.

Results and Discussion

There are four primary arguments against the Bell Curve grading system: first, its inherent inequity; second, its detrimental effect on students' motivation; third, its promotion of mediocrity over excellence;

fourth, its flawed application. Each argument is critically examined here to show how Bell Curve grading fails to align with contemporary educational goals and standards of quality.

A central critique of Bell Curve grading is its failure to align with principles of educational equity. Bell Curve grading enforces a fixed distribution of grades, regardless of the actual understanding capacities within a group of students. Therefore, this approach requires that some students will inevitably be categorized as "below average" or "failing" even if their performance meets established learning standards. Additionally, Bell Curve grading's rigid distribution, which restricts the number of students who can receive high grades regardless of their actual achievements, could artificially position some students outside of the top mark group notwithstanding their complete accomplishment of the intended learning outcomes. This approach can, therefore, lead to unfair assessments, particularly for students from marginalized backgrounds who may face additional educational barriers (Cohen, 2018). As a result, Brookhart (2021) argues that a one-size-fits-all grading model such as the Bell Curve should be abandoned as it fails to accommodate different learning paces and does not adapt to individual student progress. Rowe and Stewart (2019) critique the Bell Curve for perpetuating a system that favors students with access to high-quality preparatory resources while disadvantaging those without such support. Likewise, Reeves (2020) suggests that Bell Curve grading can create an environment of distrust in the student-teacher relationships, as students may feel unfairly evaluated.

A second criticism is that Bell Curve grading creates a competitive atmosphere that undermines intrinsic motivation by artificially limiting the number of students that can earn high grades and pitting them against each other. It is commonly believed that this rivalry-driven system might foster anxiety, reduce students' engagement, and foster a "survival" mindset, thus undermining motivations and creating a barrier to effective learning (Roberts and Engelhard, 2021; Harackiewicz et al., 2002). A further drawback of Bell Curve grading is its detrimental effects on students' ability to develop teamwork skills. By creating a zero-sum environment that constrains the number of successful students, the Bell Curve system encourages students to focus on outperforming peers rather than engaging meaningfully with course content, ultimately detracting their attention from the learning experience (Schinske and Tanner, 2019). Hill and Kumar (2020) further extend this argument by suggesting that grading practices promoting excessive competition diminish collaborative learning and can even lead to an overemphasis on extrinsic goals, such as grades, rather than understanding, knowledge, and skills development.

A third limit of the Bell Curve grading is its promotion of mediocrity as a direct effect of its standard distribution of grades. This practice can discourage some students from striving for excellence, as only a limited number can achieve top grades, even in cases where more students have demonstrated outstanding knowledge and skills in the subject. Indeed, enforcing a Bell Curve distribution may unfairly penalize competent students in smaller or highly skilled groups. Paradoxically, in courses with struggling students, the same approach may artificially inflate the success of some of them. As a result, in the view of Krumboltz and Yeh (1996), the Bell Curve grading "sabotages" good teaching by creating a false dilemma for educators between fostering students' learning and evaluating them comparatively. A possible solution might be to foster the engagement of students in the assessment process. However, this would be only feasible once starting to "debunk the myth that normal-as-average is sacred" (Tan et al., 2020:8).

Finally, the Bell Curve grading is often applied wrongly in education. As a statistical model, Bell Curve approach is grounded on the assumption of large sample sizes where individual variations align with a normal distribution (Fendler and Muzaffar, 2008; Smyth and Bailey, 2022). However, this model is frequently applied to small groups where such distributions are less likely, thus creating artificial and unfair distinctions among students (Bailey and Smyth, 2022). For such a reason, Brookhart (2021) critiques the Bell Curve emphasizing that, without sufficient sample sizes, it produces arbitrary evaluations that do not accurately reflect effective learning. Furthermore, the Bell Curve grading ignores the fact that students' skills and knowledge typically develop from their first to final years of studying, particularly in undergraduate programs. Therefore, using the same distribution of marks across first-year and senior students disregards how academic and cognitive skills evolve, penalizing students who might have shown considerable improvements throughout their academic trajectory. (Shapiro and Blum, 2022) In this regard, Rowe and Stewart (2019) argue that criterion-based grading allows for a more accurate reflection of individual student progress and growth over time.

Table 1 sums up the main criticisms against the Bell Curve grading.

Critisms against the bell curve grading system

ARGUMENT	EXPLANATION	SUPPORTING LITERATURE
Inequity in Assessment	Bell Curve grading enforces a fixed distribution regardless of actual performance and ignoring the diversity in students' background.	Brookhart (2021); Cohen (2018); Reeves (2020); Rowe & Stewart (2019).
Detrimental Impact on Motivation and Teambuilding	Competitive grading diminishes intrinsic motivation by prioritizing student ranking over individual mastery, increasing anxiety and decreasing collaborative efforts.	Harackiewicz et al. (2002); Hill & Kumar (2020); Roberts & Engelhard (2021); Schinske & Tanner (2019).
Promotion of Mediocrity	Bell Curve grading discourages excellence, as only a limited number of students can earn top grades, regardless of cohort quality.	Krumboltz & Yeh (1996); Tan et al. (2020).
Incorrect Application in Small Groups and Neglecting Developmental Progress	Bell Curve grading is less effective in small groups, where variations do not follow a normal distribution, leading to arbitrary grade distinctions. Bell Curve grading also overlooks student progress by applying the same criteria regardless of academic level or year.	Bailey & Smyth 2022; Brookhart (2021); Shapiro & Blum (2022); Rowe & Stewart (2019)

Notwithstanding the above-mentioned criticisms, there are still some authors advocating for the use of the Bell Curve grading in higher education. A first advantage of the Bell Curve grading is that it prevents the risk of grade inflation by standardizing the distribution of marks. (Bar and Essary, 2020; Ellis, 2018) Even though such claim seems logic and reasonable at first glance, a forced distribution of grades is only a possible option to ensure rigorous standards. For instance, Hill and Kumar (2020) argue that criterion-referenced assessments uphold rigor by aligning student evaluation with transparent performance criteria rather than arbitrary comparisons. Likewise, Guskey and Link (2019) sustain that clear and reasonable intended learning outcomes are enough to prevent inflation by tying grades to mastery. Also, Roberts and Engelhard (2021) emphasize that competency-based standards ensure grades reflect effective achievement without arbitrary limits. Therefore, there are alternative methods that can deal with the potential problem of grade inflation without following a normative-grading system.

Second, Mansfield (2019) claims that Bell Curve grading clearly differentiates student abilities, providing meaningful distinctions that benefit competitive programs. Nevertheless, differentiation seems even more achievable through a method of assessment that specifically addresses knowledge and competencies rather than enforcing a fixed distribution. In this regard, Tormey and Henrichsen (2021), for example, recommend mastery-based assessments to allow students to demonstrate proficiency across dimensions, offering a fuller view of their strengths and weaknesses.

As final note, Kramer (2021) argues that Bell Curve grading fosters a competitive atmosphere that prepares students for real-world challenges. In his view, competition reflects the requirements of contemporary professional careers where performance is often compared to that of others. Introducing such an element within the educational framework might, therefore, endorse students to do their best in class. Moreover, diverse studies (Martin and Marsh, 2020; Yang and Shi, 2021) seem to support the idea that competitive environments may stimulate leadership skills by fostering qualities like resilience, strategic thinking, and adaptability. Therefore, by pushing students to compete for the top marks, the Bell Curve approach might foster students' capacity to succeed later on in a business environment.

This viewpoint offers a compelling and reasonable foundation. However, many professional environments prioritize collaborative problem-solving, emotional intelligence, and cooperative learning over direct competition. Indeed, a collaborative environment aligned with mastery-based assessments would better prepare students for the demands of a team-oriented workplace. (Shapiro and Blum, 2022) Moreover, competi-

tive dynamics can also be introduced in grading systems that do not strictly follow a norm-referenced assessment (Black and Wiliam, 2018). Various mechanisms could be used to achieve that, such as reward structures, elements of gamification, or project-based competitions. Therefore, educational environments that foster collaboration, resilience, and proficiency over isolated performance metrics may better prepare students for their future professional life by boosting both technical and interpersonal skills.

Considering its overall limitations and constrained benefits, the Bell Curve is not viewed anymore as the best option in the academic grading process. As a result, educators and researchers have proposed alternative models of assessment that prioritize individual growth and proficiency. Criterion-referenced grading, for instance, evaluates students based on their achievement of defined learning outcomes rather than relative performance (Popham, 2011). This approach is particularly suitable for small groups and ensures that grades reflect students' actual accomplishments (Smith and Harris, 2023). Diverse studies (Brookhart, 2021; Rowe and Stewart, 2019; Tormey and Henrichsen, 2021) noted how the criterion-referenced grading fosters inclusivity by focusing on individual progress and provides a fairer assessment regardless of class size.

Alternatively, mastery-based grading emphasizes individual progress, allowing students to demonstrate learning over time. In other term, the mechanism of assessment is focused on the specific improvements of the addressed individual. This model is particularly beneficial in settings with varying stages of learning, as it accommodates the unique trajectories of first-year and senior students alike. Guskey and Link (2019) advocate for mastery-based grading as it supports deeper learning and is adaptable to the developmental stages of students. Similarly, Schinske and Tanner (2019) argue that mastery-based models promote a growth mindset, where students see progress as an ongoing process.

A further option is formative assessment, which offers ongoing feedback to students so that they might suddenly intervene on their weaknesses and improve them. This method supports the learning process without the stress of high-stakes competition as the assessments are not typically graded. Black and Wiliam (1998) argue that formative assessments foster a growth-oriented mindset by enabling students to recognize areas for improvement. Shapiro and Blum (2022) further suggest that formative assessments promote resilience and inclusion, helping all students pursue high achievement without the constraints of forced competition. As cons, this model can be hardly integrated in a system aimed to produce a final evaluation of the students.

Table 2 compares the diverse methods of rating examined in this article.

Table 2

Comparative analysis of diverse grading approaches

GRADING APPROACH	CORE FEATURES	PRIMARY GOAL	ADVANTAGES	DISADVANTAGES
Bell Curve Grading	Grades are distributed along a normal curve, assigning fixed percentages for high, average, and low scores.	Differentiate students by performance relative to peers.	Maintains a clear ranking of students; may prevent grade inflation; fosters a competitive atmosphere.	Can demotivate students; promotes competition over mastery and/or collaboration; may unfairly label capable students as "average"; can be applied incorrectly.
Criterion-Referenced Grading	Students are graded based on whether they meet specific criteria or learning outcomes.	Assess each student against an absolute standard.	Encourages mastery of content; provides clarity in expectations and feedback.	Requires well-defined criteria; may be challenging to implement consistently across diverse topics.
Mastery-Based Grading	Students must demonstrate mastery of specific competencies or skills.	Ensure all students reach a standard level of competency.	Fosters deep understanding; reduces competition; allows for individualized pacing and feedback.	Can be time-consuming for instructors; requires significant adjustments to traditional grading systems.

GRADING APPROACH	CORE FEATURES	PRIMARY GOAL	ADVANTAGES	DISADVANTAGES
Formative Assessment	Students get ongoing feedback throughout the learning process.	Support and enhance a pressure-free learning process through feedback.	Encourages reflection, self-assessment, and improvement; reduces grade anxiety.	Can be challenging to track progresses; can result unclear for students used to typical grades.

Conclusion

The implementation of Bell Curve grading demonstrates many limitations. The fundamental problem resides in its design, which intrinsically restricts student performance and cultivates an environment where mediocrity, rather than success, prevails. As a result, the Bell Curve may unintentionally undermine students' motivations and hinder collaborative learning results. Moreover, the use of Bell Curve grading frequently overlooks essential contextual elements, such class size, students' academic proficiency, and the diversity of educational backgrounds. These variables can substantially distort the mark distribution, rendering Bell Curve grading both ineffective and ethically dubious.

In light of these findings, educational institutions should move beyond norm-referenced grading practices and consider the Bell Curve solely as a general reference model for understanding mark distribution trends in large datasets. Differently, alternative assessment approaches, including criterion-referenced and mastery-based grading as well as formative assessment, can yield more precise representations of student comprehension and development, thus aligning better with the diverse needs of modern education while maintaining high academic standards.

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А. Фриджерио

Теңсіздік тұжырымдамасы: қоңырау тәрізді қисыққа сәйкес бағалау студенттердің үлгерімін қалай әлсіретеді

Қоңырау тәрізді қисық — бұл студенттерді бір-бірімен салыстырып, олардың бағаларын қалыпты таралу үлгісіне сәйкес анықтайтын бағалау әдісі. Мұндай үлгі аздаған үздіктерді, орташа бағаларға шоғырланған негізгі топты және төмен бағаларға немесе қанағаттанарлықсыз нәтижелерге ие шағын топты болжайды. Кең таралған сынға қарамастан, қоңырау тәрізді қисық жоғары білім беру саласында әлі де жиі қолданылады. Бұл әдіс бағалардың инфляциясын болдырмау, студенттердің қабілеттерін саралау және бәсекелестік орта қалыптастыру қабілетімен негізделеді. Сапалы әрі дәлелді талдау арқылы бұл зерттеу қоңырау тәрізді қисық жүйесінің білім берудегі теңдік принциптеріне сәйкес келмейтінін, яғни студенттердің ішкі мотивациясына теріс әсерін және бағаларды тұрақты үлестіру арқылы орташа мәнді енгізуін көрсетеді. Талдау жүйенің шектеулерін одан әрі ашады, әсіресе шағын топтарға немесе әртүрлі академиялық деңгейлерге қолданылғанда және қоңырау қисығы бойынша бағалаудың болжамды артықшылығына байланысты кейбір мифтерді жоққа шығарады. Негізгі нәтижелерге сүйене отырып, критерийге негізделген бағалау, шеберлікке негізделген оқыту және қалыптастырушы бағалау сияқты баламалы тәсілдер бүгінгі білім беру жүйесінде әділ, дәйекті және бейтарап бағалауды қолдауға әлдеқайда тиімді екені анық.

Кілт сөздер: қоңырау тәрізді қисық, критерийге негізделген бағалау, қалыптастырушы бағалау, жоғары білім, теңсіздік, шеберлікке негізделген оқыту, орташа мән, қалыпты таралу.

А. Фриджерио

Неравенство по замыслу: как оценка по колоколообразной кривой подрывает успеваемость студентов

Колоколообразная кривая — это метод оценки, который сравнивает студентов друг с другом и оценивает их, следуя модели нормального распределения. Такая модель подразумевает небольшое число отличников, большую группу, сгруппированную вокруг средних оценок, и меньшинство с низкими оценками или неудовлетворительными результатами. Несмотря на широко распространенную критику, колоколообразная кривая до сих пор используется в высшем образовании по всему миру из-за ее ожидаемой способности предотвращать инфляцию оценок, дифференцировать способности студентов и способствовать развитию конкурентной среды. С помощью качественного, аргументированного анализа настоящее исследование подчеркивает несоответствие системы колоколообразной кривой принципам образовательного равенства, ее негативное влияние на внутреннюю мотивацию студентов и ее непреднамеренное поощрение посредственности путем навязывания фиксированного распределения оценок. Анализ далее раскрывает ограничения системы, особенно при применении к небольшим когортам или на разных академических уровнях, и развенчивает некоторые мифы, связанные с предполагаемым преимуществом оценивания по колоколообразной кривой. В свете основных результатов альтернативные подходы, такие как оценка на основе критериев, обучение, основанное на мастерстве и стратегии формирующего оценивания, кажутся более эффективными для поддержки справедливой, обоснованной и беспристрастной оценки в сегодняшнем образовательном ландшафте.

Ключевые слова: колоколообразная кривая, оценка на основе критериев, формирующая оценивание, высшее образование, неравенство, обучение, основанное на мастерстве, посредственность; нормальное распределение.

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Artificial intelligence in self-learning: new horizons of education

This article examines the role of artificial intelligence (AI) in self-learning. Self-learning is becoming an important skill in the era of digitalization. The use of AI in self-learning opens up new perspectives for improving the effectiveness and accessibility of education. AI is able to adapt to users, help solve tasks more efficiently, find answers to questions, provide personalized learning. The authors defined the relevance, goals and objectives of the study, analyzed the works of foreign and domestic scientists on the research. Considering that each student is unique in their abilities and needs, traditional teaching methods may not be sufficient to accommodate all these differences. However, AI technologies can provide self-learning by effectively adapting educational materials to the individual requirements of each student in each case. The article presents main promising directions of using AI in self-learning: personalized learning paths, game-based learning platforms, virtual assistants, automatic assessment system. During the study, survey was conducted among students to assess their application of AI technologies, which showed students' interest in AI and its potential use in self-learning. To achieve the obtained results, different theoretical, empirical, statistical methods were applied such as literature analysis, survey, the Mann-Whitney U-test, analysis of variance (Anova-test).

Keywords: artificial intelligence, artificial intelligence technologies, self-learning, self-learning skills, lifelong learning, personalization of learning, virtual assistants, automatic assessment system.

Introduction

In the era of digitalization and globalization, the field of education is undergoing changes, acquiring new highly intellectual shades, namely the introduction of various digital fundamental tools such as neural networks, artificial intelligence (AI) and others. The use of AI can help solve important problems and open up new horizons in the education system. One of the important goals of the modern system of higher professional education is to train competitive specialists with a high level of professional competence and well-rounded personal development, who are capable of lifelong learning, continuously expanding the already accumulated fundamental range of their skills and knowledge.

With the rapid development of technology, students are increasingly faced with the need to learn new skills and knowledge on their own. Self-learning, in turn, is becoming an important competence in the era of digitalization and changes in the labor market. AI technologies are able to offer students personalized educational trajectories, as well as assist in the automatic analysis and processing of information. In the Address to the people of Kazakhstan, K.K. Tokayev emphasized the need to use AI in the training of qualified specialists in the higher education system [1]. This, in turn, highlights the importance of using AI in the training of future specialists.

The purpose of this work is to study the role of AI in self-learning of students. The main focus will be on analyzing the opportunities that AI provides for students' self-learning, as well as examining the advantages and challenges associated with the integration of AI into the educational process.

In accordance with our research objective, we have identified the following research objectives:

1. To analyze of the psychological and pedagogical literature of domestic and foreign researchers (authors, scientists) on the research problem.

2. To determine students' opinions on the advantages and challenges of using artificial intelligence.

3. To determine whether there is a difference between men and women in the use of AI in the process of self-learning.

4. To determine whether there is a difference between the ages of students when using AI in the process of self-learning.

The use of AI in education has been actively studied in recent years. There are numerous works by foreign and domestic scientists in this field. Researchers R.Y. Tsarev, S.V. Tynchenko and S.N. Gritsenko in their work outlined the essence of the problem at the present stage and explored the possibilities of using resources in the field of education. [2]. L.K. Fryer believes that the use of AI technologies increases students' interest in completing learning tasks and their motivation to learn [3]. As reported by D.E. Han, an important advantage of using AI in educational activities is the possibility of repeated repetition of information, their availability, regardless of the time and location of the person [4]. That is, the process of learning and assimilation of new knowledge can be continuous, not limited to academic hours.

Domestic researchers have also highlighted in their research the advantages and effectiveness of using AI in learning process. Thus, in her research work, A.E. Zhumabayeva concludes: "the most useful aspect of AI is the independent acquisition and presentation of knowledge; self-selection of the mode of educational activity in the context of the functioning of the information and communication subject environment; self-selection, organizational forms and learning methods" [5]. As reported by Zh.B. Akhmetova, Zh.Zh. Bakirova, AI-based virtual assistants support students in real time and allow them to learn independently and efficiently [6].

Therefore, it can be concluded that AI is an indispensable tool that can help students at any time and in any place in the process of improving their weaknesses on a topic or self-learning of interesting material. The use of AI in students' self-learning opens up new perspectives and opportunities for improving the effectiveness and accessibility of education. AI is able to adapt to users, help them solve tasks faster and more efficiently, find answers to questions, and provide personalized learning and support. After analyzing the scientific works on the research topic, we have considered several promising directions of using AI in students' self-learning (Fig. 1).
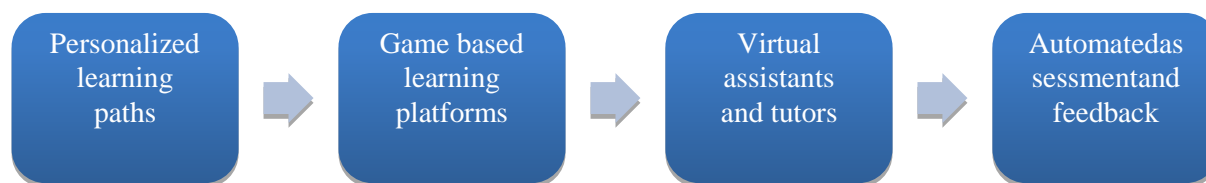

Figure 1. Promising directions for the use of AI in self-learning

Personalized learning paths. AI can analyze the individual needs and characteristics of each student, such as the level of knowledge, the speed of learning, preferences in teaching methods, and other characteristics. According to R.A. Amirov and U.M. Bilalova, AI allows each student to form an individual educational trajectory for successful university studies and further professional growth [7]. When using AI, an individual learning plan can be formed in accordance with the needs and learning situation of students, AI provides immersive learning and intelligent tracking of learning to help students form and develop their self-learning skills.

As claimed by M. Della Ventura, AI technologies open up new opportunities for the implementation of personalized learning, adapted to the individual needs of students [8]. Considering that each student has different abilities and capabilities, the use of traditional teaching methods in solving problems that may arise in this regard may not be sufficient in self-learning. However, artificial intelligence technologies can provide self-learning by effectively adapting learning materials to the individual requirements of each student in any situation. AI is also able to analyze the interests of students and offer them programs and courses in accordance with them. An individual approach allows students to be interested in the learning process, as well as to control the independence of completing tasks during distance or independent study [9]. Thus, students can show high motivation, level of participation and independence in the educational process. AI technologies allow students to master materials on their own.

