ISSN 2518-1467 (Online),
ISSN 1991-3494 (Print)

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ
ҰЛТТЫҚ ҒЫЛЫМ АКАДЕМИЯСЫНЫҢ

Х А Б А Р Ш Ы С Ы

ВЕСТНИК

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК
РЕСПУБЛИКИ КАЗАХСТАН

THE BULLETIN

THE NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN

PUBLISHED SINCE 1944

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JANUARY – FEBRUARY 2021

ALMATY, NAS RK

NAS RK is pleased to announce that Bulletin of NAS RK scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of Bulletin of NAS RK in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential multidiscipline content to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы "ҚР ҰҒА Хабаршысы" ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабаршысының Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді мультидисциплинарлы контентке адалдығымызды білдіреді.

НАН РК сообщает, что научный журнал «Вестник НАН РК» был принят для индексирования в Emerging Sources CitationIndex, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Вестника НАН РК в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному мультидисциплинарному контенту для нашего сообщества.

«Қазақстан Республикасы Ұлттық ғылым академиясының Хабаршысы».

ISSN 2518-1467 (Online),
ISSN 1991-3494 (Print)

Меншіктенуші: «Қазақстан Республикасының Ұлттық ғылым академиясы»РҚБ (Алматы қ.).

Қазақстан Республикасының Ақпарат және коммуникациялар министрлігінің Ақпарат комитетінде 12.02.2018 ж. берілген **№ 16895-Ж** мерзімдік басылым тіркеуіне қойылу туралы куәлік.

Тақырыптық бағыты: ***іргелі ғылымдар саласындағы жаңа жетістіктер нәтижелерін жария ету.***

Мерзімділігі: жылына 6 рет.
Тиражы: 2000 дана.

Редакцияның мекенжайы: 050010, Алматы қ., Шевченко көш., 28, 219 бөл., 220,
тел.: 272-13-19, 272-13-18, http://www.bulletin-science.kz/index.php/en/

Типографияның мекенжайы: «NurNaz GRACE», Алматы қ., Рысқұлов көш., 103.

«Вестник Национальной академии наук Республики Казахстан».

ISSN 2518-1467 (Online),
ISSN 1991-3494 (Print)

Собственник: РОО «Национальная академия наук Республики Казахстан» (г. Алматы).

Свидетельство о постановке на учет периодического печатного издания в Комитете информации Министерства информации и коммуникаций и Республики Казахстан **№ 16895-Ж**, выданное 12.02.2018 г.

Тематическая направленность: ***публикация результатов новых достижений в области фундаментальных наук.***

Периодичность: 6 раз в год.
Тираж: 2000 экземпляров.

Адрес редакции: 050010, г. Алматы, ул. Шевченко, 28, ком. 219, 220, тел. 272-13-19, 272-13-18.
http://www.bulletin-science.kz/index.php/en/

Адрес типографии: «NurNazGRACE», г. Алматы, ул. Рыскулова, 103.

Bulletin of the National Academy of Sciences of the Republic of Kazakhstan.

ISSN 2518-1467 (Online),
ISSN 1991-3494 (Print)

Owner: RPA "National Academy of Sciences of the Republic of Kazakhstan" (Almaty).

The certificate of registration of a periodical printed publication in the Committee of information of the Ministry of Information and Communications of the Republic of Kazakhstan No. **16895-Ж**, issued on 12.02.2018.

Thematic focus: ***publication of the results of new achievements in the field of basic sciences.***

Periodicity: 6 times a year.
Circulation: 2000 copies.

Editorial address: 28, Shevchenko str., of. 219, 220, Almaty, 050010, tel. 272-13-19, 272-13-18,
http://www.bulletin-science.kz/index.php/en/

Address of printing house: «NurNaz GRACE», 103, Ryskulov str, Almaty.

BULLETIN OF NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN
ISSN 1991-3494
Volume 1, Number 389 (2021), 297 – 305 **https://doi.org/10.32014/2021.2518-1467.40**

UDC 378.1
SRSTI 14.35.07

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FORMATION OF CREATIVE POTENTIAL OF STUDENTS BASED ON INNOVATIVE APPROACHES

Abstract. In the context of the reform and modernization of education in Kazakhstan and the accession of the Republic of Kazakhstan to the Bologna process, Akhmet Yassawi International Kazakh-Turkish University has aimed to train specialists of an international level and improve the quality of education, the main course is to develop new pedagogical grounds for the formation of a future specialist both as a professional and as a creative person with creative potential and professional-creative competence. The search for personnel reserves to improve the professional training of future specialists is shifting to the development of creative potential and communicative competence. There is a need to transform the educational environment of higher education into a single creatively developing educational space that promotes the formation and development of students' creative potential and competence as a factor in successful self-realization in the profession and the prerequisites for competent support for the creative development of students.

