



## PROVIDING A METHODOLOGICAL SYSTEM OF MODULAR EDUCATION IN PROFESSIONAL TRAINING OF FUTURE TECHNOLOGY TEACHERS IN THE CREDIT-MODULE SYSTEM

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**Abstract:** This article presents scientific information about the process of implementing the methodical system of modular education in the professional training of future technology teachers.

**Key words:** technology, innovation, novation, technical-technological, credit-module, professional-methodical, competence, modular education, professional mobility, modular technology, didactics.

Bachelors in the field of "Technological education" and masters in the field of "Theory and methodology of education and training (technological education)" study in all higher education institutions of our republic that train pedagogues.

"State educational standard of higher education" in the direction of "Technological education". Based on the analysis of the main rules and the qualification requirements of this field, the training plan for the specialty will be drawn up. Coordinating councils of teachers should be organized to unify the content of subjects with similar conceptual and terminological apparatus in terms of general and professional competencies.

Therefore, teachers of subjects that form professional-methodical skills in students ("Psychology", "Pedagogy", "Introduction to Specialization", "Technological Education Methodology", etc.) - by creating coordinating councils for professional-methodical skills teachers complete a database of key concepts and terms for their subjects. After that, their general activities are regulated in the coordinating council, that is, the general conditions and terms of their study are determined. A single bank of basic interdisciplinary terms and concepts is created for each subject block. Certain concepts, terms, topics, sections are defined so that the sequence of teaching is not repeated. The order of their mastery is pre-entered into the table and creates a dictionary of common terms and concepts for subjects. By constantly working with such a dictionary, the student will better master the content of these subjects.

Teachers use the base of basic interdisciplinary terms and concepts when creating control tests of knowledge on concepts and terms previously learned by students in subjects with similar objects and subjects of study.

The Coordinating Board of Professional-Methodical Skills organizes the study of individual topics as follows. For example, the topic "Principles of education" is studied in "Pedagogy" and "Methodology of technological education". Only in the science of "Pedagogy" are studied general issues, concepts of principles and laws of learning, history of the issue, classification of principles, views of scientists, etc. In the subject of "Technological Education Methodology", the specific principles of teaching "Technology" at school are studied without

focusing on the history of the issue, the views of various scientists on the classification of principles. The same thing happens in other topics, for example, "Educational methods", "Forms of education", "Structure of the educational process" and others. As a result of such integration, time is allocated for in-depth study of other topics and departments.

It performs an integrative function by embodying all the competencies acquired by students in learning other subjects related to the specialty and implementing pedagogical practice.

After the order of learning topics, sections and concepts is agreed upon in the coordinating council, the module programs of the subjects are developed by the teachers. The content of the subject is structured according to the main topics or sections, that is, the module program of the subject consists of large blocks - modules, for which unifying didactic goals, the sequence of placement of modules and the order of their study are determined.

The number and content of modules with modular training in each academic subject, the ratio of theoretical and practical training in each of them, their sequence, the content and forms of module control, the schedule of the project assignment (if it is if provided for in the plan), the content and forms of the final control are determined [6].

Mastering the content of science in modular education includes three elements:

- the first is to read problematic and guiding lectures that provide generalized information on the main issues of the course. Lectures on subjects are built on the principles of developmental education aimed at developing students' creative abilities;
- the second - independent work of students - this is reading the specified literature, getting acquainted with the main scheme of the relevant lecture, completing the assigned tasks and entering the necessary notes in the module;
- the third - seminars and laboratory-practical trainings are developed together with lectures, their content is supplemented by learning new material and acquiring certain practical skills.

One of the learning elements of the module may include conducting an interview. Conversation is a question-and-answer method to engage students in discussion and analysis of a topic of interest. The heuristic interview method got its name from the method of teaching "heuristics" (finding, opening, searching). By its very nature, heuristic conversation is group thinking or conversation as a search for an answer to a problem. In pedagogy, this method is called the method of problem-based education.

The content of the next learning element may include a discussion. Discussion in the pedagogical process is one of the methods of active learning. Discussion is a group discussion of a problem or set of questions to find the right answer. The topic of discussion will be announced in advance. Students should get the necessary information and study relevant literature. During the discussion, each student can express his point of view. Debate develops the ability to prove, formulate a problem, and reason. The discussion method begins with a specially programmed free discussion of the theoretical issues of the curriculum and formulation of questions for it.

Debate is a method of mobilizing students' activity to form correct attitudes and opinions; a way of learning to fight against wrong ideas and concepts. Students learn to defend their views and convince others.

The next educational element is the business game (delovaya igra). The business game method did not appear in the educational system, but in the practical field of management.

Currently, business games are used not only in classes in higher education institutions, but also in scientific research, collective decision-making, project development, etc. In modular training, the essence of this method is to model the state of activity that should be taught to students in order to train future specialists to perform the relevant professional functions according to the models.

Mental attack (Mozgovoi shturm) (L.F. Osborn) is another educational element of the module. The main goal of the method is to gather as many ideas as possible as a result of freeing the participants from thinking inertia and stereotypes in a relaxed environment. The work is carried out in the following groups: generating ideas, analyzing the problem situation and evaluating ideas, developing countermeasures. The generation of ideas is carried out in groups according to certain rules. Any criticism is prohibited during the idea generation stage. Replies and jokes are strongly encouraged. Then the ideas received in the groups are systematized, combined according to common principles and approaches. In addition, various obstacles to the implementation of the selected ideas are considered. Any critical comments made will be appreciated. Only ideas that have not been rejected by critical thinking and opposing opinions are selected [6].