Based on this data, AI systems can offer personalized learning paths, adapting content, assignments, and topics depending on the student's progress. For example, adaptive learning platforms such as "Coursera", "Duolingo", and "Khan Academy" use AI to create personalized learning plans. Today, the "Coursera" educational platform has a very high use among students engaged in self-study. "Coursera" is a

global platform created by Stanford University professors Daphne Koller and Andrew Ng in 2012. The platform's materials closely resemble traditional education, including lectures, tests, homework, and exams. If students encounter difficulties, they can engage in discussions on a dedicated forum, where both students and teachers communicate and exchange insights. These AI-based learning platforms can deeply evaluate students' daily current academic performance, reducing learning time and increasing its effectiveness.

Game-based learning platforms. The use of gaming technologies and platforms in education is a trend that is becoming increasingly visible through the use of gamification. According to A. All, E.P.N. Castellar and L.J. Van, game-based learning refers to the using of games power in educational purposes where it can be used to define the accomplishment by using games as a learning method without any stress or pressure on students to improve student's education level [10]. AI can integrate into educational games, creating dynamic and interactive learning scenarios. Scientists T. Kingchang, P. Chatwattana and P. Wannapiroon investigated that the application of AI technology concepts and digital innovations to create the instruction supporting tools on small mobile devices, which can be accessed anywhere and anytime, can respond to the current education policies that promote lifelong learning and enable learners to seek knowledge by themselves from all forms of learning media [11]. Students can learn through the game, encountering real-world challenges and solving them with the help of knowledge. At the same time, AI stimulates active and interactive learning. Some platforms using AI offer students participation in interactive tasks that contribute to a deep understanding of the material and increase student interest. Thus, education becomes more exciting and attractive, which helps to improve students' results and motivation. For example, educational games and platforms such as "Kahoot" use AI elements to create mind games that stimulate motivation and help students learn through gameplay.

Virtual assistants and tutors. AI can serve as virtual assistants or tutors that help students learn the material on their own, complete various tasks and answer any of their questions. Also, virtual assistants are able to adapt to the student's level of knowledge and provide the necessary information in a convenient form. The V.S. Mkrtchyan, D.F. Amirov, L.A. Belyanina concludes: "A virtual assistant is an intelligent software system designed to extract educational materials from the knowledge base and provide them to the student in a form convenient for him. Unlike standard computer training programs, in which the form of presentation of the material is rigidly fixed and laid down at the design stage, the virtual assistant can generate new types of educational materials based on the available knowledge base" [12].

Virtual assistants such as "Chat GPT", "Deepseek" or "Google Assistant" can help students search for information, analyze educational materials, and answer questions about academic subjects. Within the framework of ChatGPT, it is possible to create so-called "agents" — specialized chatbots configured to provide assistance and training on specific subjects, courses or topics. These agents can be adapted to specific educational tasks, providing a deeper and more focused study of the material. Educational chatbots are very common, serve educational purposes, and can revolutionize the very essence of the educational process. The famous Bill Gates [13], reflecting on the educational potential of chatbots, stated that the most significant breakthrough that this technological paradigm will give humanity a significant improvement in the quality and accessibility of education. In addition, the use of chatbots in learning gives the student a sense of freedom and relieves anxiety. For instance, scientists Y. Li, C.Y. Chen, D. Yu et al. [14] note the positive impact of chatbots on reducing language anxiety and discomfort among students.

AI tutors are available 24/7 and do not require physical presence, and it makes learning more flexible and convenient. Students can study at any time convenient for them and in any place with Internet access.

Automated assessment and feedback. Automated assessment and feedback significantly facilitate the process of self-learning, making it the most effective, accessible and adaptive. AI assessment systems allow students to be assessed, analyze academic performance, make suggestions for improving it, and develop effective learning plans. D. Boud and E. Molloy [15] discuss how automated AI-based feedback systems can enhance students' autonomy by providing timely and detailed feedback that helps them adjust and improve their knowledge and skills on their own. In their research, C.K.Y. Chan and W. Hu [16] reveals a positive student perception of AI support and feedback while developing their assessment. A distinctive feature of the knowledge control system is a dialogue in the form of "question-answer" in natural language. The system generates questions about a given topic, and the student answers in natural language. The system allows to improve the quality of knowledge control by automating the process and eliminating the subjective approach.

Methods and materials

The research employed theoretical, empirical and statistical methods. The theoretical methods included the analysis and synthesis of scientific and pedagogical literature in the field of artificial intelligence. The empirical method involved conducting a survey to identify students' opinions on AI and its application in the self-learning. The target population of the study includes 94 students studying at the Karaganda Buketov University in Karaganda, Kazakhstan and Gazi University in Ankara, Turkey. The study was conducted remotely using the Google Forms service. The students were offered a questionnaire of 10 closed-ended questions and 30 statements, which they had to answer as clearly and fully as possible. The questionnaire used elements of the Likert scale, namely: 1 — absolutely disagree, 2 — disagree, 3 — partially agree, 4 — agree and 5 — completely agree. The content of the questionnaires is presented in Table 1.

T a b l e 1

№	Questions
1	Gender.
2	Age.
3	Specialization.
4	Can you plan the learning process yourself?
5	Have you used AI (artificial intelligence) in self-learning?
6	Did you receive an education in AI?
7	What is your level of knowledge on AI?
8	How often do you use AI in self-learning?
9	How many hours a day do you use AI?
10	In what training activities do you use AI?
	Statements
1	AI is a system that helps in education.
2	AI is a computer program.
3	AI is a computer-controlled system designed to perform specific tasks.
4	AI is a highly advanced technology.
5	AI is a technology that makes life easier.
6	AI is a tool that facilitates self-learning.
7	AI increases productivity in learning.
8	AI saves time on self-learning.
9	AI makes the learning process more effective.
10	AI is necessary to evaluate the educational process.
11	AI promotes self-learning.
12	AI provides more effective materials in education.
13	AI offers different teaching methods according to the needs of students.
14	AI increases stability in learning.
15	With the help of AI scheduled events make learning engaging.

	Statements
16	Planned activities with the help of AI make learning easier.
17	AI leads to an emotionless educational environment.
18	AI reduces communication in the classroom.
19	AI causes students to become selfish.
20	AI negatively affects the socialization of students.
21	AI reduces the role of the teacher in the classroom.
22	AI cannot ensure the confidentiality of information.
23	AI causes Internet addiction.
24	AI makes the student lazy.
25	AI reduces learners' thinking ability.
26	AI creates ethical problems.
27	AI has no legal basis.
28	AI weakens students' research skills.
29	AI reduces students' cognitive skills.
30	AI causes dependence on technology.

Results and discussion

The data gathered were analyzed depending on the purpose of the study and the research questions. Descriptive analysis methods were used in data analysis. The frequency of occurrence and the arithmetic mean were used to analyze students' opinions about artificial intelligence; due to the absence of a normal distribution of the original variance in the studied data (12 male, 82 female), the U-test was used instead of the T-test to determine differences in perception based on students' gender; the Anova test was used to determine whether there were differences between students' ages related to the use of AI in self-learning.

According to the second task of the study, it turned out which advantages of using AI students consider the most important (Fig. 2). The students were offered several statements to determine the advantages of using AI. Each of them was given the following answers: 1 — absolutely disagree, 2 — disagree, 3 — partially agree, 4 — agree and 5 — completely agree.
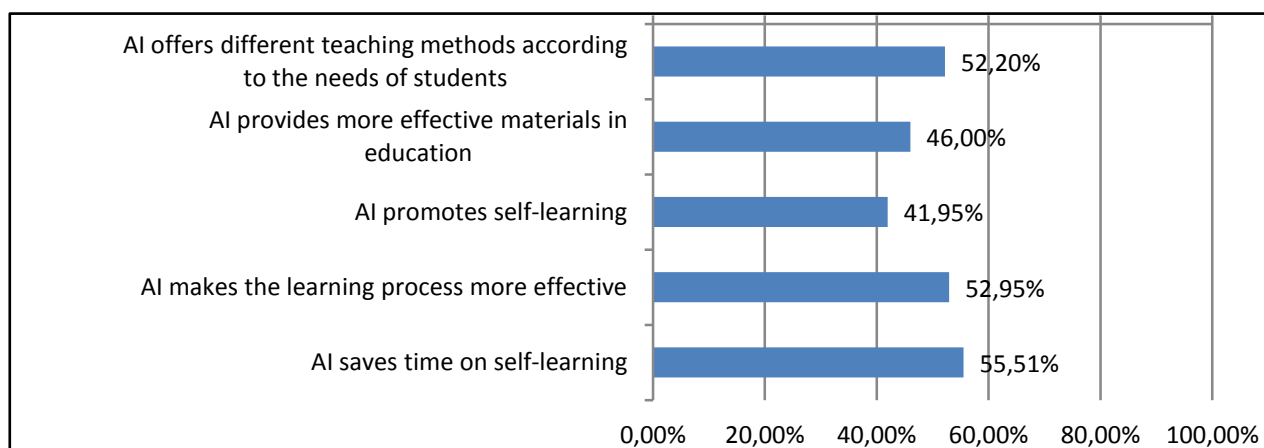

Figure 2. Advantages of using AI

Analyzing the results, the majority of participants demonstrated several advantages of using AI, meaning they responded "agree" to the given statements. More precisely, the majority of respondents (55.51 %) agree with the statement that "AI saves time in self-learning." Moreover, 52.95 % of interviewees believe that "AI makes the learning process more effective"; 41,95 % of students agree that "AI promotes self-learning"; 46 % of respondents hold the opinion that "AI provides more effective materials in education" and 52,20 % of respondents think that "AI offers different teaching methods according to the needs of students." Therefore, it can be stated that students are interested in AI technologies and believe that the use of AI technologies helps them in self-learning.

Also, during the study, students' opinions on the risks and issues of using AI were identified (Fig. 3). 34.35 % of respondents agree that "AI reduces the role of teachers in the classroom"; 35,65 % interviewees think that "AI makes the student lazy"; 33,05 % of respondents think that "AI reduces learners' thinking ability." Indeed, there is a risk that regular use of AI may lead to a loss of the ability to critically assess a problem and find non-standard solutions to solve it. This trend may lead to the formation of what psychologists and neuroscientists call a "lazy brain" in students.

According to 34.95 % of students, one of the risks of using AI is "dependence on technology". And 38.85 % of interviewees agreed with the statement that "AI leads to Internet addiction." Actually, constantly seeking help from artificial intelligence in any matter can make student dependent on technology and the Internet.
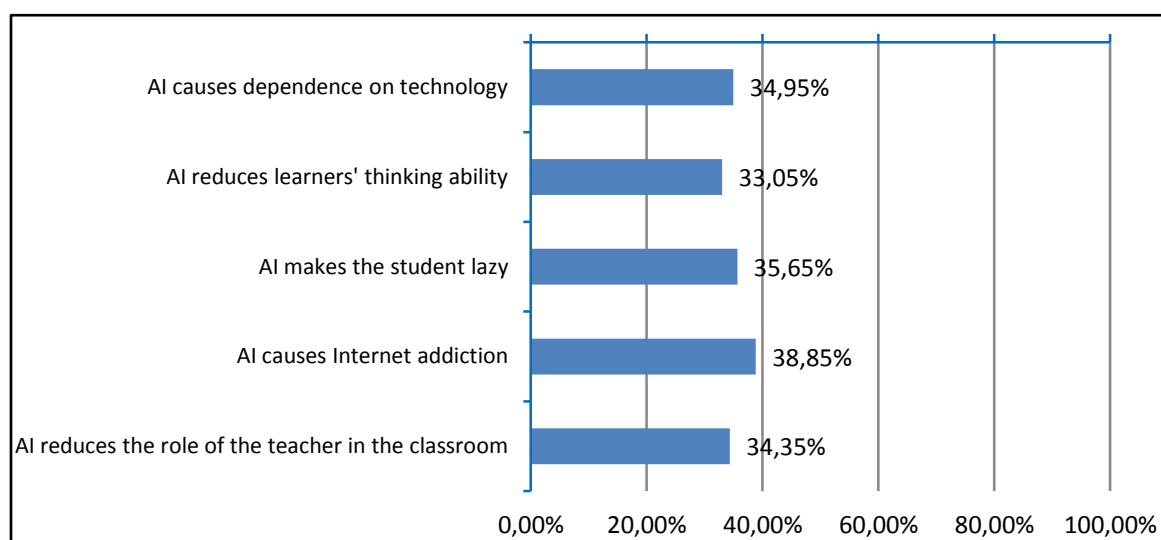

Figure 3. Risks and challenges of using AI

Consequently, the introduction of AI in the field of education can cause not only positive aspects, but also potential risks, such as a decrease in cognitive functions and mental activity, dependence on technology and the Internet. It is also important to ensure a balance between using AI to achieve goals and adhering to ethical standards and principles to protect the interests of people and society. According to V.T. Konusova, it is necessary to develop a system of ethical principles, as they serve as the basis for determining approaches to regulating the considered field. This approach will allow to ensure ethics and social responsibility in the development and application of AI [17].

In Table 2 the participants' opinions about AI in education in terms of the sexual variable are evaluated.

T a b l e 2

Students' opinions about AI in terms of gender variables

Question	Sex	N	Middle rank	U	P
Total	Man Woman Total	12 82 94	53,29 46,65	422,500	,431

A significant difference isn't found (U=422,500, P>0,05) according to the total mark when the findings in the Table 2 are analyzed students' opinions about AI in terms of their gender. However, a significant difference has been found in the 2nd (Q2=,046, P<.0.05), 4th (Q4=,004, P<.0.05), and the 26th (Q26=,029, P<.0.05) questions.

In particular, to the second question, "AI is a computer program" the majority of male students replied that they "disagree", while the majority of female respondents replied "strongly disagree. "AI is a high-level technology" to the fourth question, the majority of male students are of the opinion that they "disagree," while the majority of female students replied that they "absolutely disagree". According to question 26, "AI creates ethical problems", the majority of male respondents believe that they "disagree", while the majority of female students think that they "completely disagree".

A significant difference was found (F=5,014, P<0,05) according to the date presented in Table 3, analyzed considering students' opinions about AI in terms of their ages.

T a b l e 3

Students' opinions about AI in terms of age variables

Age	N	Mean	SD	F	P
16–18	22	3,2288	,31561	5,014	,003
19–21	10	3,4167	,24356		
22–24	17	3,6118	,30160		
25–27	45	3,4659	,33594		
Total	94	3,4316	,33695		

To determine which ages there are differences, the Tukey HSD (Honestly Significant Difference) test was conducted, according to which there is a significant difference between the ages of 16–18 and 22–24, and between the ages of 16–18 and 25–27 (Table 4). This may mean that students aged 16–18 have a different experience of interacting with AI technologies, which affects their perception of this problem.

T a b l e 4

Tukey HSD test results

	(I) Age	(J) Age	Average difference (I-J)	MSW	P
Tukey HSD	16–18	19–21	-,18788	,12092	,410
		22–24	-,38298*	,10238	,002*
		25–27	-,23714*	,08248	,026*
Tukey HSD	19-21	16–18	,18788	,12092	,410
		22–24	-,19510	,12635	,416
		25–27	-,04926	,11084	,971
	22-24	16–18	,38298*	,10238	,002*
		19–21	,19510	,12635	,416
		25–27	,14584	,09026	,375
	25-27	16–18	,23714*	,08248	,026*
		19–21	,04926	,11084	,971
		22–24	-,14584	,09026	,375

Conclusion

An analysis of modern research shows that the introduction of AI into educational processes helps to increase students' motivation, improve the quality of education and develop skills for independent learning of materials. The study revealed significant differences in the perception of AI among students of different ages, which shows the need to develop differentiated methods for integrating AI into the educational process.

Based on the obtained results, several recommendations were formulated for further research on the use of AI in students' self-learning:

- Assessment of the long-term impact of AI on students' cognitive development. It is necessary to conduct longitudinal studies to understand how the use of AI in the process of self-learning affects the development of critical thinking skills, creativity, memory and imagination of students.

- Improving the digital literacy of students. For the effective use of AI in self-learning, training in digital literacy, including the effective use of AI tools, is necessary. For example, in order to properly use the capabilities of AI technologies, it is possible to prepare methodological manuals, organize seminars and preventive measures to avoid technology and Internet addiction.

- Explore the ethical aspects of using AI in learning. AI technologies bring significant benefits and assistance in independent student learning, but without an ethical framework, they can endanger the spread of prejudice and discrimination in the real world, the escalation of disagreements, and the fundamental rights and freedoms of the student. An ethical approach to the implementation of AI is crucial to ensure the positive impact of technology on the educational process and reduce potential risks. Therefore, it is necessary to study the issues of data confidentiality, transparency of algorithms and the dependence of students on AI technologies. In this regard, it is important to conduct interdisciplinary research to develop universal ethical principles governing the development and use of AI in learning. In addition, it is important to organize empirical research aimed at understanding which AI technologies inspire user confidence or caution.

In general, it can be concluded that AI opens up new opportunities for education, adapting to the specific needs and abilities of each student, which can significantly increase student autonomy and the effectiveness of self-learning.

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Өзін-өзі оқытудағы жасанды интеллект: білім берудің жаңа көкжиектері

Мақалада өзін-өзі оқытудағы жасанды интеллектің (ЖИ) рөлі қарастырылған. Өзін-өзі оқыту цифрландыру және еңбек нарығындағы өзгерістер дәуірінде маңызды дағды. Студенттердің өзін-өзі оқытуында ЖИ қолдану білім берудің тиімділігі мен қол жетімділігін арттырудың жаңа перспективалары мен мүмкіндіктерін ашады. ЖИ пайдаланушыларға бейімделуге, қойылған міндеттерді тез және тиімді шешуге, сұрақтарға жауап табуға, жекелендірілген оқытуды және қолдауды қамтамасыз етуге қабілетті. Авторлар зерттеудің өзектілігін, мақсаты мен міндеттерін анықтап, зерттеу тақырыбы бойынша шетелдік және отандық ғалымдардың еңбектеріне талдау жүргізген. Әрбір білім алушының қабілеттері мен қажеттіліктері ерекше екенін ескере отырсақ, дәстүрлі оқыту әдістері осы айырмашылықтардың барлығын жеткіліксіз қанағаттандыра алмауы мүмкін. Алайда, ЖИ технологиялары оқу материалдарын кез келген жағдайда әр білім алушының жеке талаптарына тиімді бейімдей отырып өзін-өзі оқытуды қамтамасыз ете алады. Мақалада студенттердің өзін-өзі оқытуында ЖИ қолданудың негізгі перспективалық бағыттары келтірілген: жекелендірілген білім беру маршруттары, оқытудағы ойын платформалары, виртуалды көмекшілер мен репетиторлар, автоматты бағалау жүйесі. Зерттеу барысында студенттерге ЖИ технологияларын қолдану бойынша сауалнама жүргізілді, бұл студенттердің ЖИ деген қызығушылығын және оны өзін-өзі оқытуда қолдану мүмкіндігін көрсетті. Алынған нәтижелерге қол жеткізу үшін теориялық, эмпирикалық және статистикалық әдістер, атап айтқанда, әдеби дереккөздерді талдау, сауалнама, Манн-Уитнидің U-критерийі, дисперсиялық талдау (Anova-тест) қолданылды.

Кілт сөздер: жасанды интеллект, жасанды интеллект технологиялары, өзін-өзі оқыту, өзін-өзі оқыту дағдылары, үздіксіз оқыту, оқытуды жекелендіру, виртуалды көмекшілер, автоматты бағалау жүйесі.

М.К. Ельшина, Р.Б. Маженова, Ю. Гелишли, С.А. Кипшаков

Искусственный интеллект в самообучении: новые горизонты образования

В данной статье рассматривается роль искусственного интеллекта (ИИ) в самообучении. Самообучение становится важным навыком в эпоху цифровизации и изменений на рынке труда. Использование ИИ в самообучении студентов открывает новые перспективы и возможности для повышения эффективности и доступности образования. ИИ способен подстраиваться под пользователей, помогать быстрее и эффективнее решать поставленные задачи, находить ответы на вопросы, обеспечивать персонализированное обучение и поддержку. Авторами определены актуальность, цель и задачи исследования, проведен анализ трудов зарубежных и отечественных ученых по теме исследования. Учитывая, что каждый учащийся уникален в своих способностях и потребностях, традиционные методы обучения могут быть недостаточно способны удовлетворить все эти различия. Однако технологии ИИ могут обеспечить самообучение, эффективно адаптируя учебные материалы к индивидуальным требованиям каждого учащегося в любом случае. В статье представлены основные перспективные направления использования ИИ в самообучении студентов: персонализированные образовательные маршруты, обучающие игровые платформы, виртуальные ассистенты и репетиторы, автоматическая система оценки. В ходе исследования было проведено анкетирование студентов на предмет знания и примене-

ния технологий ИИ, которое показало заинтересованность студентов к ИИ и возможность его использования в самообучении. Для достижения полученных результатов были применены теоретические, эмпирические и статистические методы, в частности, метод анализа литературных источников, анкетирование, U-критерий Манна-Уитни, дисперсионный анализ (Anova-тест).

Ключевые слова: искусственный интеллект, технологии искусственного интеллекта, самообучение, навыки самообучения, непрерывное обучение, персонализация обучения, виртуальные ассистенты, автоматическая система оценки.