Key words: creativity, innovation, creative potential, creative activity.

Introduction. The problem of quality education at the beginning of the 21st century has acquired particular urgency and relevance. A huge number of changes in the life of modern society urges a person to be creative and productive in any transformation. A graduate of a university has to react to changes constantly occurring in society, but often he is not ready for them. In order to survive and adequately respond to them, the future specialist have to activate his creative potential [1].

Universities of Kazakhstan are implementing multilevel professional educational programs in various specialties of higher professional education. In order to implement these programs in the context of social protection of students and increase the mobility of graduates, it is necessary to observe general and innovative principles and methods in the learning process [2].

Main part. With the modernization of education in Kazakhstan and the signing of the Bologna Declaration, Akhmet Yassawi International Kazakh-Turkish University made certain obligations. One of the main tasks of the Akhmet Yassawi IKTU, the flagship of the international education of independent Kazakhstan, is to enter the single European educational space and achieve international recognition of educational programs in leading specialties. In order to solve this problem, the main direction of the development of education at Akhmet Yassawi IKTU is to train qualified specialists of an international level with a high level of professional, communicative competence and creative potential based on a competent and innovative approach.

Currently, there are increasing requirements for the level of preparation of creative abilities of a qualified specialist, in addition to his ability to solve independently various problems that arise in the process of further professional activity. Nowadays, only a specialist who is creative in his work can cope with the whole range of practical and theoretical tasks posed by rapidly developing economic transformations and the scientific and technological process [3].

As our long-term experience at the university convinces, the process of pedagogical design stimulates and develops the creative activity of a student as a future high-demand specialist. The combination of cognitive interest in the subject with professional motivation has the greatest impact on the effectiveness

and efficiency of training and cognitive motivation encourages the student to develop their inclinations and capabilities, has a decisive impact on the formation of personality and the disclosure of its creative potential [4].

With the development of the creative potential of students, special attention is paid to the formation of skills to independently acquire knowledge, to reveal their individual abilities, which provides sustainable motivation for learning. The development of creative potential during the training period will help students to firmly master those areas of knowledge that can be useful in independent professional activities.

Studies have shown that for a student to understand the social meaning of learning, its personal significance, it is necessary to constantly and purposefully cultivate respect for the knowledge itself, the right attitude to their social and professional role. After all, this, in fact, means: educating by teaching. Innovative educational technologies activate not only the cognitive component of the pedagogical process, but also improve the educational aspect associated with the formation and development of personal qualities of students.

The creative potential of students develops in the process of activity in solving various problems. The problematic situation that arises requires a certain solution, which in creativity can be expressed objectively or subjectively for each person [6].

Creative potential is a complex, integral concept, which includes the natural genetic, socio-personal and logical components, in the aggregate, representing the knowledge, skills, abilities and aspirations of the individual to transform (improve) the world around him in various fields of activity within the framework of universal human norms of morality. “Creative potential” manifested in a particular field of activity, represents the “creative abilities” of a person in a particular type of activity, as well as a complex personality-activity formation, including motivational-targeted, meaningful, operational-activity, reflective-evaluative components that reflect the totality of personality qualities and abilities, psychological states, knowledge, skills necessary to achieve a high level of its development. The term itself can often be used as a synonym for “creative person”, “gifted person”. The value of creativity, its functions, lie not only in the productive side, but also in the process of creativity .

It should be emphasized that the student’s internal activity, readiness to make efforts inherent in various types of his inclinations, is at the same time the first condition for the development of creative potential. To activate the personal potential earlier than others, the motivational component of the personality should be involved. Without a developed cognitive interest, the formation of the point of learning, an effective orientation to the personality in the educational process is impossible. In the formed “field of interest”, the self-expression of a person takes place, her assessment of her abilities, the desire to achieve the I-ideal develops. A high level of cognitive interest is usually inherent in students with a developed "I-concept". That is why the identification of psychological and pedagogical characteristics that contribute to the emergence of cognitive motivation, with its subsequent transformation into professional motivation, is one of the strategic areas of psychology and pedagogy of higher education and innovative teaching technologies.