The next educational element of the module is a round discussion. The roundtable method is derived from politics, as roundtables are usually organized by representatives of different political or scientific orientations to discuss specific issues. In the educational process, this method is used to increase the effectiveness of mastering theoretical issues by examining problems from different scientific perspectives with the participation of experts in various fields.

One of the learning elements may include a quick survey. For example, when preparing for the lesson individually (outside the classroom), students study the content of the lecture topic based on lecture texts, textbooks, study guides and other sources. They prepare questions to take part in an express survey in the workshop, where they are divided into two teams and ask each other questions of different levels of complexity. If the answer to the question turns out to be complete, the respondent asks for homework in the survey, and if it is not complete enough, other group members fill in, clarify or deepen the content of the answer. The express survey is scored according to the information developed for the module training.

In the next learning element of the module, a corresponding seminar or laboratory-practical training plan should be specified. Students can create a main or additional report, message, as they choose. Lecturers must highlight the main idea of the message they heard and summarize the answer, for which they will receive appropriate points.

In one of the learning elements, written work can be planned, in which the answer to each question should include text and graphic parts that reveal and illustrate the content of the topic. Task cards of different levels of difficulty are offered - A, B and C. Written work helps to deepen the mastery of the topic, develop logical thinking and concentration, allows students to carefully and deeply study the essence of module questions, clarity of thoughts, conciseness and get used to the consistency.

In order to improve the quality of education, it is possible to integrate modular teaching with other educational technologies when creating an execution block (learning elements):

- attitude to education as creative interaction of teacher and student (modern humanistic pedagogy is based on the ideas of psychologists A. Maslow, K. Rogers and their school);



- education without coercion;
- the idea of a difficult goal, the most difficult goal is set before the student and the confidence to overcome it is awakened;
- self-analysis (individual and collective summarization of the results of students' activities);
- free choice (the teacher uses the study time as he wishes to better master the educational material);
- use of supports (reference signals from V.F. Shatalov, diagrams from S.N. Lisenkova, supporting parts from E.N. Ilyin, etc.);
- problem education;
- project-based education (John Dewey);
- distance education and others.

Piaget and his followers in their works developed the apperceptive theory in cognitive theories of learning (problem learning) promoting learning through interest, then the material for the initial mastery of the conditions of the task (problem) provides. After that, the stage of forming a hypothesis, choosing the ideas (concepts) necessary for solving and checking the correctness of these ideas is carried out. According to this concept, learning leads to intellectual development. This is how the pedagogical situation models the sequence of conscious action. Educational content teaches and develops mental abilities based on which students are possible.

For example, in one of the learning elements, you can plan to implement mini-projects (project-based learning technology). A project is literally a prototype "thrown forward", and the prototype of any object, type of activity and design becomes the process of creating a project [4].

The project method appeared in agricultural schools in the United States in the 1920s due to the pedagogical ideas of the American philosopher and pedagogue John Dewey (1859-1952). It was originally called the "problem method" or the "targeted action method." J. Dewey suggested that teaching be built on an active basis, through the purposeful activity of the student, in accordance with his personal interest in this specific knowledge. Here, an important problem that is familiar and relevant to the student is taken from real life, and to solve it, he must apply the knowledge he has acquired and new knowledge that has not yet been acquired. The teacher suggests new sources of information or simply directs the audience's thoughts in the right direction for independent research. As a result, students solve the problem independently and in joint efforts, apply the necessary knowledge from various fields, and achieve a real and concrete result. Thus, the entire problem takes the form of project activity. Its essence is to stimulate students' interest in certain problems, which include acquiring certain knowledge, and to apply the knowledge gained through project activities, which include solving one or more problems, in practice, i.e., from theory to practice. is to show [5].

The project method is focused on individual, pair, and group independent activities of students for a certain period of time. This approach is organically combined with a group approach to learning. The project method always involves solving some kind of problem combined with problem-based learning.

Project-based learning is one of the possible ways to implement problem-based learning. When a teacher sets a task, he defines planned learning outcomes and initial

information. Students have to do everything else by themselves: set intermediate tasks, look for ways to solve them, act, compare, compare what is received with what is required, coordinate their activities [1].

Algorithm for working on the project:

1. Preparation stage (choosing the topic of the project, choosing the type of project, forming groups, defining the problem, assigning tasks to groups).

Types of projects: research, creative, role-playing (game), familiarization and orientation (informational), practice-oriented (practical), mono-projects.

2. The main stage (information gathering, information processing, project development, project implementation).

3. Final stage (project defense, conclusion, reflection).

When using project-based education, the following requirements are taken into account[7]:

1. The existence of a creative problem that requires integrated knowledge on the subject of the project and the search for its solution.

2. Practical, theoretical, cognitive significance of expected results. The result of the project activity should have a certain value, be useful for society and a person.

3. Independent (individual, pair, group) creative activity of students.

4. Compilation of the content of the project (showing step-by-step results).

5. Use of research methods: identification of the problem, research tasks arising from it, hypothesizing for their solution, discussion of research methods, design of final results, analysis of acquired knowledge, generalization, correction, conclusions.

The project is final if, according to the results of its implementation, students' mastery of certain educational material is evaluated, it is current if only part of the educational content is removed from the course for self-study and project activities. can be [4].