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Виртуалды мұражай әдісі арқылы білім алушылардың ұлттық құндылықтарын қалыптастырудың жолдары

Зерттеудің өзектілігін айқындау мақсатында нормативті құжаттар, оның ішінде «Әділетті Қазақстан — Адал азамат», «Білім туралы» заңда қарастырылған ұлттық құндылықтарды дәріптеуге бағытталған патриоттық ұйымдарды жоспарлау және кәсіби тұрғыда дамуға мүмкіндік беретін міндеттер қарастырылды. Оқу процесінде виртуалды мұражай әдісі арқылы ұлттық құндылықтарды қалыптастырудың маңызын зерттеген ғалымдардың зерттеулеріне теориялық тұрғыда талдау жасалды. Зерттеудің мақсаты — білім алушылардың ұлттық құндылықтарын виртуалды мұражай әдісі арқылы қалыптастырудың жолдарын айқындау. Зерттеуге А. Қуатбеков атындағы Халықтар достығы университетінің «Педагогика және психология» білім беру бағдарламасы бағытында оқитын 2-курстың 32 білім алушылары қатысты. Зерттеу үш кезең (анықтау, қалыптастыру, бақылау) бойынша іске асырылды. Анықтау кезеңінде авторлық сауалнама арқылы алғашқы нәтижелер алынды; қалыптастыру кезеңінде ұлттық құндылықтарды виртуалды мұражай әдісі арқылы қалыптастырудың үш жолы: бірінші — зерттеу мәселесінің теориялық негіздерін айқындау; екінші — ұлттық құндылықтарды қалыптастыруда виртуалды мұражай технологиясы арқылы (Батыс Қазақстан облыстық тарихи-өлкетану мұражайы, Ә. Қастеев атындағы Мемлекеттік өнер мұражайы) өнертанымдық бұйымдарды насихаттау; үшінші — ұлттық құндылықтарды қалыптастыруға бағытталған виртуалды (Әзірет Сұлтан Ұлттық-тарихи мәдени музей-қорығы, «Таңбалы» мемлекеттік тарихи-мәдени және табиғи музей-қорығы, Абайдың «Жидебай-Бөрілі» мемлекеттік тарихи-мәдени және әдеби-мемориалдық музей-қорығы) мұражайларды қолдану. Виртуалды музей — рухани және танымдық бағытта ұлттық құндылықтарды қалыптастыруда маңызы зор құрал ретінде қарастырылды. Бақылау кезеңіндегі нәтижелер қалыптастыру кезеңінде жүргізілген жұмыстардың тиімділігін көрсетті.

Кілт сөздер: ұлттық құндылық, виртуалды технология, мұражай, өнер, ұлттық сана, тарих, мәдениет.

Кіріспе

Қазіргі білім беру жүйесінде ұлттық құндылыққа қанығып өскен, бойында адамгершілік қасиеттері мен ұлттық санасы қалыптасқан, ұлттық өнер мен мәдениеттің байлығын жан дүниесіне сіңірген, өзінің еліне, жеріне, тарихы мен дәстүріне деген құрмет сезімдері оянған, парасатты және ұлтжанды, рухы мықты, кәсіби тұрғыда бәсекеге қабілетті тұлға қалыптастыру басты мақсаттардың бірі. Білім алушыларды ұлттық құндылыққа баулу олардың рухани-адамгершілік қасиеттерінің, мәдени, өмірлік және адами құндылықтарының қалыптасуына ықпалы зор деп білеміз. Себебі, ұлттық құндылық — бұл білім алушының өміршең болып қалыптасуында және кәсіби тұрғыда дамуында маңызды рөл атқарады.

Қазіргі қоғамда ұлттық рух әлсіреп, тілге деген құрмет төмендеп, «құндылық» ұғымының мәні құнсызданып, қоғамдағы қарым-қатынастың жағымсыз жақтары көбеюде. Осы тұста, білім алушылардың ұлттық құндылықтарын қалыптастырудың қажеттілігі туындайды. Олай болса, біз зерттеу барысында келесідей ережелерді негізге алдық:

– «виртуалды мұражай», «ұлттық құндылық» атты ұғымдарды зерттеген ғалымдардың теориялық зерттеулері;

– «ұлттық құндылыққа» бағытталған авторлық сауалнама нәтижелері және қалыптастыру жолдары.

Қазақстан Республикасының Президенті Қ.-Ж.К. Тоқаев 2023 жылы Ұлттық құрылтайдың «Әділетті Қазақстан — Адал азамат» атты екінші отырысында сөйлеген сөзінде ұлттық құндылықтарды дәріптеуге байланысты мәселені қозғады. Адами құндылыққа толы тұлғаны қалыптастыру үшін ұлттық құндылықтарды негізге алу қажет деп баса айтты. Бұл бағыттағы жұмыстарды іске асыру, әсіресе балалар мен жасөспірімдерді тәрбиелейтін ұлттық құндылыққа

бағытталған іс-шаралардың, ұйымдардың жұмыстарын жандандыру қажет [1] деп мақсат қояды. Бұл мақсат ұлттық құндылықтарды бойына сіңірген өскелең ұрпақты тәрбиелеуді міндеттейді.

Бұған сәйкес, ҚР «Білім туралы» Заңының 11-бабының 1-тармақшасында жеке адамның дамуы мен қалыптасуына және кәсіби тұрғыда шыңдалуына әсер ететін ұлттық және адамзаттық құндылықтар туралы мәселе қарастырылған [2]. Демек, жоғарыдағы тұжырымдалған міндеттерге сүйене отырып, білім алушылардың ұлттық құндылықтар негізінде білімін жетілдіру міндеті қойылды. Ендеше, бұл бағыттағы міндеттерді іске асыру болашақ педагогтарды даярлауда ұлттық құндылықтарды білім беру қызметін жүзеге асыруда ресурс ретінде қолдану жолдарын іздестіру зерттеу мәселеміздің өзектілігін көрсетеді. Сондықтан, білім алушыға ұлттық құндылықтарды бағалауда, рухани-адамгершілік құндылықтарды бойына сіңіруде және білім мазмұнын игеруде маңызы артты десек қателеспейміз.

Зерттеудің мақсаты — білім алушылардың ұлттық құндылықтарын виртуалды мұражай әдісі арқылы қалыптастырудың жолдарын айқындау.

Оқушылардың ұлттық құндылықтарын қалыптастыру мәселесіне Г.К. Джонисова, А. Жубандықова және т.б. ғалымдардың ғылыми еңбектері арналған; этнопедагогикалық құндылықтар негізінде патриоттық тәрбие беру жолдары Ж.Н. Қалиев, Н.Ш. Абдуллаев, Р.А. Джанабаева, С.Т. Иманбаева, Л.С. Майлыбаева және т.б. еңбектерінде зерделенген; ұлы ағартушылардың шығармалары мен қазақ батырларының ерлігі негізінде отансүйгіштікке тәрбиелеу жолдары Б.С. Қайыржанова, Д.С. Құсайынов, Қ. Әтемова, А.Қ. Дүйсенбаев, Г.Х. Еримбетова, Ғ.Б. Базарғалиевтың зерттеулерінде ашылады. Зерттеудің құндылығын ескере отырып, білім алушылардың ұлттық құндылығын қалыптастыру мәселесі әлі де зерттеуді қажет ететінін көрсетеді.

Отбасы тәрбиесінде ұлттық құндылықтарды пайдаланудың жолдарын Қ. Әтемова қарастырды. Автор зерттеуінде ұлттық құндылықтың бірнеше элементтерін ұсынды. Оларды атап өтсек: туған еліміз, тіліміз, рухани мұратымызға, яғни оған патриоттық сезім, қонақжайлылық, шынайылық, адамгершілік және т.б. құндылықтар; еліміздің менталитеті мен тарихы, этникалық тұрғыдағы мәдени ерекшеліктері; ертегілер мен аңыздар, нақыл сөздер мен мақал-мәтелдер, халық әндері; ұлттық нақыштағы қазақи киімдер мен ұлттық тағамдар; ұлттық рәміздер мен этностық мұралар жатады [3]. Тізімделген құндылықтар отбасы тәрбиесі арқылы ұрпақтан ұрпаққа берілуі тиіс. Ал, бұл міндетті оқу әрекетінде іске асыру біздің басты мақсатымыз деп қарауымыз қажет.

Ұлттық құндылықтардың адам үшін маңыздылығын Г.Х. Сарсенбаева зерттеді. Оның ойынша, ұлттық құндылық адамның өзінің ерекшелігі мен тілінің байлығы, мәдени мұрасы мен ұлттық дәстүрі, ұлттық тарих пен ұлттық мұраттан тұратын компоненттер жиынтығы [4]. Яғни, ұлттық құндылықтарды қалыптастыру ана тілін меңгеру, ұлттың тарихы мен болашағына деген көзқарасын зерделеу, ұлттық мүдделер мен мұраларды қабылдау арқылы іске асады.

Өскелең ұрпақты тәрбиелеуде ұлттық құндылықтардың маңызын зерттегендердің бірі А.Қ. Құсайынов. Автор ұлттық құндылықтарға бағытталған тәрбиенің бірнеше бағыттарын ұсынды. Әр бағыт ұрпақ тәрбиесіне бағытталған. Автордың пікірінше, ұрпақты тәрбиелеуде тәрбиелік орта қалыптастыру қажет; отбасылық тәрбиені насихаттайтын отбасылық құндылықтар жүйесін әзірлеу қажет; психикалық процестерді қалыптастыруға, психологиялық ахуалды зерттеуге, психикалық қабілеттерді анықтауға бағытталған салауатты өмір салтын құру қажет; цифрлық білім беру жағдайында АКТ сауаттылығын қалыптастыру қажет; кәсіпкерлік қабілетін қалыптастыруға бағытталған еңбек құндылықтар жүйесін қамтамасыз ету керек [5].

Ал, эпостық мұраларды зерттей отырып, оның ең құнды құндылық екенін зерттеуінде А.М. Жұмағұлова көрсетті [6]. Ғалым өз зерттеуінде ұлттық сананы қалыптастыруда Отанды қорғау, оны қастерлеу, адалдылықты сақтау, бауырларыңды қадірлеу деген ұстанымдарды негізге ала отырып, «ұлттық код» бейнесін суреттейді. Бұл зерттеу ұлт тарихымен, ауыз әдебиетімен, эпостық жырларымен ерекшеленеді.

Сондай-ақ, Г. Мұхаметқалиева және басқа да авторлардың зерттеуі өзгеше болды. Олардың пікірі бойынша, шетел тілін меңгеруде әр ұлттың мәдени ерекшеліктерін айқындап, туған жері мен тарихын, салты мен дәстүрін құрметтеуге баулу арқылы ұлттық құндылыққа тәрбиелеу керек деп санайды [7].

Г.А. Ерғалиева және бірлескен авторлар рухани құндылықтың маңызын қарастыра келе, жасөспірімдердің құндылық бағдарының өзгеру себептерін түсіндіреді. Олардың пікірінше, ғалымдардың қанатты сөздері, ой-пікірлері мен ерліктерін оқу процесінде қолдану маңызды нәтиже береді [8]. Сондай-ақ, Ж.Б. Кыдыралиева ұлттық құндылықтарды оқытудың әдістемесін ұсынды.

Оның ойынша, ұлттық құндылықтардың негізінде білім алушылардың ұлттық сана-сезімі мен ұлттық рухы қалыптасатынын атап көрсетеді [9].

Жоғарыдағы еңбектерді талдау нәтижесінде, «*ұлттық құндылық* — тұлға болып қалыптасуына әсер ететін құндылықтарды бойына сіңіру, яғни тілі мен рухани байлығы, мәдениеті мен тарихы, танымы мен дәстүрі, мұрасы мен санасы, білімі мен ғылымнан тұратын құндылықтардың кешені» деп қарастырамыз.

Инновациялық кезеңде білім алушылардың ұлттық құндылықтарын қалыптастыруда мобильді қосымшаларды, виртуалды технологияларды қолдану мәселесі қарқынды дамуда.

Осы тұста, ұлттық құндылықтарды қалыптастыруда арнайы мобильді контент пен қосымшаларды қолданудың мүмкіндіктерін анықтап, мобильді қосымшалардың қызметтерін (викториналық ойындар, әлеуметтік желілер, виртуалды экскурсия және т.б.) А.Е. Жұмабаева және бірлескен авторлар көрсетті [10]. Сондай-ақ, ұлттық құндылықтарды дәріптеуге бағытталған мәдени іс-шаралар, патриоттық сезімді оятатын әңгімелер, ұлт мұрасын көрсететін салт-дәстүрлер, ұлттық сананы шабыттандыратын деректі фильмдер мен подкасттар, тарихи ұлттық ғимараттар мен ескерткіштер және т.б. ресурстарды қамтамасыз ету жолдарын ұсынды. Ал, А.С. Стамбекова [11] және өзге де авторлар мобильді білім беру ортасын құру арқылы ұлттық құндылықтарға баулудың моделін әзірлеп, электронды әдістемелік лаборатория құруды өз зерттеуінде негізге алуда. Осы орайда, мобильді қосымшалардың ұлттық құндылықты қалыптастыруда орны ерекше екеніне көзіміз жетіп тұр. Мәселен, виртуалды мұражай әдісін қолдану арқылы білім алушылар ұлттық рух пен сананы оятуға бағытталған, құндылыққа бай бұйымдарды IT-технологиясы арқылы көру мүмкіндігіне ие болады.

Қазіргі цифрландыру жағдайында виртуалды мұражай әдісін зерттеген зерттеулер аз. Дегенмен, виртуалды мұражай әдісін қолдану арқылы педагогтердің эстетикалық мәдениетін қалыптастыру мәселесін Л.М. Умралиева және қосалқы авторлардың зерттеулерінен көруге болады [12]. Авторлар мұражайға саяхат ұйымдастыруға бағытталған курс бағдарламасын әзірлеп, оның тиімділігін дәлелдеген. Осылайша, ұлттық құндылыққа баулуда білім алушылар мәдени және көркем шығармашылық, ұлттық дәстүрдің көркемдік ерекшеліктерімен танысады.

Сондай-ақ, Р.Р. Баркибаева және т.б. авторлар білім алушылардың бойында құндылық бағдарын, патриоттық сезімдерін қалыптастыруға, отанына деген сүйіспеншілікті арттыруға бағытталған виртуалды медиатеканы ақпараттық ресурс ретінде қолданудың жолдарын қарастырды [13]. Осы орайда, білім алушылар елдің тарихына көз жүгірте отырып, салт-дәстүрге, қазақи бұйымдардың шығу тарихына шолу жасау арқылы ұлттық намыс, еліне деген сүйеспеншілік, ар-ождан және т.б. ұлттық құндылыққа толы қасиеттерді оятуға мүмкіндік алады.

Виртуалды мұражайлардың қызметін жүргізуде AR және VR технологиясын қолданудың мүмкіндіктерін көптеген ғалымдардың зерттеулерінен көруге болады [14]. Мәселен, Р.Н. Қожахметова және бірлескен авторлар бұл технологияларды өнер мен ғылым тарихын, мәдениет пен тарих туралы білімді меңгеруге көмек беретін ресурс ретінде қарастырады.

Durmuş және Günaydın виртуалды мұражайлардың мүмкіндіктерін қарастырды [15]. Ал, Li және т.б. авторлардың пайымдауынша, виртуалды мұражай білім алушылардың эстетикалық тартымдылылығын дамытып, мәдени мұраларды көру арқылы қанағаттану сезімдеріне ие болады [16]. Бұл процесс мәдени жинақтарды әртүрлі аудиторияларға қолжетімді етеді. Демек, біз білім алушыларға мәдени мұраларды таныту арқылы ұлттық құндылықтарды дәріптеуге ықпал етеміз.

Ғалымдардың зерттеулерінде, «*виртуалды мұражай* — бұл жекелендіру, интерактивтілік, пайдаланушы тәжірибесі және мазмұн байлығы арқылы мұражайды толықтыру, жақсарту немесе кеңейту үшін мұражайдың сипаттамаларына сүйенетін сандық нысан» [17] деп көрсетілген. Виртуалды мұражайлар инновациялық технология ретінде мәдени-тарихи, әлеуметтік және психологиялық-педагогикалық аспектілерді қамтитын күрделі білім беру процесі ретінде көрінеді.

Олай болса, қазіргі инновациялық кезеңде виртуалды мұражай әдісі арқылы білім алушылардың ұлттық құндылықтарын қалыптастыру мәселесі өзекті тақырыптардың бірі болып табылатындығына көз жеткіздік.

Әдістер мен материалдар

Зерттеу барысында зерттеу мәселесіне қатысты ғылыми еңбектерге талдау жасалып, виртуалды мұражай әдісі мен ұлттық құндылықтың қоғамдағы және болашақ педагогтің кәсіби дамуындағы маңызын анықтау мақсатында сауалнама әдісі қолданылды. Зерттеуге Ә. Қуатбеков атындағы

Халықтар достығы университетінің «Педагогика және психология» білім беру бағдарламасы бағытында оқитын 2-ші курстың білім алушылары қатысты. Оларға арнайы авторлық сауалнама ұсынылды. Барлығы 32 білім алушыдан сауалнама алынды.

Сауалнаманың сұрақтарын құрастыруда А.Е. Жұмабаеваның авторлық сауалнамасы негізге алынды [6]. Сауалнаманың мақсаты — виртуалды мұражай әдісі мен ұлттық құндылықтың қоғамдағы және болашақ педагогтің кәсіби дамуындағы маңызын анықтау.

Сауалнаманың сұрақтары төмендегідей:

1-ші. Сіз ұлттық құндылық ұғымын түсінесіз бе? Ж.: «Иә, түсінемін», «Жоқ, түсінбеймін», «Жауап беруге қиналамын».

2-ші. Ұлттық құндылықты не мақсатта қалыптастыру қажет деп ойлайсыз? Ж: «Ұлттық мұраны, тарихы мен мәдениетін білу үшін», «Қазіргі таңда өзекті емес, әрі маңызы жоқ», «Жауап беруге қиналамын».

3-ші. Ұлттық құндылықтарды қалыптастыруда қандай әдіс-тәсілдерді қолданған дұрыс деп санайсыз? Ж: «Виртуалды мұражай әдісі», «Дәстүрлі әдістер».

4-ші. Виртуалды мұражай әдісі туралы білесіз бе? «Білемін», «Білмеймін», «Жауап беруге қиналамын».

5-ші. «Виртуалды мұражай әдісі ұлттық құндылықтарды дәріптеуде қандай мүмкіндіктерді ұсынады? Ж: «Мәдени және тарихи мұралар мен жәдігерлерді, салт-дәртүрлерді, өнер туындыларын дәріптеу», «Жаңалықтар мен ақпараттарды насихаттау», «Ойындарды ойнау».

6-шы. Ұлттық құндылықтарды қалыптастыруда виртуалды мұражай әдісі қандай қызметтерді атқаруы тиіс? Ж: «Тарихи мұралар мен жәдігерлер туралы ақпарат ұсынады», «Білмеймін», «Жауап беруге қиналамын».

Нәтижелер және оларды талдау

Зерттеудің үш кезеңі іске асырылды.

Бірінші анықтау кезеңінде — авторлық сауалнама алынды. Білім алушылардан алынған сауалнаманың жауаптарына талдау жүргізейік:

1-ші. «Сіз ұлттық құндылық ұғымын түсінесіз бе?» Респонденттердің 61 %-ы оң, 29 %-ы теріс, 10 %-ы жауап беруге қиналатынын көрсетті.

2-ші. «Ұлттық құндылықты не мақсатта қалыптастыру қажет деп ойлайсыз?» деген сұраққа 59 %-ы ұлттық мұраны, тарихты білу мақсатында деп жауап берсе, 32 %-ы құнды, өзекті емес екенін көрсетті, ал 9 %-ы жауап беруге қиналатынын айтты.

3-ші. «Ұлттық құндылықтарды қалыптастыруда қандай әдіс-тәсілдерді қолданған дұрыс деп санайсыз?» түрінде қойылған сұраққа басым бөлігі, яғни 65 %-ы дәстүрлі әдістерді таңдайтынын, ал 29 %-ы жауап беруге қиналатынын, тек 6 %-ы виртуалды мұражай әдісін таңдағаны белгілі болды. Бұл дегеніміз виртуалды мұражай әдісі туралы білімдерінің жоқтығын көрсетеді.

4-ші. «Виртуалды мұражай әдісі туралы білесіз бе?» деген сұраққа «білемін» деген жауап 26 %-ды құрады; 54 %-ы «білмеймін», 10 %-ы «жауап беруге қиналамын» деген жауапты таңдады.

5-ші. «Виртуалды мұражай әдісі ұлттық құндылықтарды дәріптеуде қандай мүмкіндіктерді ұсынады?» деген сұраққа 28 %-ы дұрыс жауап берсе, 48 %-ы жаңалықтарды насихаттауда, 24 %-ы ойын ойнауда деп жауап берді.

6-шы. «Ұлттық құндылықтарды қалыптастыруда виртуалды мұражай әдісі қандай қызметтерді атқаруы тиіс?» деген сұраққа 32 %-ы «тарихи мұралар мен жәдігерлер туралы ақпарат ұсынады» деген жауапты таңдаса, 46 %-ы «білмеймін», 22 % -ы «жауап беруге қиналамын» деген нұсқаны таңдаған.

Зерттеудің бұл кезеңінде (анықтаушы) респонденттердің зерттеу мәселесі туралы ой-пікірлері мен виртуалды мұражай әдісі арқылы қалыптастырудың маңызы қандай деген көзқарасын анықтадық.