Innovation (from English. "novation" - innovation, innovation is considered in inextricable unity of ideas, processes, means and results of improving the pedagogical system). The introduction of more thought-out methods, the use of active forms of the educational process, new technologies of training and education are constant areas for the implementation of innovative ideas. The main directions of innovative transformations in the pedagogical system are theory, technology (content, forms, methods, means), management (goals and results) of higher education.

Innovative teaching technology should be considered as a tool with which a personality-oriented educational paradigm can be implemented. Personal-oriented education is based on the well-known principles of humanistic pedagogy: intrinsic value of a person, respect for her as a creative individual. The concept of creative individuality objectively includes self-identity. A person acquired the ability to distinguish himself, his “I” from the environment, to examine the external conditions of his being outside his own subjectivity as a result of the development of expedient material activity to transform the objective world [5]. The realization of this ability, the corresponding level of self-awareness, is the most important prerequisite for a creative act. In the framework of creative activity, the self-consciousness of its

subject performs a number of functions. It “protects” and stimulates creative activity, mediates the formation of an appropriate system of internal motives and values. For meaningful self-programming of creative activity, one of the prerequisites for its effectiveness is a sufficiently high degree of development of all levels of self-awareness.

As the prerequisites for successful creative activity, two main areas of the regulatory activity of self-awareness can be distinguished. The first of them is associated with maintaining a stable intellect, the second is with the social determination of its creative activity. The essence of the first is that the processes of awareness of one’s experiences, states, emotions, etc. help maintain the stability of the human mind. Since self-regulation and self-control of the person are carried out through individual self-awareness, to the extent that it acts as an important condition not only for preservation, but also for the self-conscious development of its creative capabilities and abilities. Self-awareness enables the subject to develop his attitude to his own creative activity, evaluate and consciously program its character [7].

Gradually, as a reaction to the results obtained, a subject's cognitive self-relation to his creative activity is formed from an effective point of view, i.e. a criterion for the productivity of creative activity begins to function based on the feedback mechanism. For psychology and pedagogy, it is especially important not so much the manifestation of individuality in activity as the decisive role of activity in the formation of creative individuality.

In the development of creative thinking of students, a special place is occupied by conversation as an interactive teaching method (table 1).

Table 1 - Interactive teaching method

Key indicators of implementation of dialogical relations	A talk as a dialogue method of teaching
First indicator	this is the presence of diverging semantic positions in the discussion. If they interact in the teacher’s speech, then we can talk about internal dialogue; in the case when the diverging semantic positions are represented by several participants in the discussion (at least two), an external dialogue is implemented. In addition to indicators (external dialogue — internal dialogue), the method includes the characteristic “depth of dialogue”, which is assessed by the degree of divergence of semantic positions: the stronger their divergence (up to complete opposition), the higher the degree of dialogicity of the lesson [14].
The second indicator of the methodology (or rather, a system of indicators)	characterizes the form of dialogue, the technology of its implementation. This includes indicators such as the level of personification of message texts: the teacher’s communication style in the scale parameters (authoritarianism) - (democracy), (degree of categorical judgments), etc. [17].
Third indicator	this is the communicative technique of the leader, the structure of which includes the degree of argumentation, statements, possession of the formal logical rules of proof, the listening technique (reflective, not reflexive, empathic); the degree of rigidity of dialogue management (direct, indirect), etc. [19].

Using these indicators, it is possible to build the so-called “profile” of the communicative competence of the teacher, clearly demonstrating the features of the development of the structure of the communicative technique of the top game.

Building a profile of communicative competence allows you to develop guidelines for the development of individual components of the communicative technique of a teacher, which is of great practical importance. One of the important factors in the formation and development of creative thinking is dialogue interaction [8].

Joint problem solving in a situation of dialogue interaction allows you to put forward and test a large number of solution hypotheses, quickly notice errors, overcome psychological barriers. A joint solution is distinguished by increased motivation, creative elevation, greater efficiency and awareness of the solution compared to an individual search.

Unfortunately, in practice, the possibility of developing creative thinking in conditions of dialogue for the most part remains unrealized. One of the reasons is the insufficiency or just the absence of knowledge of psychological characteristics and the principles of making up constructive dialogical interaction, the flow of thought processes in a dialogue, as well as ignorance of the criteria for identifying tasks, the

solution of which is complicated in a dialogue due to the psychological characteristics of the tasks themselves.