Students work in groups of 5-6 people when applying the project technology of teaching to the students of the "Technological education" department, studying the "Production technologies" department of technological sciences. The teacher offers a variety of project topics, where students choose the topic that is most important or interesting to them. Let's consider the algorithm of group work on the example of a topic such as "Organization of one's own enterprise". Students are encouraged to set up their own businesses where they:

- providing general information about the enterprise (location, means of communication, etc.);

- providing summarized information on the main indicators of the material and technical base of the enterprise (area, number of production employees and fixed assets);

- providing information about the structure of the enterprise (a list of all workshops and farms of the enterprise, the buildings and areas occupied by them, installed equipment and the salary fund of all employees in each workshop);

- providing information about the products produced at this enterprise (to prove the need to produce this particular product).

Students then identify a task for each member of the group:

1. Drawing up the master plan of the enterprise, the production structure of the enterprise (the structure of the enterprise workshops, the procedure and forms of their cooperation in the implementation of the production process).

2. Making a map plan of the territory.



3. Construction of schematic plans and plots of buildings (corpus) where workshops are located.

4. Creation of the production structure of the workshop (the structure of the workshop sections, the procedure and forms of their cooperation in the implementation of the production process).

5. Construction of equipment scheme according to technological or formal principles.

6. Development of a technological route of product processing.

7. Profitability of product release.

The time for students to work on the project is set, the work is done step by step.

At the first stage, students are invited to choose project topics, groups are formed, tasks are assigned to groups. Students divide into groups and think about a list of products, type of business, location, etc.

In the second stage, each member of the group collects information, processes it and performs his task (draws a diagram or develops a technological route). The whole group then works together to complete the project. The work of each participant in the group is discussed, they complete it, they help each other, they prepare to defend their project.

The third stage is project protection. A group that decides to establish its own enterprise must prove the feasibility of opening this enterprise, its profitability, the need to produce this particular product, etc. Other participants who are not included in this group listen, ask questions, evaluate and decide whether to accept (or not to accept) the project. When evaluating the project, it is necessary to take into account versatility, safety, aesthetics, economic efficiency.

Teaching students on a project basis is a didactic tool for activating cognitive activity, developing creativity, and at the same time forming certain personal qualities. The project method allows you to form some personal qualities: the ability to work in a team, to take responsibility for a choice, to make decisions, to distribute responsibilities, to analyze the results of activities.

Referring to the image of the main structural and logical diagrams of the educational material, it should be noted that in modular teaching, the module should be started with a block diagram that reflects the content of the module and all the theoretical materials of the module are described in a concise and easy-to-learn form. It is appropriate to conclude with a diagram. The effectiveness of mastering the module depends not only on the method of presenting the educational material, but also on how well the teacher develops and organizes the set of tasks (learning elements). The task is the main structural unit of the content of any academic subject. For the student, it serves as an illustration of the theory, an opportunity to solve a practical situation, to develop certain methods of solving, to analyze and evaluate the results of educational and cognitive activities.

The use of a point rating system is also a good way to encourage healthy competition among students, and systematic independent work should be organized. A score sheet is prepared by each student for each module. The data is then collected by the teacher and entered into the main table. After completing all learning elements with accumulated points, an arithmetic mean score is displayed for each student and a rating is made. The highest number of points is level 1, a little less is level 2, and so on. Such a system stimulates the daily work of students, significantly increases the competitiveness in studies and eliminates problematic events when passing exams.



Let's look at the difference between the credit-test (kreditno-zachetnaya sistema) and rating system of education. A student who successfully completes the study of a subject receives the number of credits allocated for this subject [2]. He will use these credits for further studies (bachelor's or master's degree). The difference in student achievement is determined by the grade, credit indicates the structure of the learning process, but does not indicate the level of knowledge of the student. In other words, the credit shows only the time spent on a particular subject, and it is not related to the individual's understanding or the difficulty of that subject.

A student will receive the appropriate amount of credit only if he/she successfully passes the course, subject completion, that is, if he/she receives a grade lower than the specified one (this is a "satisfactory" grade). The score in the documents (ultimately in the supplement to the diploma) is shown in parallel with the amount of credits received.

Our country has a 5-point evaluation system; other countries use more decimal scales (ten, twenty or hundred points). In European higher education institutions, the total score awarded at the end of each course usually consists of several components (three to four). For example, 30% of the total grade can be based on the student's activity in class, another 30% on the results of midterm control, and the remaining 40% on the exam grade.

Ratings have proven themselves well in many higher education institutions as a means of additional motivation for student learning, as a way of actively involving students in the educational process [3]. Ratings can significantly improve the quality of students' academic work, support their most talented and active students.

Thus, designing a methodical system of modular training of students in the field of "Technological education" means directing students to the goal of educational activity by the teacher based on the educational content, encouraging them to accept it, student modeling the learning process by defining a system of self-management and self-evaluation, taking into account the individual characteristics of a person.

### References:

1. Anoshkin, A.P. Pedagogical design system and technological training: Ucheb.posobie / A.P. Anoshkin. - Omsk: Izdvo OmGPU, 1997. - 140p.
2. Zaripov L.R. Key approaches to professional preparation of future technology teachers. International bulletin of applied science and technology. Vol.3, No.1, 2023. 116-120 pgs.
3. Zaripov L.R. Theoretical basis of professional training of future technology teachers. International Journal of Inclusive and Sustainable Education. Vol.2, No.2, 2023. 55-61 pgs.
4. Morozova, O.P. Pedagogical practice: Uchebnye zadania. Zada-chi i voprosy / O.P. Morozova. - M., 2000. - 320 p.
5. Novye pedagogicheskie i informatsionnye tehnologii v sisteme ob-razovaniya: ucheb, posobie dlya stud. ped. Vuzov / E. S. Polat, M. Yu. Bukharkina, M. V. Moiseeva, A. E. Petrov; pod ed. E. S. Steel. - 3-e izd., ispr. i dop. - M.: Academy, 2008. - 268 p.
6. Pedagogy: Bolshaya sovremennaya encyclopedia / Sost. E.S. Rapatsevich - Mn.: "Sovrem". Slovo", 2005. - 720 p.
7. Pedagogical technology: Uchebnoe posobie dlya studentov pedagogicheskikh spetsialnostey / Pod obshchey ed. V.S. Kukushina. — Series "Pedagogicheskoe obrazovanie". - M.: IKT "MarT"; Rostov n/d: Izdatelsky center "MarT", 2004. 336 p.