Тұжырымдай келе, ұлттық құндылықтарды қалыптастыруға жетелейтін оқытудың жаңа жолдарын қарастырудың қажеттілігі артып отыр. Осы орайда, ұлттық құндылықты виртуалды мұражай әдісі арқылы қалыптастыру үшін зерттеудің келесі қалыптастырушы кезеңінде жүргізілген жұмыстарға тоқталайық. Біз білім алушылардың виртуалды мұражай әдісі арқылы ұлттық құндылықтарды қалыптастырудың жолдарын қарастыратын боламыз:

Бірінші жолы — ұлттық құндылықтарды қалыптастыру мәселесінің философиялық, психологиялық, педагогикалық негіздерін айқындауға бағытталған. Ұлттық құндылықтарды

қалыптастыру мәселесіне қатысты нормативті құжаттар талданып, ұлттық құндылыққа бағытталған бағдарламалар мен оқу жоспарлары, жолдаулары және т.б. қарастырылды (ҚР Президенті Қ.-Ж.К. Тоқаевтың «Әділетті Қазақстанның экономикалық бағдары», Ұлттық құрылтайдың «Әділетті Қазақстан — Адал азамат» атты екінші отырысында сөйлеген сөзі, «Білім туралы» Заң, жалпыға міндетті білім беру стандарты). Ұлттық құндылықтарды қалыптастырудың теориялық негіздері зерделенді. Сондай-ақ, ұлттық құндылықтарды қалыптастыру үшін виртуалды мұражай әдісі бойынша шетелдік және отандық елдердің білім беру тәжірибесін зерттеу, тарихи маңызы бар аумақтарды зерттеуде мұражай әдісін қолданудың мүмкіндіктері қарастырылды.

Екінші жолы — ұлттық құндылықтарды қалыптастыруда виртуалды мұражай технологиясы арқылы өнертанымдық бұйымдарды насихаттау. Біз ұлттық көркем өнерін насихаттау арқылы ұлттық құндылықтарды қалыптастыратын боламыз. Білім алушыларға виртуалды музей арқылы өнер туындыларынан құралған ұлттық құндылықтардың көрінісі бейнеленген көркемдік бұйымдарды таныстырамыз:

біріншіден, Батыс Қазақстан облыстық тарихи-өлкетану мұражайына виртуалды тур ұйымдастыру. Мұражайда алтын әшекейлі бұйымдар, қолөнер туындылары, ұлттық киімдер, қару-жарақтар, ескі ыдыс-аяқ және т.б. құнды жәдігерлер бар. Білім алушылар жәдігерлердің шығу тарихымен, қолөнердің түрлерімен танысу барысында ұлттық құндылықтарды дәріптеуге дағдыланады;

екіншіден, Ә. Қастеев атындағы Мемлекеттік өнер мұражайы. Мұражай бейнелеу өнері, классикалық өнер, сәулет, мүсін өнерін насихаттауға бағытталған. Бұл шығармаларды тану, зерттеу, түсіну, қабылдау арқылы ұлттық бейнелеу өнерін дамытамыз. Мұражайдағы әрбір өнер туындыларынан ұлттық болмыс және ұлттық үн сезіледі. Демек, бұл адамгершілік, рухани, әлеуметтік, танымдық қасиеттерді қалыптастыруға бағытталған. Мәселен, қазақтың биік рухын, еркіндігі мен ерлігін айқын көрсете білген «Қыран» атты туындының бірі — ұлттық сананы, болмысты, күшті, жігерді қалыптастыруға мүмкіндік береді. Ұлттық құндылыққа негізделген киіз үйлердің сұлбасы қазақтың көшпелі мәдениетін, өмірін сипаттайтын өнер туындылары да көптеп кездеседі. Сонымен қатар, ар-намыс, ұяңдылық, салмақтылық, сабырлылық қасиеттері көрініс табатын «Дала аруы» атты картинаның да құндылығы жоғары, тәрбиелік жағынан берері мол туындылардың бірі. Бұл туындылардың мазмұнына тереңірек үңілсек қазақ елінің салты мен дәстүрі, тарихы мен мәдениеті, еркіндігі мен биік рухы көрініс табады. Бұл ұлттық құндылықтардың қалыптасуына негіз болып саналады.

Үшінші жолы — ұлттық құндылықтарды қалыптастыруға бағытталған виртуалды мұражайларды қолдану. Қазіргі таңда цифрлық білім беру жағдайында мәдени орындарды, оның ішінде мұражайды виртуалды әлемге көшіру мәселесі қарқынды жүргізілуде. Мұражайдағы тарихи мәдени жәдігерлер ұлттық болмысқа бай құндылықтардың бірі. Елдің тарихын білу, ұлттық мәдениетті сақтау, мәдени мұраны қорғау және оны келешек ұрпаққа жеткізу — біздің басты міндетіміз. Осы ретте, тарихи мәдени жәдігерлерді виртуалды мұражай әдісі арқылы таныстыру ұлттық сананы нығайтуға септігін тигізеді. Себебі, тарихи жерлерді насихаттау ұлттық бірлікті, рухани байлықты сақтайды. Біз ұлттық құндылықтарды қалыптастыруға бағытталған виртуалды мұражайларды ұсынамыз:

біріншіден, Әзірет Сұлтан Ұлттық-тарихи мәдени музей-қорығына саяхат ұйымдастыру. Бұл мұражайды тамашалау барысында білім алушылар археологиялық ескерткіштердің, ұлттық мұраны көрсететін тарихи ұлттық ғимараттар мен этнографиялық жәдігерлердің шығу тарихымен танысады. Киелі жердің тарихын тамашалау арқылы білім алушылардың бойында ұлттық сана мен құндылықтардың қалыптасатыны сөзсіз деп білеміз;

екіншіден, «Таңбалы» мемлекеттік тарихи-мәдени және табиғи музей-қорығы. Бұл мұражайдағы таңғажайып табиғи жәдігерлер баға жетпес құндылығымен, табиғатымен ерекшеленіп, ел мен жердің тарихын суреттейтін ескерткіштердің тарихын білу білім алушылардың ұлттық құндылығын қалыптастыратыны сөзсіз деп білеміз. Осы ретте, ұлттық құндылықтардың бірі ел мен жер екені бәрімізге мәлім;

үшіншіден, Абайдың «Жидебай-Бөрілі» мемлекеттік тарихи-мәдени және әдеби-мемориалдық музей-қорығы және т.б. тақырыпта 3D форматында тур ұйымдастыру. Бұл мұражай ғылыми-танымдық бағытта қызмет атқаратын мәдени орталықтардың бірі. Абайдың өмірі мен қызметі, әдеби мұрасы мен қара сөздері, тарихи құжаттар, сол заманның тұрмыс-тіршілігін бейнелейтін құралдар, өнер туындылары, ескі қолжазбалар және т.б. мәдени бұйымдар біздің ұлтымыздың бейнесін

көрсетеді. Мұражайда аса құнды жәдігерлердің бірі ретінде — Абайдың алақанының табы бар. Бұл жәдігердің ғылыми құндылығы өте жоғары, әрі ұлттың мәдениетін, дәстүрін, тарихын, өнерін дәріптеуде үлесі зор. Яғни, салт-дәстүр, мәдениет, өнер ұлттық құндылықтардың бастауы. Осы ретте, музейдегі материалдар мәдени ескерткіштер, тарихи жәдігерлер, археологиялық қазбалар, сәндік қолданбалы өнер туындылары және т.б. ұлттық құндылықтарды қалыптастыруға негіз болады.

Ендеше, білім алушылардың ұлттық құндылықтары өзінен-өзі қалыптаспайды. Бұл құндылықтарды қалыптастыру үшін оқу-танымдық әрекеттерді, оның ішінде виртуалды мұражайға танымдық бағытта жорық ұйымдастырудың маңызы зор екенін байқадық. Өйткені, мұражайдың әр бір элементі мәдени, рухани, тарихи құндылықтарды қалыптастыруға септігін тигізеді. Музейді тану білім алушылардың туған елге, ұлттың тарихы мен мәдениетіне, өнері мен көркем шығармаларына деген сүйіспеншілікті арттырады. Осы тұрғыдан виртуалды музей — рухани және танымдық бағытта ұлттық құндылықтарды қалыптастыруда маңызы зор. Себебі, музей ұлттық мәдениетімізді қалыптастыратын, тарихи-мәдени жәдігерлерді жинақтаушы, оларды ұрпаққа жеткізуші тарихи және рухани мекеме. Яғни, музейдің басты ұстанымдарының бірі — ұлттық құндылықты қалыптастыру. Олай болса, музейде орналасқан тарихи және мәдени құндылықтарымыз білім алушылардың бойында өз еліне, тарихына, дәстүріне, мәдениетіне деген сүйіспеншілікті қалыптастырады. Сондықтан осы бағыттағы жұмыстарды жетілдіруде музей мамандармен бірлесе отырып әдістемелік семинарлар, тренингтер, арнайы практикалық сабақтарды оқу процесінде іске асыру қажет.

Ендеше, зерттеудің нәтижесін анықтау мақсатында бақылау кезеңінде білім алушылардан сауалнама қайта алынды. Бақылау кезеңіндегі сауалнаманың нәтижелері:

1-ші сұрақ бойынша 77 %-ы оң, 23 %-ы теріс пайызды құрады, жауап беруге қиналатын жауаптар жоқ. Салыстырмалы түрде оң жауаптар 16 %-ға көтерілгендігін байқаймыз. Сауалнаманың көрсеткіші төмендегі суретте көрсетілген (1-сурет).
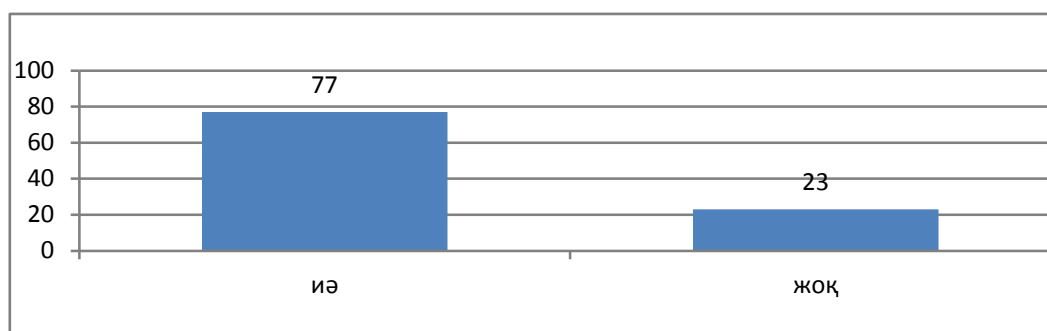

1-сурет. «Сіз ұлттық құндылық ұғымын түсінесіз бе?» сұрақтың жауабының көрсеткіштері

2-ші сұрақ бойынша респонденттердің 78 %-ы «Ұлттық мұраны, тарихы мен мәдениетін білу үшін», 19%-ы «Қазіргі таңда өзекті емес, әрі маңызы жоқ», 3%-ы «Жауап беруге қиналамын» деп жауап берді. Нәтижесі төменде диаграмма түрінде көрсетілген (2-сурет).
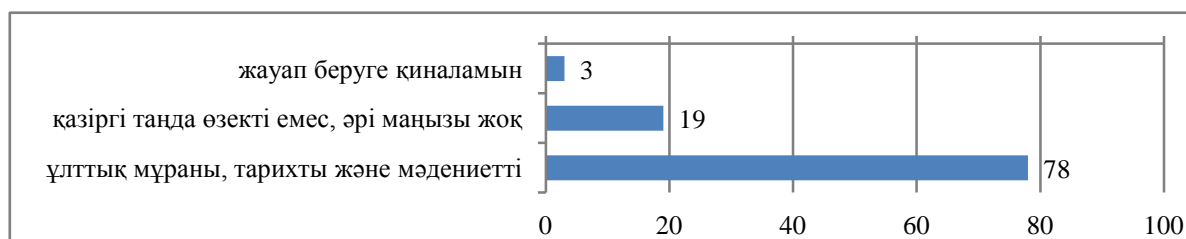

2-сурет. «Ұлттық құндылықты не мақсатта қалыптастыру қажет деп ойлайсыз?»
деген сұрақтың жауабының көрсеткіштері

3-ші сұраққа 58 %-ы «Виртуалды мұражай әдісі», 42 %-ы «Дәстүрлі әдістер» деп жауап берді. Респонденттердің 23 %-ның көзқарасы өзгерген. Нәтижесі төмендегі суретте көрсетілген (3-сурет).
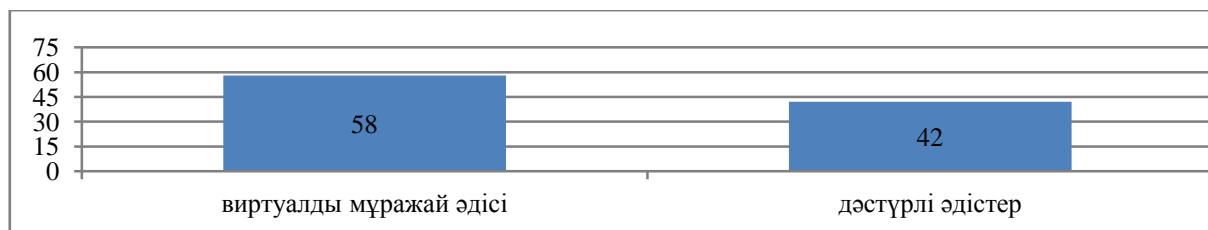
3-сурет. «Ұлттық құндылықтарды қалыптастыруда қандай
әдіс-тәсілдерді қолданған дұрыс деп санайсыз?» атты сұрақтың жауабының көрсеткіштері

4-ші сұраққа респонденттердің 76 %-ы «білемін», 33 %-ы «білмеймін», 5 %-ы «жауап беруге қиналамын» деген жауап берді. Оның нәтижесі төмендегі сурет арқылы көрсетілген (4-сурет).
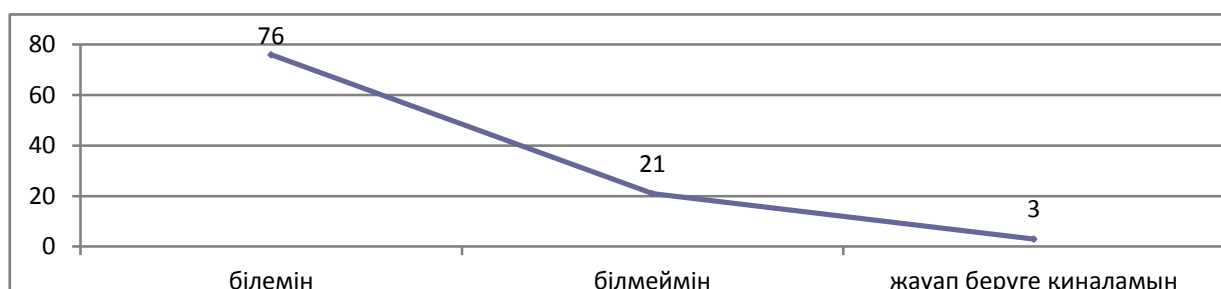
4-сурет. «Виртуалды мұражай әдісі туралы білесіз бе?» жауабының көрсеткіштері

5-ші сұраққа респонденттердің 78 %-ы «Мәдени және тарихи мұралар мен жәдігерлерді, салт-дәртүрлерді, өнер туындыларын дәріптеу», 23 %-ы «Жаңалықтар мен ақпараттарды насихаттау», 10 %-ы «ойындарды ойнау» деген жауап берді. Оның нәтижесі төмендегі диаграмма арқылы көрсетілген (5-сурет).
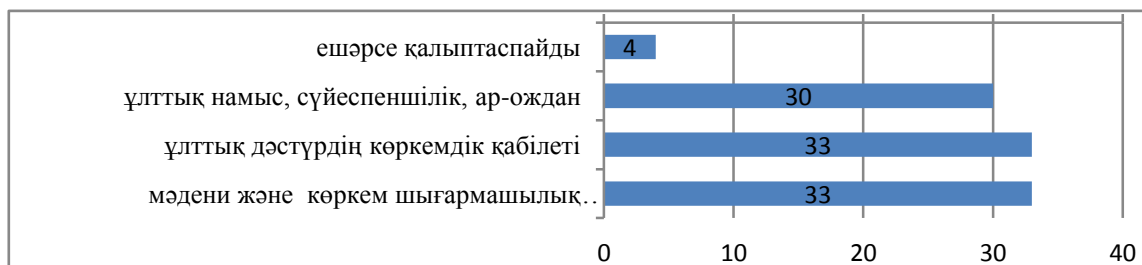
5-сурет. Респонденттердің «Виртуалды мұражай әдісі ұлттық құнылықтарды
дәріптеуде қандай мүмкіндіктерді ұсынады?» деген сұрақтың жауабы

6-шы сұраққа респонденттердің 73 %-ы «Тарихи мұралар мен жәдігерлер туралы ақпарат ұсынады», 24 %-ы «білмеймін», 3 %-ы «жауап беруге қиналамын». Сұрақтың нәтижесі төменде көрсетілген (6-сурет).
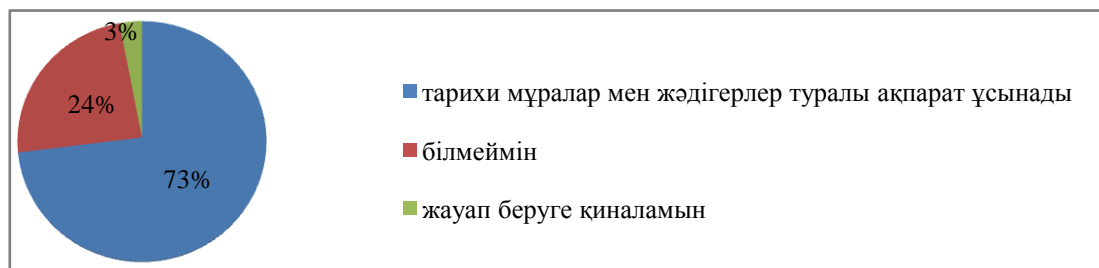
6-сурет. Респонденттердің «Ұлттық құнылықтарды қалыптастыруда виртуалды
мұражай әдісі қандай қызметтерді атқаруы тиіс?» деген сұраққа жауабы

Суретте көріп отырғанымыздай респондеттердің жауаптарының басым бөлігі оң көзқарасқа артқандығын, ал теріс көрсеткіші төмендегенін байқауға болады. Ендеше, оқу процесінде виртуалды мұражай арқылы ұлттық құндылықтарды қалыптастыруға ұсынылған жолдардың тиімділігі дәлелденді деуге негіз бар. Дегенмен де бұл нәтижемен шектелмей теріс көзқараста қалған білім алушылармен алдағы уақытта жұмыс жалғасын табады.

Қорытынды

Оқыту процесінде виртуалды мұражай әдісін қолдану арқылы ұлттық құндылықтарды қалыптастыру мәселесі өзекті әрі маңызды зерттеулердің бірі екендігіне көзіміз жетті. Бұл бағыттағы жұмыстар жүйелі дайындықты қажет етеді. Қазіргі таңда ұлттық құндылықтар білім беру жүйесінде аса маңызды рөл алатындықтан, оны ұлттық сана мен ұлттық мұра, ұлттық дәстүр, отбасы арқылы айқындап түсіндіру үшін, оның бағыттары мен компоненттерін оқыту үшін арнайы жолдарын ұсынудың маңызы зор деп білеміз. Зерттеу мәселесін талдау барысында ұлттық құндылықтарды виртуалды мұражай әдісі арқылы қалыптастырудың: бірінші — зерттеу мәселесінің теориялық негіздерін айқындау; екінші — ұлттық құндылықтарды қалыптастыруда виртуалды мұражай технологиясы арқылы (Батыс Қазақстан облыстық тарихи-өлкетану мұражайы, Ә. Қастеев атындағы Мемлекеттік өнер мұражайы) өнертанымдық бұйымдарды насихаттау; үшінші — ұлттық құндылықтарды қалыптастыруға бағытталған виртуалды (Әзірет Сұлтан Ұлттық-тарихи, «Таңбалы» тарихи-мәдени, Абайдың «Жидебай-Бөрілі» мемлекеттік) мұражайларды қолданудың жолдары анықталды. Сондай-ақ, ұлт жаңашырларының зерттеулерінде тіл, ұлт дәстүрі, сана, тәрбие, адамгершілік, ар-ождан және т.б. мәселелерінде айтылған пікірлері мен тұжырымдары біз үшін құнды болды.

Зерттеу нәтижесінде бірнеше ұсыныстарды ұсынайық:

– университеттің білім беру бағдарламаларына виртуалды мұражай әдісін арқылы ұлттық құндылықтарды қалыптастыруға бағытталған элективті курс пәндерін енгізу мүмкіндіктерін қарастыру;

– ұлттық құндылықтарды виртуалды технологияларды қолдану арқылы дәріптеуге бағытталған тәрбиелік форум, тренинг, дәріс, және т.б. іс-шараларды ата-ана, педагог, психолог мамандарымен бірлесе отырып өткізуді ұйымдастыру;

– болашақ білім алушылардың ұлттық құндылықтарын қалыптастыруды әдістемелік жұмыстың басты бағыты ретінде қамтамасыз ету.

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Д.М. Даулеталиева

Способы формирования национальных ценностей обучающихся методом виртуального музея

В целях определения актуальности нашего исследования были рассмотрены нормативные документы, в том числе «Справедливый Казахстан — честный гражданин», а также задачи, позволяющие профессионально развиваться и планировать патриотические организации, направленные на популяризацию национальных ценностей, предусмотренных законом «Об образовании». В учебном процессе был проведен теоретический анализ исследований ученых, изучавших значение формирования национальных ценностей методом виртуального музея. Целью исследования является определение путей формирования национальных ценностей обучающихся с помощью виртуального музейного метода. В исследовании приняли участие 32 обучающихся 2 курса, по направлению образовательной программы «Педагогика и психология» университета дружбы народов им. А. Куатбекова. Реализованы три этапа исследования (констатирующий, формирующий, контрольный). На этапе выявления получены первые результаты авторского опроса; на этапе формирования реализованы три способа формирования национальных ценностей методом виртуального музея: первый — определение теоретических основ проблемы исследования; второй — пропаганда искусствоведческих изделий с помощью технологии виртуального музея в формировании национальных ценностей (Западно-Казахстанская областная историко-краеведческая, Государственный музей искусств им. А. Кастеева); третий — использование виртуальных (национально-исторических, историко-культурных, государственных «Жидебай-Борили», «Абая») музеев, направленных на формирование национальных ценностей. Виртуальный музей рассматривается как важный инструмент в формировании национальных ценностей в духовном и познавательном направлении. Результаты контрольного эксперимента показали эффективность работы, проводимой на этапе формирования.