Thus, firstly, the idea and rules of innovative technologies are aimed at solving the problems in a new, unconventional way. The teacher only creates the conditions for the direction of self-change and does not impose his plans, thereby forming the ability to think outside the box.

Secondly, as a result of "immersion" in the organizational and professional situation, the awareness of the need for new knowledge and skills is stimulated, the need for analysis of ways of activity and thinking is manifested. The mental process should be aimed at creating the value of reflection, without which the training of a future specialist of a new type, hardly makes sense.

Thirdly, the organization of intra-group and inter-group interaction is aimed at developing students' communication culture and teamwork skills.

Therefore, one of the most important problems is the transformation of games from an episode into an element of the training system of a sought-after specialist.

From the foregoing it follows the conclusion that currently the educational process at universities has become more complex in terms of its tasks, intensity and content. It requires a deep psychological and pedagogical understanding of the patterns of academic discipline, principles, methods of training and education, the formation of the student's creative personality by teachers [9]. The transition to a new pedagogy means updating all sides of a holistic pedagogical process - its content, forms, methods, and what is most difficult in the psychology of teachers and students - their way of thinking, leading to the development of creative activity of a future specialist.

Objects and methods of research. The main research methods were theoretical analysis and synthesis, comparison and generalization, modeling, studying the experience of professional activities of a future primary school teacher, and observation. In research work, to solve the tasks and verify the initial assumptions, the following research methods were mainly used: general logical methods and techniques (analysis of philosophical, anthropological, ethnographic, psychological, pedagogical, regulatory and other literature on the problems of vocational education, synthesis, abstracting, generalization, analogy, structural-functional method and probabilistic-statistical methods); methods of theoretical knowledge (axiomatics, formalization, deduction, ascent from the abstract to the concrete); methods of empirical research: (observation, interviewing, questioning, bibliographic method; in vivo experiment, comparison, description, monitoring, measurement); a systematic approach to conducting historical-pedagogical and logical analysis, generalization and analysis of pedagogical experience; modeling of pedagogical processes; pedagogical design used to develop regulatory and software-technological support. The methodology of experimental work was developed; indicators and criteria for assessing the effectiveness of the identified conditions were specified; a pedagogical experiment was conducted; educational and methodological support was developed for the educational process of professional training of the future primary school teacher, aimed at creating the creative abilities of the future teacher and the competencies of graduates.

The formation of a modern specialist is impossible without a personal approach, based on the identification and mandatory consideration of the student's individual qualities, the comprehensive development of his creative abilities, the widespread assimilation and active use of innovative teaching technologies in order to stimulate the creative potential of future specialists - a key moment in the modernization of higher education [10].

At present such teaching methods that would lead to joint productive activities are needed, where the absolute opposition of the goals of the teacher and students is removed, an atmosphere of co-creation is created in a joint search for ways and solutions to the problem. According to its content and forms of organization, the educational process should develop in student such creative personality traits as the independence of thinking and action. Therefore, the main task of the teacher is not to mechanically convey a certain amount of knowledge, but to instill in the student a methodological culture of thinking, to equip the methodology with an approach to solve the diverse problems put forward by practice [11].

This is how the educational process of group, so-called brainstorming, debates are built, as a result of which the ability to make independent judgments, the ability to conduct a scientific dispute, and the democratic culture of the individual are improved. The ability to hear the point of view of another,

understanding and objectivizing the subject of the dispute is possible only in the process of using a dialogue in the educational process, which should be considered as a source of cognitive activity and psychological and pedagogical conditions for self-expression of the creative potential of the student's personality [12].

In the course of the study, we determined the principles of forming the creative potential of students: the principle of unity in the formation and development of the creative potential of students; the principle of unity of innovative, systemic, competency-based, personality-developing approaches in the formation and development of the creative potential of students; the principle of continuity and succession in the development of the creative potential of students.

The organization of the pedagogical process is impossible without scientifically based modeling of both the system of general pedagogical training and the process of forming the creative potential of students. The modeling process consisted of the following steps: determining the nature of the model, constructing a scheme, and characterizing each element of the scheme.

The experimental work was carried out in the conditions of lecture and practical classes, pedagogical practice of students, in the process of cooperation between student-teacher and scientist in the course and diploma work. In the context of the innovative approach, the parameters for assessing and self-evaluating the development of creative erudition, creative skill and readiness for creative pedagogical activity in students were developed and implemented.