8. Davlatmirzayevich, A. A. 应用远程教师专业发展: 基础阶段. SCIENTIFIC RESEARCH OF THE SCO COUNTRIES: SYNERGY AND INTEGRATION, 40.
9. Аскарлов, А. Д. (2016). ПРОБЛЕМЫ ОРГАНИЗАЦИИ ДИСТАНЦИОННЫХ КУРСОВ ПОВЫШЕНИЯ КВАЛИФИКАЦИИ ПЕДАГОГИЧЕСКИХ КАДРОВ С УЧЕТОМ ИХ ОБРАЗОВАТЕЛЬНЫХ ПОТРЕБНОСТЕЙ. In Инновационные технологии в современном образовании (pp. 48-52).
10. Askarov, A. (2015). Organizational-pedagogical stages of applying istance professional development of pedagogic personnel. The advanced science journal, (4), 72.
11. Аскарлов, А. Д. (2019). ТЕХНОЛОГИЯ ПРОГНОЗИРОВАНИЯ РЕЗУЛЬТАТИВНОСТИ УЧЕБНЫХ ПРОЦЕССОВ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ. ПРОБЛЕМЫ И ТЕНДЕНЦИИ НАУЧНЫХ ИССЛЕДОВАНИЙ В СИСТЕМЕ ОБРАЗОВАНИЯ, 11.
12. Куронов, М., & Аскарлов, А. Д. (2019). ПЕДАГОГИЧЕСКОЕ СОПРОВОЖДЕНИЕ СЕМЕЙНОГО ДУХОВНО-НРАВСТВЕННОГО ВОСПИТАНИЯ ДЕТЕЙ ДО 18 ЛЕТ (ИЗ ОПЫТА УЗБЕКИСТАНА). In Наука и инновации-современные концепции (pp. 55-59).
13. Аллаярова, С. Н., & Аскарлов, А. Д. THE NEEDS OF IMPLEMENTING INFORMATION TECHNOLOGIES IN HIGHER EDUCATION (The case of Uzbekistan as an example) НЕОБХОДИМОСТЬ РЕАЛИЗАЦИИ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В ВЫСШЕМ ОБРАЗОВАНИИ (на примере Узбекистана).
14. Askarov, A. D. (2020). The needs of implementing information technologies in higher education (The case of Uzbekistan as an example). In Информационные и инновационные технологии в науке и образовании (pp. 14-18).
15. Аллаярова, С. Н., & Аскарлов, А. Д. THE NEEDS OF IMPLEMENTING INFORMATION TECHNOLOGIES IN HIGHER EDUCATION (The case of Uzbekistan as an example) НЕОБХОДИМОСТЬ РЕАЛИЗАЦИИ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В ВЫСШЕМ ОБРАЗОВАНИИ (на примере Узбекистана).
16. Аскарлов, А. Д. (2021). УМУМТАЪЛИМ МАКТАБЛАРИ ЎЎУВЧИЛАРИДА ХАЛҚ ҲУНАРМАНДЧИЛИГИГА БЎЛГАН ПСИХОЛОГИК-ПЕДАГОГИК ИМКОНИАТЛАР: DOI: <https://doi.org/10.53885/edinres.2021.86.41.080> Аскарлов Аброр Давлатмирзаевич, Педагогика фанлари бўйича фалсафа доктори (PhD), доцент. Термиз давлат университети, Таълим сифатини назорат қилиш бўлими бошлиғи. Образование и инновационные исследования международный научно-методический журнал, (1-Махсус сон), 28-31.
17. Аскарлов, А. Д. (2021). ТЕХНОЛОГИЯ МАШҒУЛОТЛАРИДА АХБОРОТ ТЕХНОЛОГИЯЛАРИНИ ҚЎЛЛАШНИНГ ҚИЁСИЙ ТАҲЛИЛИ: DOI: <https://doi.org/10.53885/edinres.2021.83.76.005> Аскарлов Аброр Давлатмирзаевич, Педагогика фанлари бўйича фалсафа доктори (PhD), доцент. Термиз давлат университети, Таълим сифатини назорат қилиш бўлими бошлиғи. Образование и инновационные исследования международный научно-методический журнал, (1-Махсус сон), 24-27.
18. Davlatmirzaevich, A. A. (2021). Competences in information and communication technologies.
19. Davlatmirzaevich, A. A. (2021). COMPETENCES IN INFORMATION AND COMMUNICATION TECHNOLOGIES (ON THE EXAMPLE OF UNIVERSITY PROFESSORS).
20. Davlatmirzaevich, A. A. (2021). The online environment for faculty development management environment and its structure.