Ключевые слова: национальная ценность, виртуальная технология, музей, искусство, национальное сознание, история, культура.

D.M. Dauletalieva

Ways to form students' national values using the virtual museum method

To determine the relevance of our study, regulatory documents were reviewed, including "Fair Kazakhstan — Honest Citizen," as well as objectives supporting professional development and the planning of patriotic organizations aimed at promoting national values as stipulated by the law "On Education." A theoretical analysis was conducted of scholarly research on the significance of forming national values through the virtual museum method. The study aimed to identify ways to form students' national values using the virtual museum method. Thirty-two second-year students from the "Pedagogy and Psychology" program at A. Kuatbekov University of Friendship of Peoples participated. The research comprised three stages: ascertaining, formative, and control. Initial results from an author-developed survey were obtained at the ascertaining stage. During the formative stage, three methods were implemented: defining the theoretical foundations of the problem; promoting art history exhibits through virtual museum technology to form national values (with examples such as the West Kazakhstan Regional Historical and Local Lore Museum and the A. Kasteev State Museum of Arts); and utilizing virtual museums (national-historical, historical-cultural, and state museums such as "Zhidebai-Borili" and "Abai") aimed at fostering national values. The virtual museum is regarded as a vital tool in shaping national values in both spiritual and cognitive aspects. Results from the control experiment demonstrated the effectiveness of the formative stage activities.

Keywords: national value, virtual technology, museum, art, national consciousness, history, culture.

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Strategies for development of STEM competencies of new generation future specialists

In the rapidly changing landscape of the 21st century, proficiency in Science, Technology, Engineering, and Mathematics (STEM) has become essential for the future workforce. This research focuses on examining the development of STEM competencies in upcoming professionals through effective approaches, specifically the inquiry-based learning (IBL) strategy. The investigation delves into successful strategies for cultivating STEM skills in the next generation of experts, highlighting the significance of inquiry-based teaching strategy. The paper also examines the role of students and educators in creating an environment conducive to STEM competency development. By aligning educational practices with the demands of the modern workforce, these strategies aim to produce adaptable, innovative, and skilled professionals capable of addressing global challenges and driving sustainable progress. This program demonstrates how inquiry-based learning method can effectively impact on the new generation of future specialists. The study emphasizes the importance of an inquiry-based learning strategy for the development of STEM competencies, which enhances educators' and students' practical skills as well as their readiness to study and assume personal accountability for their education. The findings demonstrated that by enhancing their STEM knowledge and competencies, the IBL strategy program benefited both educators and students.

Keywords: STEM competencies, IBL strategy program, key strategies, development, students, educators, future specialists of new generation, educational practice.

Introduction

The term "STEM" has evolved into a foundational competency based on interdisciplinary knowledge of its founding disciplines, characterized by the capacity for innovative thinking and the ability to design and implement effective solutions.

STEM competence is characterized by the capacity to integrate different knowledge, skills and abilities to identify and solve problems typical for the domain across a wider range of contexts [1].

STEM competence refers to an individual's ability to apply STEM knowledge, skills, and attitude appropriately in everyday life, the workplace, or educational context [2].

STEM competencies have been defined as the integration of knowledge, skills, and dispositions that enable individuals to solve problems, think critically, and innovate within and across STEM disciplines.

The model of the STEM competency paradigm that is being presented according to H. Jang [3]. The 37 criteria are divided into three domains: work activities, knowledge, and skills. The three core STEM competency areas — skills, knowledge, and work activities — were organized into the following categories, each encompassing a substantial number of specific criteria: problem solving (PS), working with people (WP), working with technology (WT), and working with organizational systems (WoS) (Table 1).

T a b l e 1

Framework of STEM competencies

Domain	Problem Solving	Working with People	Work with Technology	Work with Organizational System
Skills	Critical thinking, Complex problem solving, Creative thinking	Communication skills, Ability to work in team, Social intelligence, Emotional intelligence	Installation of equipment, Programming (Network & System Administration)	Systems analysis, Systems Evaluation, Decision making

Domain	Problem Solving	Working with People	Work with Technology	Work with Organizational System
Knowledge	English language, Mathematics, Computers and Electronics, Engineering and Technology, Administration and Management, Customer and personal service, Education and training	Knowledge of regularities, principles and methods of teaching, Assessment of learning outcomes, Getting feedback, Knowledge of leadership technologies, Knowledge of teamwork techniques	Computer Science, Basics of microelectronics	Knowledge of management principles
Work Activities	Getting information, Evaluation of information, Making decisions and Solving problems, Coordinating the Work and Activities of others	Developing and Building Teams, Providing Consultation and Advice to others, Coaching and Developing others, Guiding, Directing and Motivating Subordinates	Interacting with Computers, Analyzing Data and Information, Judging the Qualities of Things, Services, or People	Developing Objectives and Strategies, Monitoring Processes, Materials, or Surroundings, Compliance with Standards
Stem Competencies	Problem solving skills	Communication skills	Technological and engineering skills	System skills, resource management skills

The rapid advancement of technology and the growing demand for innovative solutions have elevated the importance of STEM (Science, Technology, Engineering, and Mathematics) education in preparing future specialists for a dynamic and complex global landscape. The current era is characterized by swift technological progress, increased global interconnectedness, and a constantly changing employment landscape, all of which necessitate a workforce proficient in advanced STEM (Science, Technology, Engineering, and Mathematics) skills. These disciplines are crucial for driving innovation, economic growth, and addressing complex worldwide issues such as climate change, healthcare, and technological transformation. As industries increasingly depend on STEM-based solutions, developing expertise in these areas has become a top priority for educators, policymakers, and industry leaders. While STEM education has gained national attention as an effective means of cultivating essential 21st-century skills, current approaches have not yielded the desired outcomes. The primary reason for this shortfall is the lack of a clear and structured explanation of effective strategies for developing STEM competencies.

The next generation of professionals must not only possess technical knowledge but also exhibit creativity, critical thinking, problem-solving abilities, and adaptability. Traditional educational methods are no longer adequate to meet the diverse and dynamic requirements of the STEM workforce. This calls for a shift towards innovative strategies that promote interdisciplinary learning, hands-on experiences, and collaboration with industry stakeholders. By integrating cutting-edge technologies, real-world applications, and personalized learning paths, educators can empower students to become proactive contributors to the global economy and society.

STEM education has garnered nationwide focus as an effective approach for developing essential competencies for future talents. Despite this recognition, current STEM educational practices have not achieved the intended outcomes. The primary issue lies in the absence of a clear and structured explanation of what strategies are effective in the development of STEM competencies.

Furthermore, studies have indicated that integrated education in science, technology, engineering, and mathematics (collectively referred to as STEM) is fundamental to preparing individuals who are both knowledgeable and technologically proficient. [4]. As a result, STEM education has received increased attention and interest in recent years, with interest in STEM design models exploding across the educational landscape, leading to curriculum redesign through STEM initiatives. In these models, the role of future professionals in the next generation is one of the most important factors in ensuring excellence in STEM education [5]. Future professionals proficient in STEM must demonstrate both a deep knowledge of STEM subject content and mastery of all the necessary skills and competencies. As a result, the professional development

of future professionals is critical to the development and implementation of STEM education concepts and programs [6].

Consequently, this paper explores strategies for developing STEM competencies in the future specialists of new generation. This study emphasizes the significance of inquiry-based learning strategy for developing of STEM competencies of future professionals.

Researchers have explored various strategies for fostering these competencies addressing both theoretical and practical approaches (Table 2). This literature review highlights key strategies identified in scholarly research and their implications for educational practices.

Table 2

Strategies for the development of STEM competencies

Strategy	Brief description	Exemplary References
Inquiry-based learning (IBL)	A student-centered approach focusing on the asking of questions, critical thinking, and problem solving, enables students to develop skills needed throughout their whole lives. As such, it helps students to cope with their problems	(Tseng, Tuan, & Chin, 2012) [7].
Project-based learning (PjBL)	A student-centred form of instruction which is based on three constructivist principles: learning is context-specific, learners are involved actively in the learning process and they achieve their goals through social interactions and the sharing of knowledge and understanding	(Cocco, 2006) [8].
Problem-based learning (PBL)	An instructional method in which students learn through facilitated problem solving that centers on a complex problem that does not have a single correct answer	(Hmelo-Silver, 2004) [9].
Cross-Disciplinary Approaches	The social character of cross-disciplinary science is clear — it is conducted by diverse people who must interact, make decisions, and take collective action	(Magnus, 2007) [10].
Use of Technology	The use of technology includes not only machines (computer hardware) and instruments, but also involves structured relations with other humans, machines, and the environment	(Isman, 2012) [11].

In this Table, we present examples of strategies that are revolutionizing education worldwide, bridging the gap between theoretical knowledge and real-world application.

Above-described approaches like project-based, problem-based, cross-disciplinary, use of technology and inquiry-based learning strategies play a crucial role in developing the skills and competencies in STEM fields and guide future specialists in the digital learning environments. This study demonstrates how these effective strategies can harness technological advantages to further expand educational possibilities. We suggest that professionals can enhance their subject knowledge in an engaging manner within these contexts, while simultaneously developing STEM knowledge and competencies. Overall, we emphasize an inquiry-based learning (IBL) strategy that taps into future specialists' inherent motivation, effort, and resilience. We argue that by participating in the program outlined in this work, future specialists will develop a stronger sense of their own agency, which can have significant, transferable effects on their ongoing learning experiences and life and career goals.

Inquiry-Based Learning (IBL) is a student-centered educational approach that emphasizes active engagement and critical thinking. In IBL, students are encouraged to ask questions, investigate problems, and

develop solutions through exploration and research. This method contrasts with traditional instruction, where teachers primarily deliver factual information. Instead, IBL positions students as active participants in their learning journey, fostering deeper understanding and retention of knowledge.

According to Yang (2013), to enhance students' employability after graduation, practice-oriented courses should be designed to meet industry demands and societal expectations. The course content should focus on developing students' professional qualities and innovative abilities. This approach allows educational institutions to bridge the gap between education and employment, resulting in improved educational and economic outcomes [12].

Regarding the enhancement of STEM education, researchers have advocated for the use of inquiry-based teaching methods to encourage technological exploration, elevate teaching practices, and bolster the effectiveness of STEM instruction [13, 14, 15, 16].

An examination of scientific and educational literature on the topic has revealed multiple aspects of training specialists for the new era. Various researchers have suggested that higher education institutions should strengthen industry-academia partnerships, provide practice-oriented courses, and enhance educators' practical skills by improving their communication abilities to effectively address the gap between theoretical knowledge and practical application [17, 18, 19, 20, 21, 22]. So, based on these conducted researchers we decided to choose IBL strategy as the most effective method in the development of STEM competencies.

The Inquiry-Based Learning (IBL) strategy program for developing STEM competencies among Computer Science (CS) students and educators was structured around problem-solving, project-based learning, and industry collaboration. The curriculum integrated real-world challenges, coding projects, AI and data science applications, and interdisciplinary teamwork to enhance critical thinking and technical proficiency. Implementation involved interactive workshops, hands-on labs, mentorship programs, and industry partnerships, ensuring alignment with current technological trends. Educators were trained in student-centered teaching methodologies, fostering a research-driven learning environment. The program was assessed through self-evaluations and competency-based assessments, demonstrating significant improvement in STEM knowledge, creativity, and problem-solving skills.

Methods and materials

The following phases were involved in the development of an IBL program strategy based on the growth of STEM competencies at Karaganda Buketov University, which is based on the faculty of Mathematics and Information Technology: designing, constructive, analytical, and corrective. Strategic, conceptual, and functional analysis were all part of the designing process. The formulation of broad goals for future experts' professional retraining based on the growth of their STEM competencies was taken into consideration by strategic analysis. The theoretical underpinnings of STEM abilities were identified at the conceptual analysis level. Functional analysis made it possible to find useful initiatives and ascertain the substance of STEM-oriented work.

To evaluate the efficacy of the IBL program strategy for STEM competency development, we carried out an analytical-adjustment stage pilot study and One-Sample Kolmogorov Smirnov Test.

Results and discussion

The Inquiry-Based Learning (IBL) strategy program was provided by the independent work of Computer Science (CS) students and educators at the Karaganda Buketov University over the course of the 12-week semester by processing of modern scientific sources, communication with STEM specialists during round tables, seminars, conferences, discussion panels, webinars, and distance learning on various e-platforms. This program consists of 3 phases: 1) Exploration & Problem Identification (Weeks 1–3); 2) Experimentation and Problem-Solving (Weeks 4–8); 3) Reflection and Real-World Application (Weeks 9–12).

This program for developing STEM competencies among Computer Science (CS) students and educators was structured around problem-solving, project-based learning, and industry collaboration. The curriculum integrated real-world challenges, coding projects, AI and data science applications, and interdisciplinary teamwork to enhance critical thinking and technical proficiency. Implementation involved interactive workshops, hands-on labs, mentorship programs, and industry partnerships, ensuring alignment with current technological trends. Educators were trained in student-centered teaching methodologies, fostering a research-driven learning environment. The program was assessed through self-evaluations and competency-based assessments, demonstrating significant improvement in STEM knowledge, creativity, and problem-solving skills.

32 practicing educators and 24 (CS) students were the participants of the experiment. The H. Jang model is the foundation of the STEM competency paradigm that is being presented. The 37 requirements are divided into three domains: work activities, knowledge, and skills. Universities are the outcome of the criteria selection process. We recommended educators and students to assess their level of STEM competency development at the initial (diagnostic) stage. The assessment was conducted using a 5-point Likert-type scale in accordance with the standards put forth by H. Jang.

We divided the 37 primary criteria — which were spread over the three STEM competency areas of skills, knowledge, and work activities — among the substantial number of criteria: problem solving (PS); working with people (WP); working with technology (WT); working with organizational system (WoS) were the categories into which each area consolidated the criteria, as outlined in Table 1.

The average value of each group of criteria was calculated for each respondent based on the points by respondent (Table 3).

<div align="right">T a b l e 3</div>

Mean values of groups of criteria

Groups Responders	Points by respondent			
	PS	**WP**	**WT**	**WOS**
1	0,53	0,35	0,41	0,29
2	0,39	0,40	0,47	0,51
…				
56	0,55	0,58	0,66	0,51

The average score generated by respondents through self-evaluation of all 37 questions served as a latent measure of STEM competency development. The normalized index In resulted from calculating the ratio.

$$I_n = \frac{s_i - N}{s_{max} - N}$$

Where "s_i" represents total points by respondent "i", "s_{max}" denotes maximum points available, "N" is a number of questions. The normalized index was calculated based on the total respondent's points during self-assessing all 37 questions. The mean values of normalized indexes obtained on the first stage are given in Table 4.

<div align="right">T a b l e 4</div>

Normalized Indexes of Criteria Groups (Diagnostic Stage)

	PS	**WP**	**WT**	**WOS**
Normalized index	0,47	0,49	0,43	0,53

The development stage of STEM competencies revealed itself as a latent indicator through scale-based evaluation. This paper uses a scale of importance (0-1) based on normalized values from the ONET database, the official information system of the US Department of Labor. A similar gradation was also used in the study by H. Jang (2015) to identify key competencies in STEM professions based on ONET. The scale is interpreted as follows:
- 0 — 0.24 — critical;
- 0.25 — 0.49 — low;
- 0.5 — 0.74 — sufficient;
- 0.75 — 1.0 — high

The initial study results demonstrate that students and educators possess low STEM competency levels according to self-assessment data. We evaluated the normality of each sample distribution from Table 3 to select an appropriate statistical method for processing study results. Table 5 displays the One-Sample Kolmogorov Smirnov Test results for normality and Figure 1 illustrates the distribution graphically. This test is a non-parametric statistical test used to determine whether a given sample follows a specified probability distribution (e.g., normal, uniform, exponential).

Table 5

Checking the results for the normality of each of the samples (diagnostic stage)

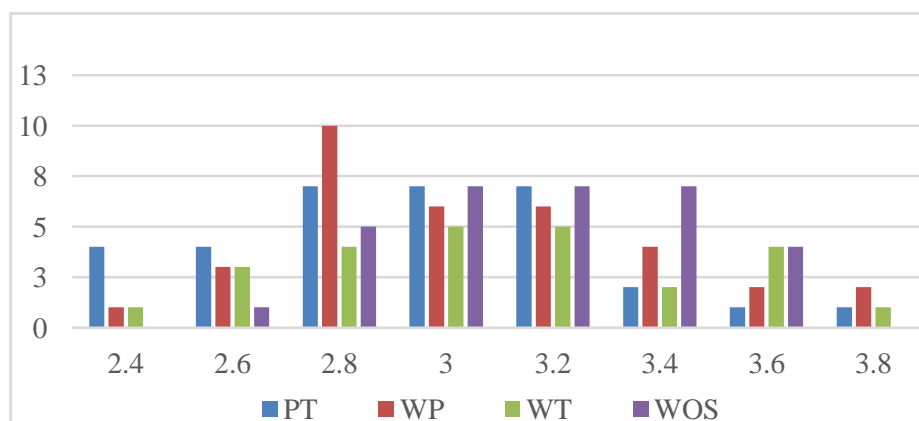|		PS	WP	WT	WOS
Normal Parameters	Mean Std.	2,8791	2,9713	3,0191	3,0806
	Deviation	0,31038	0,35051	0,34940	0,32123
Most Extreme Differences	Absolute	0,102	0,135	0,115	0,092
	Positive	0,092	0,135	0,115	0,054
	Negative	-0,102	-0,086	-0,089	-0,092
Test Statistic		0,102	0,135	0,115	0,092
Asymp. Sig. (2-tailed)		0,200	0,144	0,200	0,200

Figure 1. The grouping of respondents according to the average
of diagnostic criteria values demonstrates the distribution.

The combination of tabular data and distribution graphs enables us to confirm that the samples follow a normal distribution pattern. Our inquiry-based learning strategy program enabled us to develop STEM competencies for both students and educators during the second formative stage of the study's implementation phase. The program trained university experimental groups of practicing students and educators through hands-on projects while also providing industry mentorship and collaborative research opportunities so participants could explore new technologies to develop innovative solutions and practice applying Computer Science to interdisciplinary STEM problems. Students and educators reassessed their STEM competency components during the third summative phase. At this stage the data samples showed a normal distribution according to Table 6 and Figure 2.

T a b l e   6

Checking the results for the normality of each sample (formative stage)

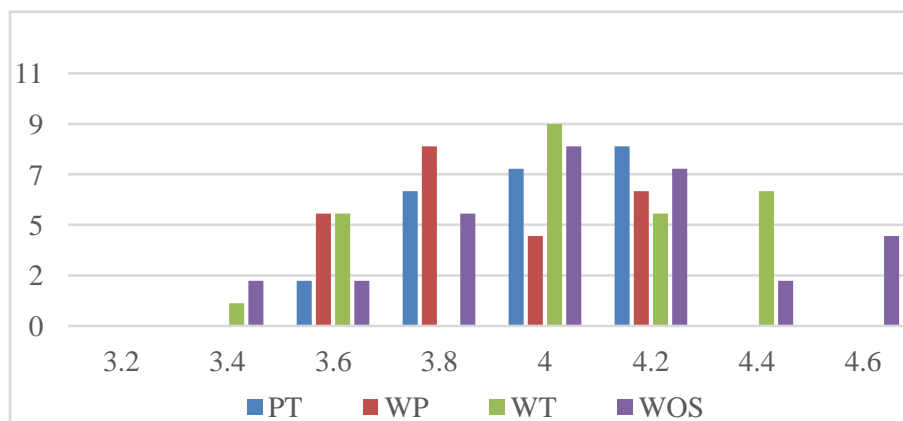|		PS	WP	WT	WOS
Normal Parameters	Mean Std.	4,0214	3,9391	4,0162	3,9531
	Deviation	0,26563	0,31254	0,40712	0,37995
Most Extreme Differences	Absolute	0,131	0,119	0,141	0,080
	Positive	0,133	0,116	0,075	0,070
	Negative	-0,067	-0,090	-0,113	-0,054
Test Asymp.		0,143	0,129	0,145	0,088
Sig. (2-tailed)		0,178	0,200	0,103	0,200

Figure 2. Distribution of respondents by the mean value of groups of criteria (formative stage)
The results of calculations of average values of normalized indexes are given in Table 7.