The author's methodology for developing the creative potential of students was composed of: the method of compiling individual student glossaries, the method of individual interpretation of reference schemes for classes in psychology, pedagogy; the method of informational and methodological support for independent research activities of students, independent work of students with printed workbook materials, the method of "oral journals" (preparation and conduct of student pedagogical olympiads, pedagogical mastery contests), the method of creative drama (student improvised theatricalization of pedagogical miniatures)

In order to develop the creative personality of a future specialist, we used such interactive teaching methods as: problematic presentation of material during lectures, a heuristic method for conducting seminars, laboratory and practical classes in psychological and pedagogical disciplines, organizational and activity, problem-oriented, business and role-playing games imitating elements of the future professional activity of students.

Innovative teaching methods should be used in the process of conducting all types of classroom activities with students. For example, a problematic (active) seminar can be held in the form of a theoretical game, when small creative groups organized on the basis of a student group show each other the advantages of their concept, their scientific project. The solution of a series of problematic problems can be submitted to a practical lesson devoted to testing or evaluating a certain theoretical model or technique, and the degree of suitability in these conditions. The main goal is the development of creative skills, the formation of creative potential and professionally-oriented thinking. Systematic learning of subject and social skills in the process of business games contributes to the development of a creatively active, professionally and socially competent personality of a future specialist.

The integrity of the methodology was provided by a system-forming component - a focus on making students readiness for creativity in pedagogical activity, readiness for competent support for the creative development of students. An analysis of the results of the experimental work using a system of non-rigid algorithms of innovative learning made it possible to identify positive dynamics in the development of students' creative potential.

The entire course of the experimental work convincingly showed that with the consistent implementation of the identified conditions in the experimental groups of subjects, there was a positive dynamics in the formation of the creative potential of students.

Results. The experimental work was carried out on the basis of the Historical and Pedagogical Faculty of Akhmet Yassawi International Kazakh-Turkish University. The experiment involved second-year students of "General Pedagogy and Ethnopedagogy" department. Students of the control and experimental groups took part in the experiment. The control group included 42 students, and the experimental group 44 students. The total sample of subjects was 86 students. In the course of the

experimental work, the initial level of development of the students' creative potential was revealed on the basis of determining the degree of formation of its basic criteria: erudition, skill, readiness.

After implementing all the requirements for the experiment in accordance with the student assessment program, the results obtained during the experiment were compared and statistical data were established. Based on the analysis of the results obtained, the advantages and disadvantages of the use of information and communication technologies and the traditional approach in the educational process were identified, and the effectiveness of the integration process of the traditional approach and information and communication technologies in the educational process were established [13-14].

In order to determine the effectiveness of students' creative potential formation on the basis of an innovative approach, the results of students who participated in the experimental group and the results of students who participated in the control group were compared.

To prove the degree of formation of students' creative potential on the basis of an innovative approach, it is necessary to show that the experimental and control samples have significant differences in the chosen indicator - the ability to independently analyze the task, and correlate it with the practice of professional activity. To process the results of the experiment, Student's t-test was used, which allows us to establish similarities and differences between the two empirical distributions.

The mathematical package "Statistica" was used. Using the Descriptive statistics of the Basics Statistics / Tables mode of this tool, the hypothesis of matching samples to normal distribution was tested.

Based on these values, the average score and standard deviation were calculated for each group (table 2).

Table 2- The value for each group of the average score and standard deviation.

Numeric characteristics	1st sample (control group)	2nd sample (experimental group)
N (number of students)	42	44
M (average score)	3,14	3,8
y (standard deviation)	0,61	0,32

For this number of trained df =44+42=83. The obtained empirical value of the t-criterion equal to t = 3,376 exceeds the critical value for c=0,01 (t_{crit} = 2,639), but is less than the critical value for c=0,001(t_{crit}=3,416), therefore, we can conclude that there is a statistically significant difference in arithmetic mean values in two samples and about the advantages of the second (experimental) methodological system for conducting a lesson on the basis of an innovative approach.