21. Davlatmirzayevich, A. A. (2022). Main Tendencies and Modern Models of Educational Quality Management. Eurasian Scientific Herald, 6, 16-23.
22. Askarov, A. (2022). RAQOBATBARDOSH KADRLARNI TAYYORLASHDA OLIY TA'LIM SIFATI MENEJMENTINING ZAMONAVIY TENDENSIYALARI. Физико-технологического образование, (3).
23. Аскарлов, А. Д. (2022). ОЛИЙ ТАЪЛИМ МУАССАСАНИ РИВОЖЛАНТИРИШ СТРАТЕГИЯСИ ВА БОШҚАРУВ ҚАРОРЛАРИНИ ДИЗАЙН-ТАФАККУР ЁНДАШУВИ АСОСИДА ШАКЛЛАНТИРИШ. BOSHQARUV VA ETIKA QOIDALARI ONLAYN ILMIY JURNALI, 2(9), 10-18.
24. Аскарлов, А. Д. (2022). ОЛИЙ ТАЪЛИМ МУАССАСАСИДА ТАЪЛИМ СИФАТИ МОНИТОРИНГИНИ ТАКОМИЛЛАШТИРИШНИНГ АЙРИМ ЖИХАТЛАРИ: DOI: <https://doi.org/10.53885/edinres.2022.84.66.014> Аскарлов Аббор Давлатмирзаевич, Педагогика фанлари бўйича фалсафа доктори (PhD), доцент. Термиз давлат университети таълим сифатини назорат қилиш бўлими бошлиғи. Образование и инновационные исследования международный научно-методический журнал, (3), 68-77.
25. Аскарлов, А. Д. (2022). ОЛИЙ ТАЪЛИМ МАЗМУНИГА БЎЛГАН КАДРЛАР БУЮРТМАЧИЛАРИ ТАЛАБЛАРИ ВА ИЖТИМОЙ ЭХТИЁЖЛАРНИ ТИЗИМЛАШТИРИШ. ИННОВАЦИИ В ПЕДАГОГИКЕ И ПСИХОЛОГИИ, 5(5).
26. Shomirzayev M. K. Developing Educational Technologies In School Technology Education //Next Scientists Conferences. – 2022. – С. 14-23.
27. Shomirzayev M. K. et al. National handicrafts of Uzbekistan and its social–economic significance //European Journal of Research and Reflection in Educational Sciences. – 2020. – Т. 8. – №. 8. – С. 129-138.
28. Shomirzayev M. K. Education is personally focused technology //European Journal of Research and Reflection in Educational Sciences Vol. – 2020. – Т. 8. – №. 8.
29. Shomirzayev M. K. Technology of Educational Process in School Technology Education //The American Journal of Social Science and Education Innovations. – 2020. – Т. 2. – №. 07. – С. 212-223.
30. Shomirzayev M. K. The Ethical Characteristics of Traditional Embroidery of Fergana Valley People //European Journal of Research and Reflection in Educational Sciences. – 2019. – Т. 2019.
31. Shomirzayev M. K. Local features of the traditional embroidery of the Ferghana valley //European Journal of Research and Reflection in Educational Sciences. – 2019. – Т. 2019.
32. Shomirzayev M. K. The Concept Of Pedagogical Technology And Basic Principles. Academia: An International Multidisciplinary Research Journal.(Affiliated to Kurukshetra University, Kurukshetra, India), Vol. 10, Issue 11, November 2020 Scientific Journal Impact Factor (Sjif 2020-7.13).-Part 1554-1563.
33. Shomirzayev M. K. The concept of pedagogical technology and basic principles //ACADEMICIA: An International Multidisciplinary Research Journal. – 2020. – Т. 10. – №. 11. – С. 1551-1560.
34. Shomirzayev M. K. Ethnic characteristics of national traditional crafts //European Journal of Research and Reflection in Educational Sciences Vol. – 2020. – Т. 8. – №. 12. – С. 216-225.

35. Shomirzayev M. K. Practical lessons in technology: Characteristics of organization and conduct //Asian Journal of Multidimensional Research. – 2021. – Т. 10. – №. 4. – С. 991-1001.
36. Shomirzayev M. K., Yuldashov K. K. The Educational Importance of Teaching Knowledge to Secondary School Students //CURRENT RESEARCH JOURNAL OF PEDAGOGICS. – 2021. – Т. 2. – №. 08. – С. 132-142.
37. Shomirzayev M. K. Ethnic peculiarities of artistic embroidery of the peoples of the Ferghana valley //European Journal of Research and Reflection in Educational Sciences.-7 (12).-P. – 2019. – Т. 967.
38. Shomirzayev M. K. Combined In Technology Courses Use Of Technologies //The American Journal of Social Science and Education Innovations. – 2021. – Т. 3. – №. 05. – С. 389-396.
39. Shomirzayev M. X., Karimov I. I. Innovative pedagogical technologies in teaching technology //Т.:“Universitet. – 2020. – Т. 125.
40. Shomirzayev M. X. Innovative processes in Uzbek national handicrafts //Т.:“New edition. – 2019.
41. Шомирзаев М. Х. Мактаб технология таълимида миллий хунармандчиликнинг спектрал-вариатив компонентларини фанлараро такомиллаштириш. Педагогика фанлари бўйича докторлик (ДSc) дисс //Т.: Tafakkur. – 2020. – Т. 164.
42. Shomirzayev S. National followers in the students use of educational technologies instruction of interests //International Journal of Linguistics, Literature and Culture. – 2021. – Т. 7. – №. 3. – С. 152-157.
43. Shomirzayev M. X. Ways to increase the effectiveness of teaching technology //Methodological manual. – 2019.
44. Shomirzaev M. X. Innovative pedagogical technologies in teaching technology. Textbook //Т.: Tafakkur. – 2021.
45. Texnologiya fanini o'qitishda, Shomirzayev MX. "innovatsion pedagogik texnologiyalar. Darslik." Т.:“TerDU nashr-matbaa markazi 226 (2020).
46. Shomirzayev M. K., Yuldashov K. K. Use of Some Historical Materials in Technology Education Classes //International Journal of Multicultural and Multireligious Understanding. – 2021. – Т. 8. – №. 11. – С. 184-195.
47. Shomirzayev M. K., Yuldashov K. K. Student-Folk Craft for Young People Teaching History as a Factor of National Education //International Journal of Multicultural and Multireligious Understanding. – 2021. – Т. 8. – №. 8. – С. 475-486.
48. Texnologiya fanini o'qitishning S. M. X. samaradorligini oshirish yo 'llari //Т.:“Gold print nashr. – 2019. – Т. 42.
49. Shomirzayev M. K. Pedagogical technologies-as a factor to increase student knowledge in school technology classes //current research journal of pedagogics. – 2021. – Т. 2. – №. 05. – С. 84-96.
50. Shomirzayev M. K., Pakhratdinova R. O. Characteristics of Organization and Conduct of Practical Courses on National Crafts in Technology //Asian Journal of Research in Social Sciences and Humanities. – 2021. – Т. 11. – №. 9. – С. 182-192.
51. Shomirzaev M. X. The use of modern teaching methods in teaching school students folk crafts //The teacher is also constantly informed.-Nukus. – 2020. – С. 42-46.