T a b l e   7

Normalized indexes of criteria groups (formative stage)

	PS	WP	WT	WOS
Normalized index	0,78	0,76	0,84	0,73

Comparing the values of the data of the normalized indexes, presented in Tables 4 and 6, we can state the increase in self-evaluation of STEM competencies of students and educators (Figure 3).
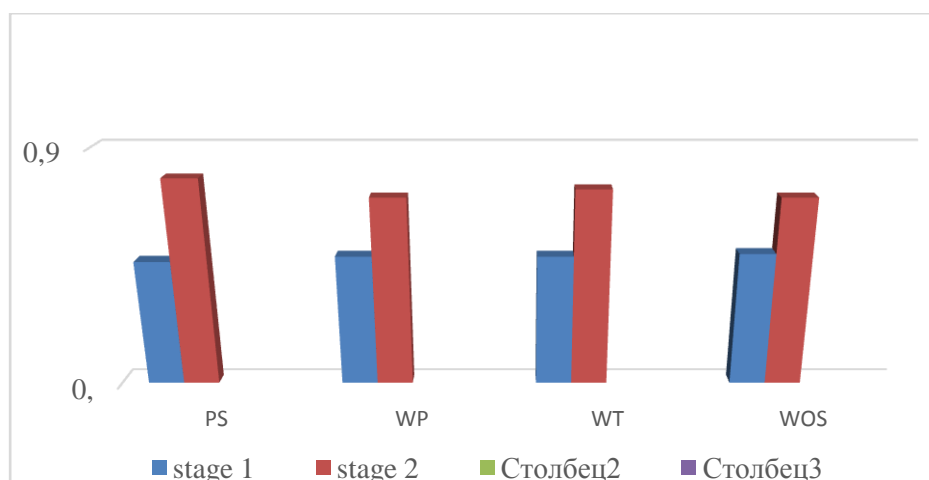
Figure 3. Comparison of normalized indexes (diagnostic stage, formative stage)

This comparison figure demonstrates us before and after outcomes of our experimental work which confirms the effectiveness of the proposed IBL strategy program for CS students and educators based on the development of STEM competencies of practicing future specialists of new generation.

Conclusion

This study aimed to investigate how inquiry-based learning strategy can enhance STEM competencies amomg future new-generation specialists. This study implemented an IBL strategy program to promote knowledge-action integration in higher education and advance STEM academic performance for both students and educators through industry-academy practice. Both students and educators responded to the program with positive and affirmative feedback. Positive changes were seen both in practical exploration abilities and among students becoming more willing to learn and manage their own educational experience. The study concluded that practical exploration training effectively develops STEM skills in new generation specialists. This research suggests that educational institutions should expand the implementation of inquiry-based teaching methods.

Thus, STEM education aims to increase learning motivation among future specialists in STEM subjects while enhancing STEM literacy and teaching students how to apply STEM knowledge for solving real-world problems. The foundation of national economic progress lies in science and technology human resources which requires future professionals to receive encouragement to enter STEM fields and obtain support to enhance their academic success in science, technology, engineering and mathematics as this will largely contribute to economic growth and global competitiveness.

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Д. Дулаткызы, Г.Н. Акбаева, С.В. Ромоненко

Жаңа буын болашақ мамандарының STEM-құзыреттіліктерін дамыту стратегиялары

Қазіргі қарқынды дамып келе жатқан XXI ғасырда ғылым, технология, инженерия және математика (STEM) салаларында құзыреттілік болашақ жұмыс күші үшін аса маңызды. Бұл зерттеу болашақ мамандардың STEM-құзыреттіліктерін дамытуға бағытталған тиімді тәсілдерді, атап айтқанда, зерттеуге негізделген оқыту (IBL) әдісін зерттеуге арналған. Зерттеу STEM-құзыреттіліктерін дамытуға арналған табысты стратегияларды қарастырып, зерттеуге негізделген оқыту стратегиясының маңыздылығын көрсетеді. Мақалада сонымен қатар, STEM-құзыреттіліктерін дамытуға қолайлы орта қалыптастырудағы студенттер мен оқытушылардың рөлі қарастырылған. Білім беру тәжірибелерін қазіргі еңбек нарығының талаптарына сәйкестендіру арқылы бұл стратегиялар икемді, жаңашыл және жоғары білікті мамандарды дайындауға бағытталған. Бұл бағдарлама зерттеуге негізделген оқыту әдісінің болашақ мамандардың жаңа буынына тиімді әсер ете алатынын көрсетеді. Зерттеу STEM-құзыреттіліктерін дамыту үшін зерттеуге негізделген оқыту стратегиясының маңыздылығын атап көрсетеді, бұл оқытушылар мен студенттердің тәжірибелік дағдыларын жақсартып қана қоймай, олардың оқуға деген дайындығы мен білім алу жауапкершілігін арттырады. Зерттеу нәтижелері STEM-білімдері мен құзыреттіліктерін арттыру арқылы IBL стратегиясы бағдарламасы оқытушылар мен студенттер үшін пайдалы болғанын көрсетті.

Кілт сөздер: STEM-құзыреттіліктері, IBL стратегиялық бағдарламасы, негізгі стратегиялар, дамыту, студенттер, оқытушылар, жаңа буын болашақ мамандары, оқу практикасы.

Д. Дулаткызы, Г.Н. Акбаева, С.В. Ромоненко

Стратегии развития STEM-компетенций будущих специалистов нового поколения

В современном, быстро развивающемся мире XXI века владение наукой, технологиями, инженерией и математикой (STEM) становится необходимым условием для будущей рабочей силы. Данное исследование посвящено изучению развития STEM-компетенций у будущих специалистов с помощью эффективных подходов, в частности метода обучения, основанного на исследовании (IBL). В работе рассматриваются успешные стратегии формирования STEM-навыков у нового поколения специалистов, подчеркивая значимость исследовательского подхода в образовательном процессе. В статье также анализируется роль студентов и преподавателей в создании среды, способствующей развитию STEM-компетенций. Выравнивая образовательные практики в соответствии с требованиями современного рынка труда, предложенные стратегии направлены на подготовку адаптивных, инновационных и квалифицированных специалистов, способных решать глобальные проблемы и способствовать устойчивому развитию. Программа демонстрирует, как метод исследовательского обучения может эффективно влиять на формирование нового поколения специалистов. Исследование подчеркивает важность исследовательской стратегии обучения для развития STEM-компетенций, что не только улучшает практические навыки преподавателей и студентов, но и повышает их готовность к обучению, а также личную ответственность за образование. Полученные результаты показали, что программа стратегии IBL оказалась полезной как для преподавателей, так и для студентов, способствуя развитию их STEM-знаний и компетенций.

Ключевые слова: STEM-компетенции, стратегическая программа IBL, основные стратегий, развитие, студенты, преподаватели, будущие специалисты нового поколения, учебная практика.

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Implementation and approbation of the convergent model of professional foreign language competence in university conditions

The article discusses the theoretical and practical aspects of implementing a convergent model of professional foreign language competence into the educational process at a university, which involves integrating informal education into the institutional educational environment. Based on current research, the authors justify the use of a convergent approach to foreign language training for future specialists as a means of creating a flexible and adaptive educational system that combines the best aspects of both learning formats. The key components of the model were presented, its testing methods were outlined, and the results of its implementation were analyzed. The significance of using the convergent approach to develop foreign language competence in students was substantiated. The aim of this article is to present the results of implementing and testing the convergent model of professional foreign language competence at a university, as well as to analyze its effectiveness. To achieve this goal, the following tasks were formulated: 1) to describe the theoretical foundations of the convergent approach in foreign language teaching; 2) to present a model of professional foreign language competence based on the convergence of various methods; 3) to test the model and assess its effectiveness. As a result of the study, the conclusion was made that the implementation of the convergent model of professional foreign language competence at the university contributes to more effective language acquisition, increased student motivation, and the integration of various methods into the educational process.

Keywords: convergence, professional foreign language competence, convergent model, pedagogical innovations, formal education, informal education, informal foreign language education.

Introduction

Modern requirements to the training of specialists under globalization asserts high demands on the level of foreign language proficiency. However, Kazakhstan occupies a weak position in the ranking of countries in terms of English language proficiency [1]. In this regard, the task of the development and implementation of innovative approaches and teaching methods aimed at improving students' professional foreign language competence remains relevant. The analysis of concepts, theories and scientific provisions leads to the conclusion that professional foreign language training is at the intersection of educational, cultural and technological trends.

One of the promising directions is the convergent approach, which involves the integration of formal and informal education [2]. This approach contributes to the creation of a flexible and adaptive educational system combining the best aspects of both learning formats. This approach identifies the key aspects and challenges facing modern foreign language education.

The basis of professional foreign language training is not only the teaching of a foreign language, but also the development of the ability to use it in professional activities. This requires a comprehensive approach including linguistic competence, cultural awareness, intercultural communicative competence and professional knowledge. The convergence of formal and informal education provides a variety of ways to achieve these goals: formal education guarantees a standardized level of knowledge, while informal education promotes the development of individualized competences [3].

The practical implementation of this approach requires new methods of assessment and accreditation. The main issue with informal learning is its recognition within traditional educational systems. A solution may lie in the development of flexible assessment systems that take into account the diversity of learning experiences and competencies acquired outside formal educational environments [4].

One of the key challenges is the active integration of digital technologies into the educational process. Digitalization opens new opportunities for bridging formal and informal learning through online courses, virtual exchanges, and interactive simulations. These technologies allow for immersion in the target culture

and professional environment without leaving home. However, their effective use requires overcoming technical and methodological barriers, including the development of high-quality educational resources and training educators to use them [5].

An important issue remains the sustainability and accessibility of informal education. Since it largely depends on the initiative of learners and the availability of resources, unequal access to educational opportunities is possible. Therefore, strategies need to be developed to ensure equal access to resources, regardless of the learners' socio-economic status [6].

The convergence of formal and informal education provides opportunities for innovation in the educational process, combining traditional educational goals with real professional practice. Supporting this convergence requires research aimed at identifying best practices, as well as the development of policies and standards that facilitate the recognition and validation of informal learning. It is important to consider cultural and individual differences to ensure that educational strategies are inclusive and adaptive [7].

The theoretical analysis of research in the field of professional foreign language training in the context of the convergence of formal and informal higher education highlights the complexity and multidimensionality of this issue. It requires a deep understanding of linguistic, cultural, pedagogical, and technological aspects, as well as a readiness for innovation and adaptation to the changing educational landscape. The convergence of formal and informal education offers unique opportunities to enhance the flexibility and individualization of professional foreign language training, making it more relevant to contemporary demands. This requires educational institutions, teachers, and learners to integrate new methods and forms of interaction [8].

For the effective implementation of the convergent approach, it is necessary to develop mechanisms for interaction between formal and informal learning, including partnerships between universities, industry organizations, SPA and online platforms. An important tool in this process is the learners' portfolio, which records their achievements within both learning formats, helping to recognize their competencies in the labor market [9].

Raising awareness about the value of informal learning plays a key role in its recognition. This requires changes in educational policy and practice, as well as a rethinking by society of the importance of self-education. Supporting lifelong learning is becoming increasingly important, as it helps specialists adapt to the changing demands of the professional environment.

In the context of professional foreign language education [10], convergence means combining various educational resources and methods to optimize the learning process. While communicative learning was once seen as opposed to the traditional grammar-translation method, today we can talk about differences between institutional (programmatic) and free communicative learning. The latter is based on complete immersion in the language environment, where communication is not regulated by a pre-established program, which is a key distinction between formal and informal language education.

J. Decius, J. Dannowsky, and N. Schaper note that students acquire knowledge not only in formal courses but also independently, outside the classroom [11]. When forming professional foreign language competence within the framework of informal education, it is necessary to go beyond traditional communicative exercises, providing learners with the opportunity to solve real-world problems, think critically, and find alternative solutions. In this case, language fulfills its primary function — a means of expressing and transmitting thought.

A. Ratana-Ubol and W. Soopunyo emphasize that informal education creates an open educational environment that fosters lifelong learning, the development of self-awareness, independence, and a love for learning [12; 558].

The convergence of formal and informal education offers several advantages:

- creation of a flexible educational system that takes into account the individual needs of students. They can combine traditional courses, online learning, self-education, and professional internships.

- development not only of academic knowledge but also of key competencies necessary for successful adaptation in the modern world (communication, critical thinking, teamwork, etc.).

- possibility of forming individualized educational trajectories that align with the students' interests and career goals.

Thus, the convergence of formal and informal education is an important direction in the development of the educational system, contributing to the creation of more effective and adaptive learning conditions. This combination allows for the development of a wide range of skills and competencies necessary for successful professional activity in a rapidly changing world.

The study concludes that the integration of formal and informal education enhances the quality of professional foreign language training for future specialists. During the research, a convergent model for forming the professional foreign language competence of students in language and non-language majors was developed and tested, confirming its effectiveness during experimental implementation.

Methods and materials

To achieve the set goal, a complex of scientific research methods was used, including theoretical analysis of scientific sources, modeling methods, statistical processing of the obtained data, and experimental research.

The scientific justification and development of the convergent model for forming professional foreign language competence in higher education students is a complex and multifaceted process that requires an interdisciplinary approach and consideration of current educational trends.

In developing the convergent model for professional foreign language competence of students in language and non-language educational programs, we followed the stages of model construction accepted in modeling theory and took into account the characteristics of the model related to the logic of its construction.

The convergent model of professional foreign language competence for students in language and non-language educational programs involves a set of interconnected components (blocks) that are implemented in the learning process: *target*, *methodological-content*, and *evaluation-resultant* components.

Target block. The model is based on the social and state order, which is determined by the need for training specialists in language and non-linguistic educational programs. The social order is dictated by the modern requirements of the labor market, international interaction and professional mobility, while the state order is focused on training specialists with high professional foreign language competence within the framework of educational and economic policy.

The *methodological-content* block implements various approaches and principles that should guide the formation of foreign language competences. The scientific basis of this model is based on the competence, convergent, communicative, multimodal, interdisciplinary approaches, which promote the integration of different components of training: linguistic, professional and intercultural. The convergent model combines theoretical training with practical skills, making training flexible and adaptable to the changing conditions of the professional environment. For the effective implementation of the proposed model, we use the principles of convergence, individualization, contextualization, interactivity and flexibility, which ensures the adaptation of educational programs to the needs of students.

When developing the convergent model of professional foreign language competence, the most important step is defining the set of competencies required for successful professional interaction in a foreign language.

Based on the obtained data, we have identified a list of key competencies and skills for their inclusion in the model.

1. *Foreign Language Component.* The foreign language component includes the linguistic aspects necessary for professional foreign language interaction: mastering professional terminology, communicative strategies, developing skills in conducting professional dialogues, negotiations, presentations, as well as responding appropriately to intercultural differences, cultural nuances in communication, and working with authentic materials.

2. *Technological Component.* The technological component involves the ability to apply modern digital tools to enhance the effectiveness of learning: artificial intelligence and chatbots, mobile applications, websites, online case studies, personalized learning paths, and gamification.

3. *Development of Soft Skills.* Soft skills refer to universal skills necessary for working in an international professional environment: teamwork, creative thinking, emotional intelligence, presentation and public speaking skills, critical thinking, and time management.

4. *Practical Convergence.* The convergence of formal and informal educational environments, formal and informal methods (e.g., combining academic lectures and seminars with online clubs, workshops, and language marathons), organizing quests, excursions, master classes, and open-air events, where participants actively use the language while interacting with native speakers both online and offline.

These components form the basis for the effective development of professional foreign language competence. Such comprehensive training not only promotes mastering a foreign language at a professional level but also prepares learners for its use in specific professional contexts.

An important methodological guideline for our research is the idea that the qualitative and substantial characteristics of any system are determined by its conditions. In this regard, the next step was the development of pedagogical conditions for the convergence of formal and informal foreign language education for students at Kazakhstani universities. Based on the fact that the convergence of formal and informal foreign language education is grounded in the principles of lifelong learning, as well as the analysis of the potential for this convergence, we identified a set of pedagogical conditions for the convergence of formal and informal foreign language education.

Condition 1. Construction and implementation of individualized learning paths for students to meet their educational needs. The creation and implementation of individualized learning paths is achieved through detailed diagnostics of foreign language proficiency levels and analysis of each student's educational needs. The introduction of adaptive learning platforms, the use of electronic portfolios, and mentoring support allow for the development of personalized learning trajectories that align with the professional and personal goals of the students.

Condition 2. Polypositionality of the teacher. When implementing the convergence of formal and non-formal foreign language education, the teacher fulfils several pedagogical roles, using different technologies and methods of work, such as a foreign language teacher; tutor (helps the student to create an individual educational route and increases the efficiency of its implementation); coach (reveals the potential of the student's personality); personal growth coach (helps the student with time management, discipline and motivation for further activity); trendologist.

Condition 3. Ensuring the integrity of professional foreign language training through the convergence of formal and informal foreign language education. This pedagogical condition is realized by integrating formal educational programs with additional opportunities for informal learning, such as student participation in language clubs, conferences, international projects, excursions, travel, internships, online courses, and professional competitions. This expansion of learning boundaries contributes to immersing students in a real professional foreign language environment, thereby developing their ability to apply the language in practice.

Condition 4. Integration of teaching methods. When integrating teaching methods, various teaching methods or educational strategies are combined to achieve more effective results in accordance with the needs of the learners.

Condition 5. Readiness for students' educational choice. Educational choice is "an important factor determining educational achievements" when students must choose paths that lead them to obtaining a quality education [13].

Condition 6. Digitalization and multimodal approach. This condition promotes the use of various tools and materials that combine different forms of digital multimedia content in the learning or communication process, making it more accessible, engaging, and suitable for various learning styles of students [14].

Condition 7. Integration of foreign language elements into curricula. When integrating foreign language elements into curricula, components of a foreign language are included to enrich the learning experience and support students' language development. This includes authentic texts such as articles, stories, or news in the foreign language for reading and discussion in the classroom; audio and video materials created in the foreign language; tasks where students can use the foreign language for projects, presentations, or research; and combining foreign language study with other subjects, allowing students to apply language skills in various contexts.

Condition 8. Interdisciplinary courses. Interdisciplinary courses integrate knowledge from different fields to gain a deeper understanding of complex problems or topics.

Condition 9. Professional support for teachers. Professional support for teachers involves providing them with various resources, tools, training, and other forms of development to enhance their interdisciplinary competencies, pedagogical skills, teaching effectiveness, and overall professional growth.

The evaluation-resultant block is aimed at determining the level of formation of professional foreign language competence. The evaluation criteria are as follows:

1) *Motivational criterion*: The level of students' interest in learning a foreign language, their desire for professional development, including in a foreign language.

2) *Knowledge-based criterion*: The volume and depth of knowledge in the foreign language, mastery of terminology, and understanding of the cultural aspects of communication.

3) *Practical criterion*: The ability to apply knowledge in real and artificially created foreign language communication situations, the level of proficiency in oral and written communication.

4) *Individual-activity criterion*: The level of autonomy in the learning process, students' ability to self-organize and plan their educational activities.

5) *Subjective criterion*: Self-assessment of the level of proficiency in professional foreign language skills and satisfaction with the learning process.

The evaluation was carried out on three levels: low, medium and high.

Having scientifically substantiated the developed convergent model of professional foreign language competence of higher school students, we started to solve the tasks of experimental research on its approbation, which included:

- complex diagnostics of the current state of professional foreign language training;

- approbation of the convergent model of professional foreign language competence of higher school students, namely on language and non-linguistic educational programs;

- analysis of the obtained results of professional foreign language training in the conditions of convergence of formal and non-formal higher education.

The following types of works were carried out at the *ascertaining stage*:

1) in order to actually confirm the existence of the research problem in the practice of foreign language training of students of language and non-linguistic educational programs and the need to build a convergent model of professional foreign language competence of students:

- diagnostics of the teaching staff's awareness of the peculiarities of informal education and advantages of convergence of formal and informal education;

- diagnostics of students' educational needs in providing conditions of convergence of formal and informal higher education;

2) in order to determine the starting positions of the experimental research and to identify the quality of foreign language training of higher school students:

- diagnostics of the initial level of the foreign language competence of the students of higher education.

The *formative stage* of the experimental research involved the implementation and integration of the developed convergent model of professional foreign language competence into the educational process for university students.

At *the control-analytical stage* of the experimental research, a repeated diagnosis of the formation of professional foreign language competence of students was carried out in order to identify the dynamics of the results and assess the effectiveness of the developed convergent model of professional foreign language training for university students.

Results and Discussion

The basis for conducting the experimental research to test the developed model of professional foreign language training for university students in the context of the convergence of formal and informal higher education were:

1. Language educational programs:

- Educational program 6B01705 — Foreign language: two foreign languages at the Faculty of Foreign Languages, Karaganda Buketov University (Karaganda, Kazakhstan);

- Faculty of Foreign Languages, Novosibirsk State Pedagogical University (Novosibirsk, Russia).

2. Non-linguistic educational programs:

- Educational program 6B01503 — Physics (specialization "6B015 Training of teachers for natural science subjects") at the Faculty of Physics and Technology, Karaganda Buketov University (Karaganda, Kazakhstan).

- Educational program 6B01509 — Biology (specialization "6B015 Training of teachers for natural science subjects") at the Faculty of Biology and Geography, Karaganda Buketov University (Karaganda, Kazakhstan);

- Non-linguistic educational programs at S. Seifullin Kazakh Agrotechnical University (Astana, Kazakhstan).

The experimental research involved 95 senior-year students and master's degree students from the aforementioned educational programs at the universities. 48 students were assigned to the experimental group, and 47 students to the control group.

The group division was made randomly, i.e., without linking it to the results obtained regarding the level of formation of their professional foreign language competence or their academic performance.

Determining the components of professional foreign language competence and their core characteristics allowed us to identify the criteria and indicators for assessment, along with the corresponding levels of formation (high, medium, low), as presented in Table 1.