The final test conducted with students from the control and experimental groups is aimed at identifying the effectiveness of the formation of students' creative potential based on an innovative approach. The concept of coefficient K is introduced for the relative total assimilation of knowledge by students of one group. The coefficient K of the relative total assimilation of knowledge by students of one group is calculated by the formula

$$K \frac{1 \text{ x } N_5 + 0{,}9\, x\, N_4 + 0{,}6\, x\, N_3 + 0{,}3\, x\, N_2}{N}$$

where K is the assimilation coefficient, N_5, N_4, N_3, N_2 is the number of students whose answers are rated respectively at “5” - 90-100 points, “4” - 70-90 points, “3” - 50-70 points, and N is the total number of students in the group. The result was evaluated on average by the following relationships: “excellent”, with 0.9_<K_<1; “Good”, at 0.7_<K_<0.9; "Satisfactory", at 0.5_<K_<0.7; "Unsatisfactory", with K<05;

The experimental results were processed and summarized for comparison in table 3.

Table 3 - Generalized comparative results of testing students' knowledge on two tests.

Groups	K	
	Control test	Final test
Control	0.74	0.62
Experimental	0.88	0.93

Conclusions. From the results obtained, reflected in (table 3) and the histogram (figure 1), as well as the results obtained, it can be concluded that the experimental work confirmed the effectiveness of the process of forming students' creative potential on the basis of an innovative approach.

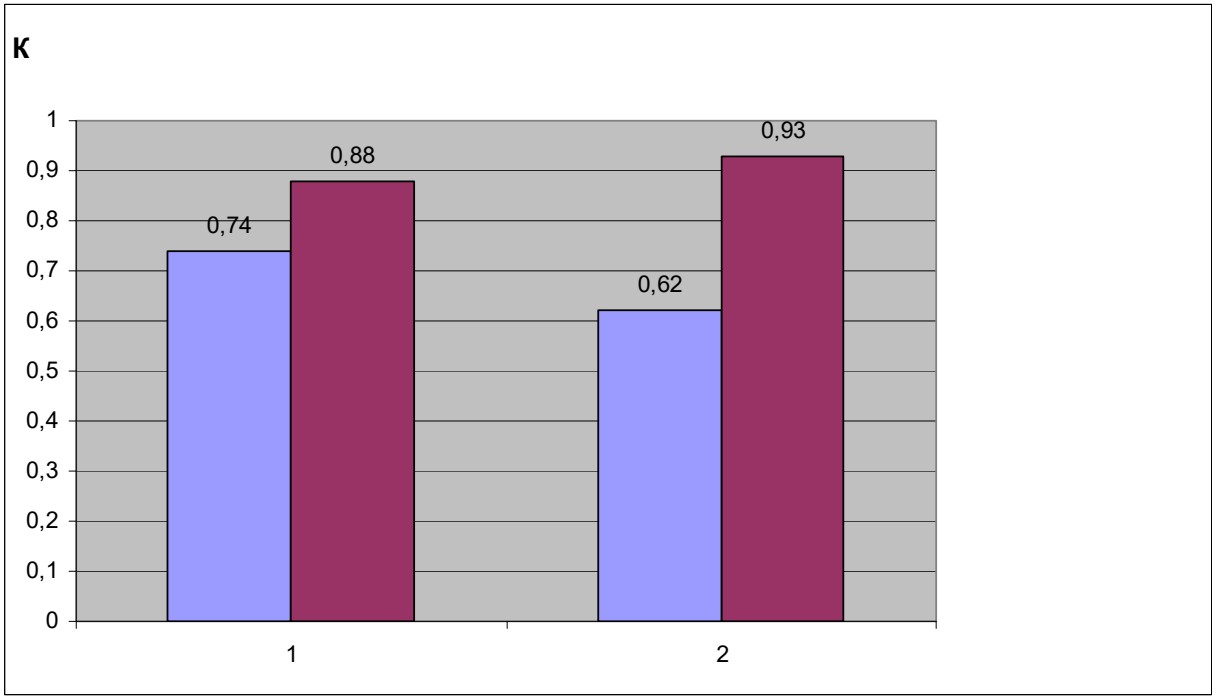

Figure 1 - Generalized comparative results of testing students' knowledge in two tests

Students who actively participated in the group with the use of visualization gave significantly better results in the control and final tests. Statistical results show:

- test results were higher than critical values;
- values were below 0.05;
- the effectiveness of the ratio was higher.