52. Shomirzaev M. X. Problem-based education in the lessons of "Technology" //Modern education. Tashkent. – 2020. – №. 6. – С. 91.
53. Шомирзаев М., Авазов Ж. OLIY TA'LIM TIZIMIDA BO 'LAJAK MUHANDISLARNING TAYYORLASHNING VA'ZI JIHATLARI //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz). – 2021. – Т. 4. – №. 4.
54. Шомирзаев М. X. ТЕХНОЛОГИЯ ФАНИНИ ЎҚИТИШДА ИННОВАЦИОН ПЕДАГОГИК ТЕХНОЛОГИЯЛАРИДАН ФОЙДАЛАНИШ МЕТОДИКАСИ: DOI: <https://doi.org/10.53885/edinres.2021.44.86.020> Шомирзаев Махматмурод Хурамович Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 321-330.
55. Shomirzaev M. X. Theory and practice of interdisciplinary improvement of spectral-variable components of national crafts in school technology education. Monograph //Т.: Tafakkur. – 2020.
56. Шомирзаев М. X. Ўқувчиларда халқ хунармандчилиги касбларига қизиқишни фанлараро шакллантириш омиллари //Мактаб ва ҳаёт. – 2019. – С. 23-24.
57. Kh S. M. Young People from "Technology" to Profession Training as a Factor of Competitive Personnel Training //International Journal of Multicultural and Multireligious Understanding. – 2021. – Т. 8. – №. 4. – С. 580-591.
58. Shomirzaev M. X. Improving the orientation of students to the professions of folk crafts in technology education //Science and society (Science is also society).-Nukus. – 2020. – С. 98-100.
59. Shomirzaev M. X. Psychological and pedagogical potential of folk crafts in school technology education //Tafakkur ziyosi.-Jizzax. – 2020. – №. 4. – С. 154-155.
60. Шомирзаев М. X. Таълим технологияларидан фойдаланиш муаммолари //Замонавий таълим. – 2019. – Т. 9. – №. 82. – С. 25-31.
61. Шомирзаев М. X. Ўқувчиларда халқ миллий хунармандчилиги касбларига қизиқишни шакллантиришда таълим технологияларидан фойдаланиш //Қорақалпоқ давлат университетининг хабарномаси.-Нукус. – 2019. – Т. 4. – №. 45. – С. 98-102.
62. Shomirzaev M. X. The use of educational technologies in the formation of students' interest in the professions of national crafts //Karakalpak State University Bulletin.-Nukus. – 2019. – Т. 4. – №. 45. – С. 98-102.
63. Shomirzaev M. X. Factors of interdisciplinary formation of students' interest in folk crafts //School and life. – С. 23-24.
64. Shomirzayev M. K., Yuldashov K. K. Carpenter, jewelery, knifecourse development of application methods //Asian Journal of Multidimensional Research. – 2021. – Т. 10. – №. 8. – С. 302-308.
65. Shomirzaev M. X. Interethnic peculiarities of embroidery //Sources of knowledge. Urgench. – 2020. – №. 4. – С. 189-192.
66. Шомирзаев М. X. Ўзбекистонда миллий хунармандчилик ривожла-нишининг тарихий-ижтимоий асослари/Таълим-тарбия контекстида фанлараро синхрон ва асинхрон боғланишлар. Илмий-услубий мақолалар тўплами //Т.: Noshirlik yog'dusi. – 2019. – С. 52-57.