T a b l e 1

**Criteria and indicators for evaluating components of professional foreign
language competence based on the level of formation**

Compo-nents	Criteria	Indicators of level of formation		
		High	Medium	Low
1	2	3	4	5
Communi-cative skills (CS)	1) Skills in written business communi-cation in a foreign language 2) Skills in negotia-tions and participa-tion in business meetings in a for-eign language	1) In-depth knowledge of business communication specifics in a foreign lan-guage and developed skills in constructing a well-argued and clear message. 2) Developed skills in con-ducting communication ef-fectively and adapting it as needed depending on the situation and the communica-tion goal.	1) Sufficient knowledge of business communication specifics in a foreign lan-guage and partially devel-oped skills in constructing a well-argued and clear mes-sage. 2) Partially developed skills in conducting communication effectively and adapting it as needed depending on the situation and the communica-tion goal.	1) Insufficient knowledge of business communication spe-cifics in a foreign language and poorly developed skills in constructing a well-argued and clear message. 2) Poorly developed skills in conducting communication effectively and adapting it as needed depending on the situation and the communica-tion goal.
Professional language skills (PLS)	Understanding and using foreign lan-guage professional terminology. 2) Skills in drafting and editing profes-sional documents in a foreign language	1) A rich professional vocab-ulary and active use of it in communication. 2) Knowledge of the struc-ture of professional docu-ments and developed skills in drafting and editing profes-sional documents in a foreign language.	1) Sufficient professional vocabulary and fairly active use of it in communication. 2) Good knowledge of the structure of professional doc-uments and partially devel-oped skills in drafting and editing professional docu-ments in a foreign language.	1) Poor professional vocabu-lary and rare use of it in communication. 2) Insufficient knowledge of the structure of professional documents and poorly devel-oped skills in drafting and editing professional docu-ments in a foreign language.
Intercultural competence (IC)	Knowledge of cul-tural norms and rules of interaction in a foreign lan-guage. Ability to adapt to an intercultural work environment.	1) Knowledge of cultural norms, adherence to interac-tion rules in a foreign lan-guage, demonstrating respect and tolerance. 2) Developed ability to adapt the message and behavior in a situation, intercultural in-teraction and achieve mutual understanding.	1) Sufficient knowledge of cultural norms, partial adher-ence to interaction rules in a foreign language, insufficient demonstration of respect and tolerance. 2) Partially developed ability to adapt the message and behavior in an intercultural interaction situation and achieve mutual understand-ing.	1) Insufficient knowledge of cultural norms, rare adher-ence to interaction rules in a foreign language, demonstra-tion of disrespect and intoler-ance. 2) Poorly developed ability to adapt the message and behav-ior in an intercultural interac-tion situation and achieve mutual understanding.
Technical skills (TS)	Ability to use spe-cialized software in a foreign language Skills in searching for information and resources in a for-eign language	1) Knowledge of software and developed skills in using it in a foreign language. 2) Developed skills in search-ing, analyzing, and selecting information and resources in a foreign language.	1) Sufficient knowledge of software and partially devel-oped skills in using it in a foreign language. 2) Partially developed skills in searching, analyzing, and selecting information and resources in a foreign lan-guage.	1) Insufficient knowledge of software and poorly devel-oped skills in using it in a foreign language. 2) Poorly developed skills in searching, analyzing, and selecting information and resources in a foreign lan-guage.

The experimental research for testing the developed convergent model of professional foreign language competence for university students was carried out in the conditions of a natural methodological experiment and was conducted in three stages: *ascertaining, formative, and control-analytical*.

We will not dwell on the description of the *ascertaining stage* of the research, as it was presented in our previous article [3; 155]. To recap, during the diagnostic stage, the relevance of the problem was identified,

the initial levels of professional foreign language competence were diagnosed, and educational needs were determined.

The *formative stage* of the experimental research involved the implementation and integration of the developed convergent model of professional foreign language competence into the educational process of university students. The experimental research, aimed at forming the professional foreign language competence of students in language and non-language educational programs, focused on providing a formative impact through a series of informal learning activities in four key areas:

- communicative skills;
- professional language skills;
- intercultural competence;
- technical skills.

This series of activities was carried out in 2023-2024 as part of project № AP19678268 "Scientific and methodological foundations for the implementation of professional foreign language training in the context of convergence between formal and informal higher education" and included:

— A field language school "Language Open-Air";

— A training session by Professor Dr. Rab Nawaz Lodhi (University of Central Punjab, Pakistan) on the topic "Qualitative Research Design";

— An online master class on the topic "Digital Educational Environment as a Platform for the Implementation of Advanced Ideas in Traditional and Non-formal Foreign Language Education";

— Non-credit courses on the Coursera platform.

At the *control-analytical stage* of the experimental research, a repeated diagnostic assessment of the professional foreign language competence of the students was carried out to identify the dynamics of the results and determine the effectiveness of the developed convergent model of professional foreign language training for higher education students.

As the tool for the repeated diagnostic assessment, the same tasks as those used in the initial stage were applied. The results obtained are presented in Figures 1 (a, b), 2 (a, b).
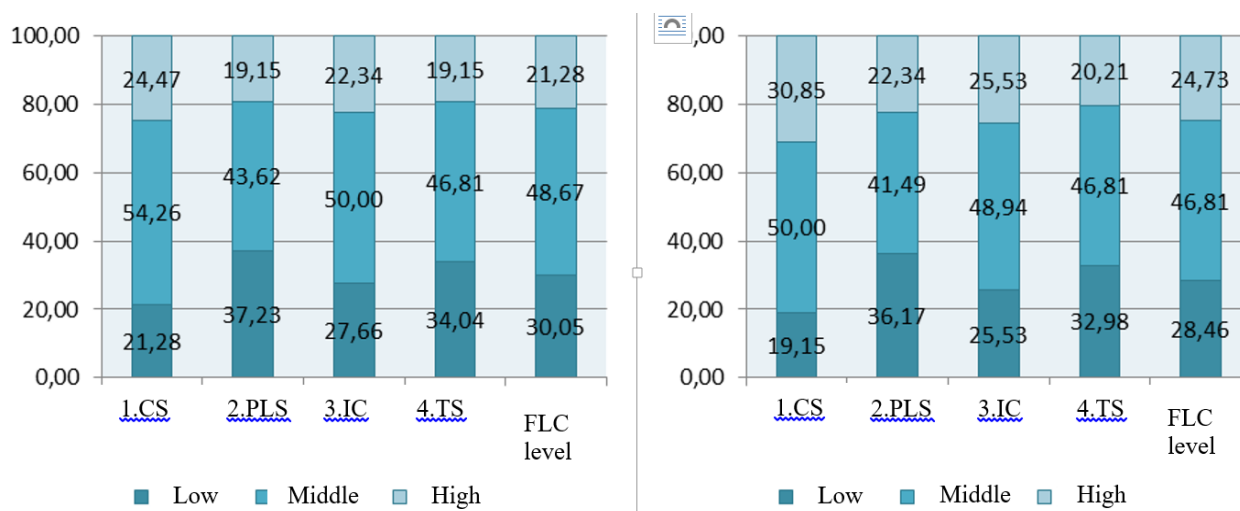
Note: a — CG at the initial stage; b — CG at the control-analytical stage.

Figure 1. Results of the control group diagnosis of the level of development of professional foreign language competence by components at the initial and control-analytical stages
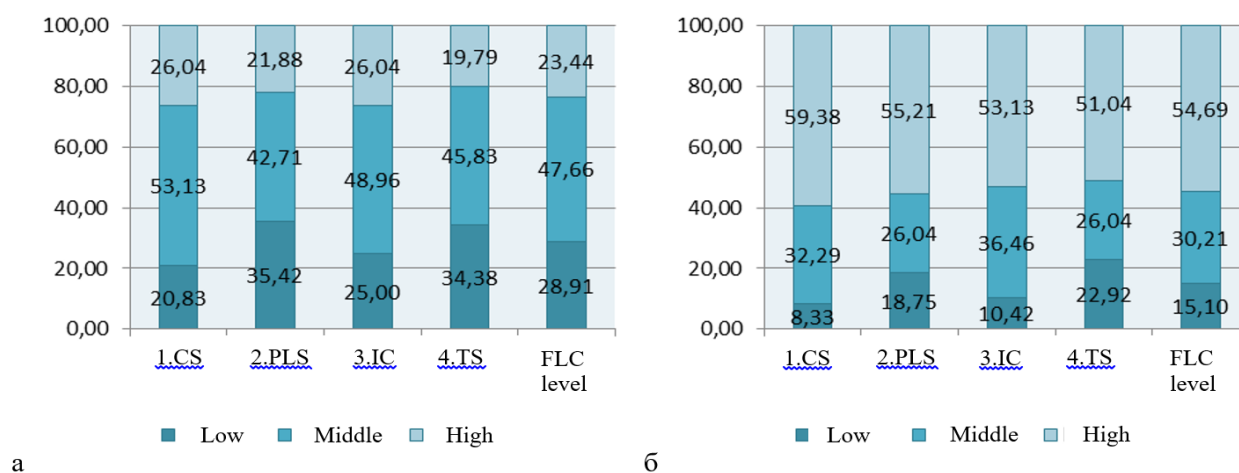
Note: a — EG at the initial stage; b — EG at the control-analytical stage

Figure 2. Results of EG diagnostics of the level of formation of professional foreign language competence by components at the initial and control-analytical stages

According to the results shown in Figure 1, neither the overall professional foreign language competence (PFLK) skills nor the individual components of the PFLK for the control group (CG) have significantly changed. The percentage of students with a high level of formation increased most notably in the "communicative skills" component (by 6.38 %), with this component having the highest percentage among all components (30.85 %).

The smallest increase in the number of students with a high level of formation was observed in the "technical skills" component (by 1.06 %), with this component still having the lowest percentage of students (20.21 %).

Based on the number of students in the CG with a high level of formation, the best-formed components of PFLK at the control-analytical stage were "communicative skills" (30.85 %) and "intercultural competence" (25.53 %). The share of students in the CG with a high level of formation in the overall level of the researched competence increased on average by only 3.45 %.

Based on the presented data, it can be concluded that in the educational process, where the convergent model has not been implemented, the formation of professional foreign language competence (PFLK) occurs inconsistently and without continuity, with insufficient attention paid, particularly to the development of students' technical skills.

The percentage of students in the experimental group (EG) with a high level of PFLK at the control-analytical stage (Fig. 2) increased compared to the initial stage, as well as in comparison with the results of the control group (CG), more than twice, both for the individual components and overall. The greatest increase was observed in the "communicative skills" component, which rose to 59.38 %, indicating that this component was the easiest to develop. The least increase was observed in the "technical skills" component (up to 51.04 %), which may be attributed to the specific nature and vast diversity of technical equipment and specialized software.

On average, across all components, the percentage of students in the EG with a high level of PFLK increased from 23.44 % to 54.69 %, representing an increase of 31.25 % or 2.33 times. The percentage of students in the EG with low and medium levels of PFLK decreased by two or more times, respectively. The results of the control-analytical stage demonstrate a significant improvement in the formation of PFLK in the EG students. Therefore, it can be concluded that the convergent model of professional foreign language competence introduced into the educational process and tested is effective.

To confirm the significance of the results obtained from the experimental study and to draw accurate conclusions, we performed a statistical analysis using the Student's t-test. The null and alternative hypotheses were formulated as follows:

H_0 — The results of the EG and CG at the control stage of the experimental study do not differ significantly.

H_1 — The results of the EG and CG at the control stage of the experimental study significantly differ. The following conditions were accepted for the rejection of one hypothesis and the acceptance of another:

If t-calculated < t-critical, H_0 is accepted.

If t-calculated ≥ t-critical, H_1 is accepted.

The results of the calculations of the t-criterion are reflected in Table 2.

Table 2

The result of the calculation of the t-Student test coefficient for independent samples for the statistical verification of the significance of differences in the obtained results of the EG and CG at the ascertaining stage

Groups	EG	CG
1	2	3
N, number of students in the group	48	47
Xav, average score	72,47917	70,48936
D, dispersion	367,8293	377,3858
Sd, root of dispersion	19,17888	19,42642
m, standard error	2,768233	2,833634
t- calculated	-	0,5023
F, number of degrees of freedom	-	93
α, significance level	-	0,05
t-critical	-	2,02

The number of degrees of freedom was calculated using formula (1):

$$f = n_1 + n_2 - 2 \tag{1}$$

The value of Student's t-criterion for independent samples was calculated according to the formula (2):

$$t = \frac{\left| X_{cp^1} - X_{cp^2} \right|}{\sqrt{m_1^2 + m_2^2}} \tag{2}$$

The following formula (3) was used to calculate the standard error:

$$m = \frac{S_d}{\sqrt{X_{cp}}} \tag{3}$$

The t-critical value for our study was taken from the table of critical values of the Student's t-test, which depends on the degrees of freedom and the significance level α. Comparing it with the t-calculated value led to the acceptance of the null hypothesis about the absence of significant differences in the results of the initial stage obtained by students in the EG and KG, i.e., the starting positions of both groups are the same.

In order to *statistically check the significance of the differences in the results obtained by the EG at the initial and control-analytical stages of the experimental study*, the Student's t-test for dependent samples (for the same sample) was chosen as the statistical method for hypothesis testing. This method was also selected due to the conformity of the sample data with the normal distribution law.

The null and alternative hypotheses were formulated as follows:

H_0- The results at the control-analytical stage of the experimental study do not significantly differ from the results at the initial stage.

H_1- The results at the control-analytical stage of the experimental study significantly differ from the results at the initial stage.

To accept one hypothesis and reject the other, the following conditions were applied:

If t-calculated < t-critical, H0 is accepted.

If t-calculated ≥ t-critical, H1 is accepted.

The results of the calculations for the Student's t-test coefficient are reflected in Table 3.

The result of the calculation of the t-statistic for dependent samples for the statistical verification of the significance of the differences in the results obtained by the EG at the ascertaining and control-analytical stages

Stages	Ascertaining stage	Formative stage	Difference
N, number of students in the group	48	48	-
Xav, average score	72,47917	88,47917	16
D, dispersion	367,8293	475,3187	24,85106
Sd, root of dispersion	19,17888	21,80181	4,985084
m, standard error	2,768233	3,14682	0,719535
t-calculated	-	-	22,23659
F, number of degrees of freedom	-	-	47
α, significance level	-	-	0,05
t-critical	-	-	2,02

The number of degrees of freedom was calculated using formula (4):

$$f = n - 1 \tag{4}$$

The value of the Student's t-test was calculated using the formula (5):

$$t = \frac{X_{cp}}{m} \tag{5}$$

For calculating the standard error, the following formula (6) was applied:

$$m = \frac{S_d}{\sqrt{N}} \tag{6}$$

According to the table of critical values of Student's t-criterion t-calculated is equal to 22.23659, which is a greater value than t-critical, and confirms the alternative hypothesis about the presence of significant differences between the results in EG at the formative and control-analytical stages.

Consequently, we have grounds to assert that the changes in the results at the control-analytical stage, which occurred due to the forming stage of the experimental study, are statistically significant with a probability of at least 95 %, and the developed convergent model, implemented in the pedagogical process of the university, is effective for the formation of professional foreign language competence of students of language and non-linguistic educational programs.

In our opinion, the higher performance of EG participants is connected with:

- strengthening of personal involvement of students in the process of mastering professional foreign language competence;

- increase of their professional motivation;

- realization of the quality of mastering foreign language communicative skills in the context of convergence of formal and non-formal education.

The positive dynamics is due to the continuous nature of foreign language training with the application of developmental technologies and active methods of foreign language learning in view of the convergence of formal and informal foreign language education.

Conclusion

The results of the testing showed that the implementation of the convergent model has a significant positive effect on the formation of foreign language competence, particularly in key areas: communicative skills, intercultural competence, and professional language skills. This confirms the theoretical justification and practical significance of the proposed model, as well as its ability to adapt to the demands of the modern educational process.

Thus, the testing of the convergent model of professional foreign language competence across several faculties demonstrated its effectiveness in the context of higher education, as well as the possibility of successfully combining formal and non-formal learning to achieve quality results in student training. The convergent model of education not only fosters the development of essential professional competencies but also

meets the modern requirements of the educational process, providing flexibility and accessibility of educational opportunities for students.

The results of this study emphasize the importance of the convergence of formal and non-formal foreign language education in improving the quality of training specialists in higher education institutions, and will also serve as a basis for further refinement and implementation of similar models in educational practice.

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Жоо-да кәсіби шеттілдік құзыреттіліктің конвергенттік моделін енгізу және сынақтан өткізу

Мақалада жоғары оқу орнының білім беру үдерісіне кәсіби шет тілдік құзыреттіліктің конвергенттік моделін енгізудің теориялық және практикалық аспектілері қарастырылған. Бұл модель бейресми білім беруді институционалдық білім беру ортасына қосуды көздейді. Заманауи зерттеулерге сүйене отырып, мақаланың авторлары шет тілге кәсіби даярлықта конвергенттік тәсілді қолданудың негіздемесін ұсынады, өйткені ол екі оқу форматының ең тиімді аспектілерін біріктіретін икемді және бейімделгіш білім беру жүйесін қалыптастыруға мүмкіндік береді. Модельдің негізгі компоненттері, оны сынақтан өткізу әдістері ұсынылып, енгізу нәтижелері талданған. Студенттердің шет тілдік құзыреттілігін қалыптастыруда конвергенттік тәсілді пайдаланудың маңыздылығы негізделген. Мақаланың мақсаты — жоғары оқу орнында кәсіби шет тілдік құзыреттіліктің конвергенттік моделін енгізу және сынақтан өткізу нәтижелерін ұсыну, сондай-ақ оның тиімділігін талдау. Қойылған мақсатқа қол жеткізу үшін келесі міндеттер айқындалды: 1) шет тілін оқытудағы конвергенттік тәсілдің теориялық негіздерін сипаттау; 2) әртүрлі әдістемелердің конвергенциясы негізінде кәсіби шет тілдік құзыреттілік моделін ұсыну; 3) модельді сынақтан өткізіп, оның тиімділігін бағалау. Зерттеу нәтижесінде жоғары оқу орнында кәсіби шет тілдік құзыреттіліктің конвергенттік моделін енгізу тілді неғұрлым тиімді меңгеруге, студенттердің уәждемесін арттыруға және түрлі әдістемелерді білім беру үдерісіне біріктіруге ықпал ететіні анықталды.

Кілт сөздер: конвергенция, кәсіби шет тілдік құзыреттілік, конвергенттік модель, педагогикалық инновациялар, формальды білім беру, бейресми білім беру, бейресми шет тілдік білім беру.

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Внедрение и апробация конвергентной модели профессиональнойиноязычной компетенции в условиях вуза

В статье рассматриваются теоретические и практические аспекты внедрения конвергентной модели профессиональной иноязычной компетенции в образовательный процесс вуза, которая предполагает включение неформального образования в институциональную образовательную среду. Опираясь на современные исследования, авторы научной работы обосновывают использование конвергентного подхода к иноязычной подготовке будущих специалистов возможностью создания гибкой и адаптивной образовательной системы, сочетающей лучшие аспекты обоих форматов обучения. Представлены основные компоненты модели, методы ее апробации, а также анализированы результаты внедрения. Обоснована значимость использования конвергентного подхода для формирования иноязычной компетенции у студентов. Цель данной статьи — представить результаты внедрения и апробация конвергентной модели профессиональной иноязычной компетенции в вузе, а также осуществить анализ ее эффективности. Для достижения поставленной цели были сформулированы следующие задачи: 1) описать теоретические основы конвергентного подхода в обучении иностранному языку; 2) представить модель профессиональной иноязычной компетенции на основе конвергенции различных методик; 3) провести апробацию модели и оценить ее эффективность. В результате проведенного исследования был сделан вывод о том, что внедрение конвергентной модели профессиональной иноязычной компетенции в вузе способствует более эффективному освоению языка, повышению мотивации студентов и интеграции различных методик в образовательный процесс.

Ключевые слова: конвергенция, профессиональная иноязычная компетенция, конвергентная модель, педагогические инновации, формальное образование, неформальное образование, неформальное иноязычное образование.

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Emotional Intelligence of Future Teachers

Modern theories and models of emotional intelligence emphasize its importance for the formation of a holistic self-developing personality of a teacher. Research shows that in modern society, the success of an adult depends on his or her ability to manage both his or her own emotions and the emotions of others. People with high emotional intelligence tend to better manage their emotional state, which leads to greater adaptability and more effective communication. This article presents the results of an empirical study of the emotional intelligence of students in various educational programs focused on pedagogy. The study is aimed at determining the influence of various components of emotional intelligence on its overall level in students of pedagogical programs. The authors provided an analysis of the results of studies that suggest that the nature of students' educational and professional experience plays a decisive role in the development of emotional intelligence of novice teachers. The researchers emphasize that the development of emotional intelligence is a vital quality for future teachers. They highlight emotional awareness and empathy as key elements in the development of emotional intelligence. The results obtained have important theoretical and practical implications for improving teacher training programs.

Keywords: emotional intelligence, emotional awareness, emotion management, self-motivation, recognizing other people's emotions, empathy.

Introduction

In the course of studying modern concepts of emotional intelligence development and requirements for education experts, we would advocate the viewpoint that a teacher embodying a holistic, self-developing personality with a well-developed emotional intelligence is an ideal model for professional identification.

In his paper "Analysis of psychological theory of emotional intelligence," B.N. Turakulov discusses the importance of emotional intelligence in modern psychology. It covers various theories and models developed over the past century, further emphasizing the unity of affect and intelligence. Emotional intelligence is presented as crucial for understanding one's own and other people's emotions, ultimately leading to better decision-making and interpersonal relationships [1; 99–104].

J.D. Mayer, P. Salovey, D.R. Caruso, and L. Cherkasskiy discuss the study of emotional intelligence including personal factor of emotions in combination with the construct of intelligence, as well as methods for measuring emotional intelligence. Their research shows that the models of emotional intelligence and mental abilities can be characterized as standard intelligence and, empirically, they do meet the criteria of standard intelligence. Accordingly, emotional intelligence provides recognition of a new exciting area of human abilities [2; 528–549].

The term "emotional intelligence" is multifaceted and is yet to be clearly defined within contemporary psychology. Coined in 1990 by American psychologists P. Salovey and J. Mayer, it refers to a unique set of mental attributes, which includes the ability to comprehend one's own emotions, exhibit empathy, and regulate feelings [3; 396–420].