Based on the results obtained, the following conclusions can be drawn:

- the efficiency of meaningful learning the material was much higher among students of the experimental group, where innovative methods and information and communication technologies were used in the classes. Students of the experimental group received high scores in the final tests;
- improvements were observed in students who had difficulty in learning the material using traditional approaches;
- the number of students who learned the material and applied this knowledge in other disciplines increased, which influenced the success of the group as a whole;
- the test results for students of the experimental group were much higher than for students in the control group, which indicates the effectiveness of the use of innovative approaches and information and communication technologies in the formation of students' creative potential;
- the use of an innovative approach and information and communication technologies in the educational process has increased student performance.

The presented visualization of the formation of the creative potential of students at all stages of the experimental work gives grounds to state that, in accordance with the experimental hypothesis, when using the innovative approach and the totality of pedagogical conditions, from stage to stage, there was a positive dynamics in the development of the desired quality in a creatively developing educational space of continuing teacher education systems.

We state the fact that the analysis of experimental work shows that the use of an innovative approach in the process of training is of great importance and contributes to the formation of students' creative potential. Scientific and practical research will be continued by us, and at this stage of our work, we

conclude on the importance and relevance of the formation of students' creative potential on the basis of an innovative approach, modernization of the educational process, updating the content of the training process, which accordingly affect the change in future professional training professionals with a high level of creativity.

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ИННОВАЦИЯЛЫҚ ТӘСІЛДЕР НЕГІЗІНДЕ СТУДЕНТТЕРДІҢ КРЕАТИВТІ ӘЛЕУЕТІН ҚАЛЫПТАСТЫРУ

Аннотация. Негізгі курс Қазақстандық білім беруді реформалау мен жаңғырту және Қазақстан Республикасының Болон үдерісіне қосылуы жағдайында Қожа Ахмет Ясауи атындағы Халықаралық қазақ-түрік университетінде халықаралық деңгейдегі мамандарды даярлау және білім беру сапасын арттыру мақсатында болашақ мамандарды кәсіби маман ретінде әрі жасампаз әлеуетті, кәсіби-шығармашылық құзыретті шығармашыл тұлға ретінде де даярлаудың жаңа педагогикалық негіздерін әзірлеуге бағытталған. Болашақ мамандардың кәсіби даярлығын жетілдірудің резервтерін іздеу оның креативті әлеуеті мен коммуникативті құзыреттілігін қалыптастыру және дамыту жазықтығына қарай ауысады. Жоғары мектептің білім беру ортасын болашақ мамандығы бойынша өз қабілеттерін іске асыра білу факторы және білім алушылардың шығармашылық дамуын құзыретті қолдаудың алғышарттары ретінде студенттердің шығармашылық әлеуеті мен құзыреттілігін қалыптастыруға және дамытуға ықпал ететін бірыңғай шығармашылық тұрғыдан дамытушы білім беру кеңістігіне айналдыру қажеттігі туындайды.

Түйін сөздер: креативтілік, инновация, креативті әлеует, креативті белсенділік.

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ФОРМИРОВАНИЕ КРЕАТИВНОГО ПОТЕНЦИАЛА СТУДЕНТОВ НА ОСНОВЕ ИННОВАЦИОННЫХ ПОДХОДОВ

Аннотация. В условиях реформирования и модернизации казахстанского образования и присоединения Республики Казахстан к Болонскому процессу в Международном казахско-турецком университете им. А.Ясави в целях подготовки специалистов международного уровня и повышения качества образования основной курс направлен на разработку новых педагогических оснований становления будущего специалиста и как профессионала, и как творческой личности, обладающей креативным потенциалом и профессионально-кретивной компетентностью. Поиск резервов совершенствования профессиональной подготовки будущих специалистов смещается в плоскость формирования и развития его кретивного потенциала и коммуникативной компетенции. Возникает необходимость превращения образовательной среды высшей школы в единое творчески развивающее образовательное пространство, способствующее формированию и развитию у студентов креативного потенциала и компетентности как фактора успешной самореализации в профессии и предпосылки компетентной поддержки творческого развития студентов.

Ключевые слова: креативность, инновация, креативный потенциал, креативная активность.

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ISSN 2518–1467 (Online), ISSN 1991–3494 (Print)

http://www.bulletin–science.kz/index.php/en/

Редакторы *М. С. Ахметова, Д. С. Аленов, А. Ахметова*
Верстка на компьютере *А.М. Кульгинбаевой*

Подписано в печать 10.02.2021.
Формат 60x881/8. Бумага офсетная. Печать – ризограф.
20,17 п.л. Тираж 500. Заказ 1.