67. Шомирзаев М. Х. Технология обучения народному-прикладному искусству, трудовое и эстетическое воспитание учащихся V-VII классов общеобразовательных школ. Монография //Т.: Yangi nashr. – 2019.
68. Шомирзаев М. Х. Технология фанини ўқитиш жараёнида интерфаол методлардан халқ хунармандчилигида фойдаланиш имкониятлари/Таълим-тарбия контекстида фанлараро синхрон ва асинхрон боғланишлар. Илмий-услубий мақолалар тўплами //Т.: Noshirlik yog'dusi. – 2019. – С. 130-136.
69. Shomirzaev M. X. Vocational education: national embroidery //Pedagogy. – Т. 2019. – С. 122-129.
70. Shomirzaev M. X. Problems of using educational technologies //Modern education. – С. 25-3.
71. Шомирзаев М. Х. Технология таълимида ўқувчиларни халқ хунар-мандчилиги касбларига йўналтиришни такомиллаштириш //Fan va jamiyet (Ilm ham jamiyet).– Нукус. – 2020. – С. 98-100.
72. Shomirzaev M. X. Interdisciplinary improvement of spectral-variable components of national crafts in school technology education. Monograph //Т.“Tafakkur. – 2020.
73. Shomirzayev M. X. Ways to increase the effectiveness of teaching technology //Methodological manual. – 2019.
74. Shomirzayev M. X. Genesis of formation and development technology of Uzbek national handicrafts //Т.:“Yangi Nashr. – 2019.
75. Shomirzayev M. X. Spectral-variable components of Uzbek national handicrafts //Т.:“Yangi Nashr. – 2019.
76. Шомирзаев М. Х. Ўзбек миллий хунармандчилигида мато тайёрлаш-нинг ўзига хос жиҳатлари //Тафаккур зиёси.–Жиззах. – 2019. – С. 69-71.
77. Шомирзаев М. Х. Бойсун қуроқчилик санътини ўргатишда тарихий анъаналарнинг ўрни //Бойсун-моддий ва номоддий маданияти бешиги” мавзусидаги Халқаро илмий-амалий конференцияси.–Т.: Yangi nashr. – 2018. – С. 62-67.
78. Shomirzaev M. X. Genesis of formation and development technology of Uzbek national handicrafts. Educational-methodical manual //Т.: New edition. – 2016.
79. Rakhmatillayev A. et al. Dynamics of the effectiveness of interactive methods //Т.:“Avu press-consultant. – 2015. – С. 60.
80. Abdiev K. M. et al. COMPARATIVE EVALUATION OF NEW TREATMENTS FOR IMMUNE THROMBOCYTOPENIA //NVEO-NATURAL VOLATILES & ESSENTIAL OILS Journal| NVEO. – 2021. – С. 10160-10166.
81. Шомирзаев М. Х., Хайруллаев И. Н. МАКТАБ ЎҚУВЧИЛАРИНИ ХАЛҚ ХУНАРМАНДЧИЛИГИГА ЎРГАТИШДА ИННОВАЦИОН ТАЪЛИМ МЕТОДЛАРИДАН ФОЙДАЛАНИШ: DOI: <https://doi.org/10.53885/edinres.2021.50.31.014> Шомирзаев Махматмурод Хурамович Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc). Хайруллаев Исматулло Нуруллаевич Термиз давлат университети доценти //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 367-371.
82. Шомирзаев М. Х. “ТЕХНОЛОГИЯ” ФАНИ ДАРСЛАРИДА МУАММОЛИ ТАЪЛИМ //Современное образование (Узбекистан). – 2020. – №. 6 (91). – С. 28-36.
83. Шомирзаев М. Х. Зардўзлик хунарини ўқувчиларга ўргатишда миллий анъаналарнинг аҳамияти. – 2019.



84. Shomirzaev M. X. Opportunities for the integration of sciences in the formation of students' interest in the professions of national crafts //Science and society (Science and society).-Nukus. – 2019. – №. 3. – С. 106-108.
85. Шомирзаев М. Х. Ўзбек каштадўзликнинг шаклланиш генезиси ва ривожланиш технологияси //Муғаллим ҳем узлуксиз билимлендириў.-Нукус. – 2019. – С. 73-82.
86. Шомирзаев М. Х. Анъанавий каштадўзликда маҳаллий жиҳатлар //Илм сарчашмалари.-Урганч. – 2019. – С. 140-144.
87. Шомирзаев М. Х. Технология фани жараёнида ўқувчиларни тадбиркорлик ва кичик бизнес фаолиятига тайёрлаш/Таълим-тарбия контекстида фанлараро синхрон ва асинхрон боғланишлар. Илмий-услубий мақолалар тўплами //Т.: Noshirlik yog'dusi. – 2019. – С. 176-178.
88. Шомирзаев М. Х. Касбий таълим: миллий каштадўзлик //Педагогика. – 2019. – С. 122-129.
89. Шомирзаев М. Х. Ўзбек миллий хунармандчилигида инновацион жараёнлар. Ўқув-услубий қўлланма //Т.: Yangi nashr. – 2017. – Т. 48.
90. Исмаилов Х. Х. и др. Матер. конф." Фотоэлектрические явления в полупроводниках-2004. – 2004.
91. Шомирзаев М. Х. Ўзбек миллий хунармандчилигининг спектирал-вариатив компонентлари. Услубий қўлланма //Т.: "Янги нашр. – 2019. – Т. 48.
92. Шомирзаев М. Х. Технология фанини ўқитишнинг самарадорлигини ошириш йўллари. Ўқув-методик қўлланма //Т.: Gold print nashr. – 2019. – Т. 56.
93. Шомирзаев М. Х. Миллий хунармандчилик одоби. – 2018.
94. Кадыров Б. Э. ЎҚУВЧИЛАРНИНГ ХУНАРМАНДЧИЛИККА ОИД ТАЯНЧ КОМПЕТЕНЦИЯЛАРИНИ ЭЛЕКТРОН АХБОРОТ ТАЪЛИМ МУҲИТИДА РИВОЖЛАНТИРИШНИНГ ДИДАКТИК МОДЕЛИ: DOI: <https://doi.org/10.53885/edinres.2021.37.29.058> Қодиров Бахтиёр Эшмурзаевич Термиз давлат университети, педагогика фанлари бўйича фалсафа доктори (PhD) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 128-132.
95. Shomirzaev M. K., Astanakulov K. D., Babaev K. M. Research into the perforated surface of the double staged grinder-crusher //IOP Conference Series: Earth and Environmental Science. – IOP Publishing, 2022. – Т. 1076. – №. 1. – С. 012035.
96. Astanakulov K. D., Kurbonov F. K., Shomirzaev M. K. Development of fish feed distributor device //IOP Conference Series: Earth and Environmental Science. – IOP Publishing, 2022. – Т. 1076. – №. 1. – С. 012032.
97. Шомирзаев М. Х. ТЕХНОЛОГИЯ ТАЪЛИМИДА ЎҚИТИШ ШАКЛЛАРИ ВА МЕТОДЛАРИ: DOI: <https://doi.org/10.53885/edinres.2021.11.39.016> Шомирзаев Махматмурод Хурамович Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 353-358.
98. Shomirzayev M. ЎҚУВЧИЛАР ТАЪЛИМ ВА ТАРБИЯСИДА КАШТАЧИЛИКНИНГ ЎРНИ //Физико-технологического образование. – 2022. – №. 3.