According to P. Salovey and J.D. Mayer, the foundation of emotional intelligence consists of a range of skills that enable individuals to accurately assess and express emotions in both themselves and others, effectively manage them, and use emotional insights for motivation and goal setting. The authors examined the place of emotions in traditional concepts of intelligence, and also described a basis for integrating research on emotion-related skills, and examined the components of emotional intelligence P. Salovey, & J.D. Mayer [4; 185–211].

P. Salovey and D. Grewal have presented a helpful framework for studying individual differences in abilities related to processing of emotional information. For their study, they would focus on J.D. Mayer and

P. Salovey's four-branch model that characterizes emotional intelligence as a set of four interrelated abilities: perception, use, understanding, and emotion management [5; 281–285].

C. Cherniss, M. Extein, D. Goleman, and R.P. Weissberg show a great empirical support that the theory of emotional intelligence currently has [6; 239–245]. In this regard, we have performed a study confirmed by real data collected during observation using questionnaires, which allowed us to confirm the hypothesis about components that are both the most and least influential on emotional intelligence of future teachers.

The study of emotional intelligence is aimed at preventing teacher burnout by increasing their ability to cope with daily classroom challenges. Empirically based programs are recommended as a direct and systemic component of the professional development of teachers both prior to and throughout their teaching careers [7; 377-402].

Teachers can develop emotional intelligence. N. Dolev, S. Leshem argue that Emotional Intelligence training programs can be effective in ensuring positive shifts and related behavior that can positively affect teacher practice, their sense of importance and their relationships with students [8; 21–39].

We endorse V. Kovalchuk et al.'s opinion that emotional intelligence of a future teacher is absolutely necessary and needs to be formed during the student period. That said, our study of a group of students of pedagogical educational programs is justified [9; 39–51].

A growing body of research in recent years has confirmed the value of emotional intelligence for both effective teaching and student achievements. M. Hen, & A. Sharabi-Nov present a quasi-experimental pre- and post-training study to evaluate the impact of a 56-hour Emotional Intelligence training model. The model has been developed and studied in an attempt to address the growing need for educators to practice and implement "emotionally intelligent" learning environments. This study has involved teachers from ten elementary schools in Israel. Results have shown an increase in emotional intelligence and empathy from the beginning to the end of the course. Further regression has shown that both emotional expression and regulation predicted empathy at the end of the course. Participants' reflective tasks have shown an increase in self-awareness, emotional awareness, emotional regulation, and understanding of others [10; 375–390].

Given the constant and rapid social changes, along with new challenges, elevated social expectations, and heightened professional standards, the importance of developing emotional intelligence is becoming increasingly significant, alongside other critical factors like competence and effectiveness. For future teachers, the ability to identify and regulate emotions is paramount, as they must navigate two key responsibilities: enhancing their own personal capabilities that underpin emotional intelligence and fostering emotional intelligence in their students. Aspiring educators need to seek out innovative methods and tools for understanding and managing emotions, as well as cultivating their empathy skills. Understanding emotional intelligence is crucial for teachers to form positive relationships with both peers and students. This pursuit is essential for developing self-awareness, understanding motivations and goals within the educational environment, influencing others' emotions, and enhancing leadership qualities.

There are good theoretical grounds to consider emotional intelligence (EI) is considered an important component of teachers' professional skills, which has a theoretical basis. However, there is insufficient data on the relationship between the level of EI among student teachers and their success in teaching. The study also considered the influence of gender and previous academic achievements as possible factors influencing pedagogical effectiveness. However, the relationship between these three variables and the effectiveness of teaching has not been identified, which casts doubt on existing ideas about the role of emotions in teaching [11; 35–42].

Materials and Methods

Emotional intelligence is an extremely important concept, especially among future teachers.

Emotional intelligence comprises three primary abilities: identifying and expressing emotions, regulating emotions, and utilizing emotional information in reflection and activities. Each ability further breaks down into several components. For example, the skill of identifying and expressing emotions is split into two facets. The first one is aimed at one's own emotions, the second one, at other people's emotions. Emotion regulation includes two components: regulation of one's own and other people's emotions. The use of emotions in reflecting and activities involves flexible planning, creative thinking, the ability to switch attention, and motivation, especially for future teachers.

The main goal of our study is to determine the emotional intelligence of future undergraduate teachers by measuring the constituent components of emotional intelligence and to determine the component with the greatest impact on the emotional intelligence of students.

We propose that there is a positive connection between overall emotional intelligence and its individual components, with empathy exerting the greatest influence.

The higher the emotional awareness, the higher the overall emotional intelligence level. The results will have important theoretical and practical significance.

For this purpose, we used the tests invented by the American psychologist Nicholas Hall. The N. Hall test for emotional intelligence is currently one of the most common methods for determining the level of emotional intelligence. Its main advantages are simplicity and accessibility making it ideal for self-diagnosis. [12; 6–14].

The Nicholas Hall test allows determination of the emotional intelligence level in several aspects at once:

Emotional awareness, which includes a person's understanding of emotions they experience and their causes. People with high emotional awareness are more aware of their internal state.

Own emotion management. This aspect implies a person's ability to influence their own emotions and restrain negative consequences of their manifestation. This includes emotional forgivingness, flexibility, etc.

Self-motivation refers to the capability to use one's emotions as a means to achieve personal goals.

Empathy involves understanding others' emotions, being sensitive to their feelings, and a willingness to offer support. It encompasses recognizing a person's emotional state through facial expressions, gestures, nuances in speech, and body language.

Recognition of other people's emotions is a person's ability to influence the feelings of others, use their emotions to achieve own and company goals, etc.

The scientist has proposed a method for identifying the main capabilities of understanding the relationships of the individual that can be presented in the emotional sphere, as well as the ability to manage emotions based on decision-making.

Oftentimes people have a hard time giving an objective assessment of their qualities while some test questions require the subject to provide such an evaluation. Nevertheless, this method remains one of the most popular in the world for measuring emotional intelligence.

Emotional intelligence consists of skills and behaviors that can be observed, measured, and ultimately improved. It is never too late to learn more about emotions to change the situation. The Hall test is one of the tools that allows for a quick and as effective learning as possible.

Data has been processed and analyzed using Microsoft Excel. The study used pivot tables to systematize data, statistical functions to calculate average values and deviations, and visualization tools such as charts and graphs to present the results clearly. Additionally, data filtering and sorting have been used to identify patterns. Correlation analysis was also conducted to assess the relationships between variables and regression analysis to identify the dependence of one variable on others.

The results obtained can be useful for further research on emotional intelligence in education. In addition, improving a teacher's emotional intelligence is useful for teaching and learning.

Results and Discussion

For this study, 178 undergraduate students in Pedagogical Sciences were surveyed using the Hall Emotional Intelligence Test.

This widely acknowledged assessment consists of 30 items rated on a 6-point scale known as Likert scale and is arranged into five distinct scales, each containing six non-overlapping items:

1. Emotional Awareness.
2. Managing Your Emotions (or emotional flexibility and non-rigidity).
3. Self-Motivation (or voluntary emotion management).
4. Empathy.
5. Managing Emotions of Others (or the ability to influence emotional states).

Participants responded to statements reflecting various life experiences. For each statement, they were offered a choice of options based on assessment of their answers.

Using the N. Hall test questionnaire, emotional intelligence was categorized based on partial scores for each scale: high (14 points or more), average (8 to 13 points), and low (7 points or less). The findings reflected the following. In general, the answers to the test we conducted using this method revealed a low level of emotional intelligence (see Table 1).

Total Point Allocation by Scales

	Emotional Awareness	**Managing Your Emotions**	**Self-Motivation**	**Managing Emotions of Others**	**Empathy**
High	22.48	9.55	6.74	19.66	9.55
Average	38.76	24.72	38.76	37.08	41.01
Low	38.76	65.73	54.5	43.26	49.44
Total	100	100	100	100	100

Figure 1 shows allocation of respondents with average levels of responses across scales.
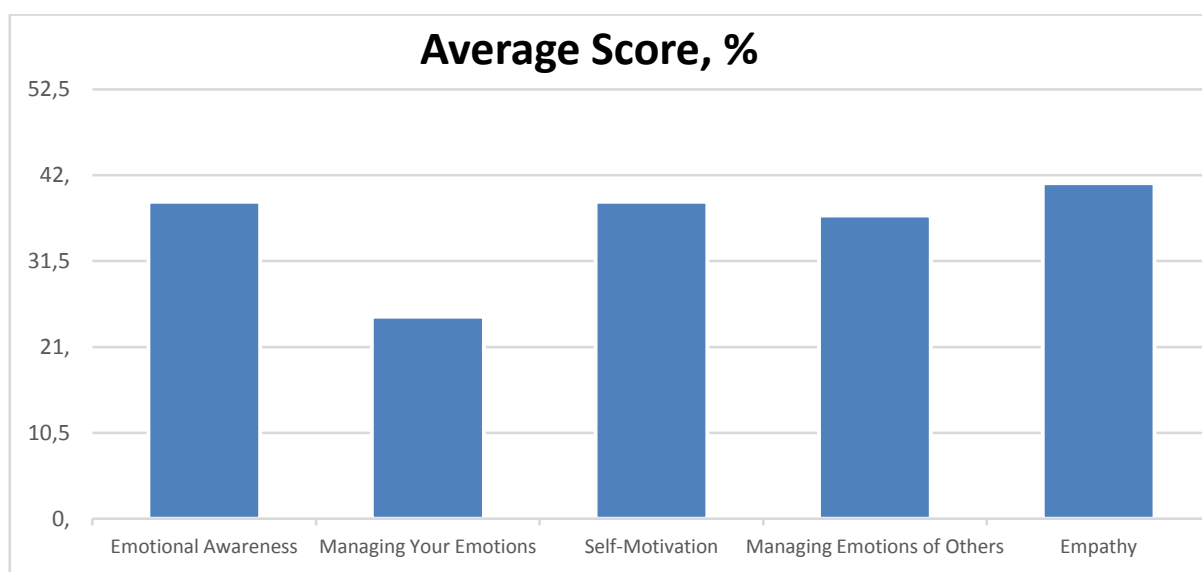

Figure 1. Scale Average

Empathy received a high average score of 41.01, suggesting respondents are adept at listening to others, attuned to the emotional needs of those around them, and skilled at interpreting social cues. It encompasses the ability to connect with another's emotional condition through facial expressions, gestures, vocal tones, and body language, as well as a readiness to offer assistance.

Emotional Awareness scored an average of 38.76, indicating a strong understanding of one's own emotions and a continuous effort to enhance emotional vocabulary. People with high emotional awareness are more aware of their internal state than others.

For the Self-Motivation component (38.76), respondents have demonstrated their ability to stay calm and focused, to evoke a wide range of positive emotions, such as fun, joy, inner uplift, and humor, to approach roughs and tumbles of life creatively, to easily discard negative feelings. Self-motivation is based on understanding own needs and the ability to consistently satisfy them.

Managing Emotions of Others (37.08) is the ability to influence the emotional state of other people, to help calm them, to respond appropriately to their impulses and desires, and also help improve their mood.

Managing Your Emotions has shown the lowest score (24.72 %), which may indicate difficulties in controlling an emotional state. Emotion management requires special attention.

Overall, the study has shown a low students' emotional intelligence according to the interpretation of the test results.

Figure 2 shows the results of the test and the overall integrative level of emotional intelligence.
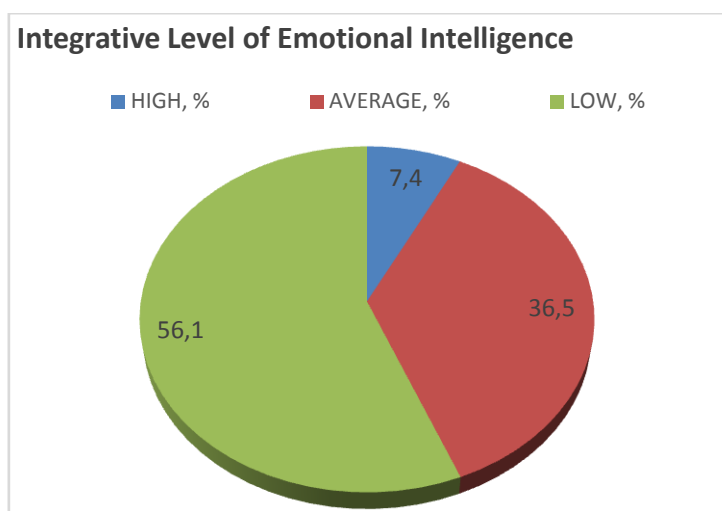
Figure 2. Integrative Level of Emotional Intelligence

A notable number of students (56 %) struggled to recover quickly from unexpected disappointments, experienced prolonged states of negative emotions, and faced challenges managing their feelings.

We have determined paired correlation coefficients or, simply put, identified each factor's (Emotional Awareness, Managing Your Emotions, Self-Motivation, Managing Emotions of Others, Empathy) influence on emotional intelligence (see Table 2).

T a b l e 2

Correlation and Elasticity Coefficients

Indicators	Emotional Awareness	Managing Your Emotions	Self-Motivation	Managing Emotions of Others	Empathy
Coefficient of Correlation	0.83	0.77	0.85	0.86	0.85
Coefficient of Determination R^2	0.68	0.6	0.73	0.73	0.73
Mean Value X	8.8	4.7	6.7	7.7	7.4
Coefficient b	3.4	2.9	4	3.2	3.9
Elasticity Coefficient	0.85	0.39	0.76	0.7	0.82

The following is a more detailed analysis of relationships between individual components and their impact on formation of emotional intelligence.

In our study, the significance of F is below 0.05. In regression analysis, it cannot exceed 0.05. The significance of F indicates high reliability of the results and absence of randomness or presence of a pattern justified in our study. High reliability of the model indicates that the probability or the results' randomness is below 5 %. This means that the identified pattern is not random. It also confirms presence of a real relationship between the variables, i.e., our model admittedly explains variation of the dependent variable (emotional intelligence). The model is suitable for analysis because the low level of significance of F confirms that the factors included in the model (Emotional Awareness, Managing Your Emotions, Self-Motivation, Empathy, And Managing Emotions of Others) show a significant impact. Accordingly, we can state with high confidence that regression model is valid and identified patterns admittedly reflect real relationships between variables.

The correlation coefficient R illustrates the relationship's strength between the emotional intelligence components and overall emotional intelligence. The analysis revealed a statistically significant positive correlation between the overall emotional intelligence score and its individual component scales. Particularly

high correlations were found between Managing Others' Emotions and Emotional Intelligence (0.86), Empathy and Emotional Intelligence (0.85), and Self-Motivation and Emotional Intelligence (0.85), indicating that these elements are essential for overall emotional intelligence. Conversely, the correlation between Managing Your Emotions and Emotional Intelligence was lower (0.77), suggesting greater difficulties in regulating students' emotional states.

The determination coefficient shows the part of emotional intelligence variability explained by a specific variable. In our study, emotional intelligence is explained by the model by 60–73 %, which indicates its sufficient predictive ability. The model explains more than a moderate and good amount of data variation. This indicates presence of significant factors while the model describes behavior of the dependent variable quite well. Self-Motivation, Emotion Recognition and Empathy show a value of $R^2 = 0.73$, which indicates a high degree of explainability of these factors. Emotional Awareness ($R^2 = 0.68$) explains 68 % of variability, which is also high. Emotion management ($R^2 = 0.6$) has the lowest value, which indicates its lower predictive power in the model.

Analysis of the mean value demonstrates the average level of development of each component. Emotional awareness (8.8) is the most developed ability among respondents. The lowest score is emotion management (4.7), which indicates possible difficulties with self-control. Self-motivation (6.7), emotion recognition (7.7) and empathy (7.4) are at an average level. The b coefficients (contribution to general emotional intelligence) show how much each factor influences the general level of emotional intelligence. Self-motivation (b = 4.0) has the greatest influence, empathy (b = 3.9) also significantly influences general emotional intelligence. The smallest coefficient is for emotion management (b = 2.9), which indicates its comparatively smaller contribution. The elasticity coefficient is an indicator characterizing the measure of sensitivity of the studied value in relation to the factors on which it depends. The elasticity coefficient in regression analysis shows by what percentage, on average, the result will change if the factor changes by 1 %, that is, by what percentage the general level of emotional intelligence will change if the corresponding component changes by 1 %. Emotional awareness (0.85) and empathy (0.82) have the greatest elasticity, which indicates the high significance of these factors. Self-motivation (0.76) and emotion recognition (0.7) also have a significant impact. Managing Your Emotions show the lowest value (0.39), which indicates its weak impact on overall emotional intelligence.

To summarize, emotional intelligence is more sensitive to changes in emotional awareness and empathy and is less sensitive to managing one's emotions.

According to the results of the study, using the N. Hall method, the most developed components of emotional intelligence in students were self-motivation and emotion recognition. An analysis of the nature of these relationships allows us to conclude that self-motivation is of paramount importance for the successful adaptation of students.

Conclusion

The empirical study performed as part of this work has confirmed the existence of a close positive relationship between individual components and students' emotional intelligence. Correlation analysis has revealed statistically significant positive relationships between the general level of emotional intelligence, as well as between individual components of these constructs. The results are of great theoretical and practical consequence. The most significant components, according to N. Hall's questionnaire, are self-motivation, empathy and emotion recognition since they show a high coefficient of influence and elasticity. Emotional awareness is the most developed one but it is not always accompanied by effective management of own emotions. The biggest issue is managing own emotions that may require additional efforts to develop self-control. To improve emotional intelligence, it is worth paying attention to the development of empathy, self-motivation, and skills in recognizing the emotions of others.

This analysis can be useful both in personal development and in the professional sphere to improve interpersonal relationships and self-regulation of future teachers.

They expand scientific understanding of the nature of emotional intelligence, and can also be used to develop emotional intelligence development programs, psychological counseling, professional selection, and educational programs aimed at improving psychological stability of students. Further research in this area can focus on studying the influence of personal and environmental factors on the relationship between emotional intelligence and stress resistance, psychological stability.

High stress levels and increasing burnouts in teaching require new means of improving stress management and improving the well-being of future teachers, which are the key to effective learning and student

academic progress. A growing body of evidence indicates that development of emotional intelligence through training can positively affect a wide range of psychological outcomes, resulting in improved health and psychological stability, and, apparently, has direct application to maintaining psychological stability of teachers. The results of the study can be applied in the development of programs to improve the quality of emotional intelligence.

Enhancing the overall level of emotional intelligence can be accomplished through targeted training and psychological practices focused on recognizing and managing emotions. Emotional intelligence is essential for conflict resolution and anticipating outcomes within a professional teaching context.

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Д.К. Абилов, А.Р. Альгожина

Болашақ педагогтардың эмоционалды интеллектісі

Эмоционалды интеллектің заманауи теориялары мен модельдері педагогтың біртұтас өзін-өзі дамыта-тын тұлғасын қалыптастырудағы маңыздылығын көрсетеді. Қазіргі ғылыми зерттеулер ересек адамның заманауи қоғамдағы жетістікке жетуі академиялық білім мен жалпы интеллект деңгейімен ғана емес, сонымен қатар өзінің эмоционалдық жағдайын және басқа адамдардың да эмоционалдық көңіл-күйін басқара алу ептілігімен де анықталатынын дәлелдейді. Эмоционалды интеллектісі жоғары дамыған адамдар өздерінің эмоционалды көңіл-күйін басқара алудың айқын қабілеттеріне ие, бұл жоғары бейімделгіштік пен қарым-қатынастағы нәтижелілікті қамтамасыз етеді. Мақалада педагогикалық бағыттағы әртүрлі білім беру бағдарламаларында оқитын студенттердің эмоционалды интеллекті деңгейін анықтаудың эмпирикалық зерттеу нәтижелері келтірілген. Авторлар студенттердің білім беру және кәсіби тәжірибесінің сипаты бастаушы оқытушылардың эмоционалды интеллектісін дамытуда шешуші рөл атқаратындығын көрсететін зерттеу нәтижелеріне талдау жасады. Зерттеушілер эмоционалды интеллекті дамыту болашақ педагогтар үшін маңызды қасиет екенін атап өтеді. Олар эмоционалды сана мен эмпатияны эмоционалды интеллект дамуының негізгі

элементтері ретінде көрсетеді. Алынған нәтижелер болашақ педагогтерді даярлау бағдарламаларын жақсарту үшін маңызды теориялық және практикалық мәнге ие.

Кілт сөздер: эмоционалды интеллект, эмоционалды хабардарлық, өз эмоцияларын басқару, өзін-өзі ынталандыру, басқа адамдардың эмоцияларын тану, эмпатия.

Д.К. Абилов, А.Р. Альгожина

Эмоциональный интеллект будущих педагогов

Современные теории и модели эмоционального интеллекта подчеркивают его важность для формирования целостной саморазвивающейся личности педагога. Исследования показывают, что в современном обществе успех взрослого человека зависит от его способности управлять как своими собственными эмоциями, так и эмоциями других. Люди с высоким эмоциональным интеллектом склонны лучше управлять своим эмоциональным состоянием, что приводит к большей адаптивности и более эффективному общению. В данной статье представлены результаты эмпирического исследования эмоционального интеллекта студентов различных образовательных программ, ориентированных на педагогику. Исследование направлено на определение влияния различных компонентов эмоционального интеллекта на его общий уровень у студентов педагогических программ. Авторы предоставили анализ результатов исследований, из которых следует, что характер образовательного и профессионального опыта студентов играет решающую роль в развитии эмоционального интеллекта начинающих преподавателей. Исследователи подчеркивают, что развитие эмоционального интеллекта является жизненно важным качеством для будущих педагогов. Они выделяют эмоциональную осведомленность и эмпатию как ключевые элементы развития эмоционального интеллекта. Полученные результаты имеют важное теоретическое и практическое значение для улучшения программ подготовки преподавателей.

Ключевые слова: эмоциональный интеллект, эмоциональная осведомленность, управление своими эмоциями, самомотивация, распознавание эмоций других людей, эмпатия.

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