99. Shomirzayev M. ЎҚИТИШДА ИННОВАЦИОН ПЕДАГОГИК ТЕХНОЛОГИЯЛАРИДАН ФЙДАЛАНИШ //Физико-технологического образование. – 2022. – №. 3.
100. Xuramovich S. M. Individually Directed some Features of Technology //Eurasian Journal of Engineering and Technology. – 2022. – Т. 4. – С. 59-65.
101. Xuramovich S. M. IN TEACHING TECHNOLOGY TEACHER'S CREATIVE APPROACH //World Bulletin of Social Sciences. – 2022. – Т. 8. – С. 32-37.
102. Kh S. M. National Crafts And Socio-Economic Activity //The American Journal of Applied sciences. – 2021. – Т. 3. – №. 04. – С. 32-46.
103. Шомирзаев М. Х. ТЕХНОЛОГИЯ ТАЪЛИМДА ЎҚУВЧИЛАРНИ ХАЛҚ ХУНАРМАНДЧИЛИГИ КАСБЛАРИГА ЙЎНАЛТИРИШ: DOI: <https://doi.org/10.53885/edinres.2021.81.45.017> Шомирзаев Махматмурод Хурамович, Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 346-352.
104. Шомирзаев М. Х. МАКТАБ ТЕХНОЛОГИЯ ТАЪЛИМИДА ЎҚУВЧИЛАРНИ МИЛЛИЙ ХУНАРМАНДЧИЛИКНИНГ СПЕКТРАЛ-ВАРИАТИВ КОМПОНЕНТЛАРИ БИЛАН ФАНЛАРАРО ТАНИШТИРИШДА ТАРИХИЙЛИК ПРИНЦИПИ: DOI: <https://doi.org/10.53885/edinres.2021.88.48.019> Шомирзаев Махматмурод Хурамович, Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 331-341.
105. Шомирзаев М. Х., Мухамадиева Н. К. МИЛЛИЙ ТАРБИЯДА КАШТАЧИЛИКНИНГ ЎРНИ: DOI: <https://doi.org/10.53885/edinres.2021.78.80.018> Шомирзаев Махматмурод Хурамович, Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc). Мухамадиева Наргиза Қудратовна, Термиз давлат университети Таълим ва тарбия назарияси ва назарияси (Технологик таълим) мутахассислиги магистранти //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 342-345.
106. Шомирзаев М. Х. ТЕХНОЛОГИЯ ФАНИДАН АМАЛИЙ ДАРСЛАРНИ ТАШКИЛ ЭТИШ ВА ЎТКАЗИШ МЕТОДИКАСИ: DOI: <https://doi.org/10.53885/edinres.2021.26.95.021> Шомирзаев Махматмурод Хурамович, Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 312-320.
107. Шомирзаев М. Х. TECHNOLOGIYA TA'LIMIDA TARBIYA JARAYONINI TECHNOLOGIYALASHTIRISH: DOI: <https://doi.org/10.53885/edinres.2021.67.13.031> Shomirzaev Maxmatmurod Xuramovich, Termiz davlat universiteti texnologik ta'lim kafedراسи dotsenti, pedagogika fanlari doktori (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 263-268.
108. Шомирзаев М. Х. ТЕХНОЛОГИЯ ФАНИ ДАРСЛАРИНИ ТАШКИЛ ЭТИШНИ ТАКОМИЛЛАШТИРИШ: DOI: <https://doi.org/10.53885/edinres.2021.16.53.015> Шомирзаев Махматмурод Хурамович, Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и

инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 359-366.

109. Шомирзаев М. Х. TEXNOLOGIYA TA'LIMIDA TA'LIMNING SHAXSGA YO 'NALTIRILGAN TEXNOLOGIYASI: DOI: <https://doi.org/10.53885/edinres.2021.49.15.032> Shomirzaev Maxmatmurod Xuramovich, Termiz davlat universiteti texnologik ta'lim kafedراسи dotsenti, pedagogika fanlari doktori (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 255-262.

110. Шомирзаев М. Х. ТЕХНОЛОГИЯ ТАЪЛИМИДА ЎҚИТИШ ШАКЛЛАРИ ВА МЕТОДЛАРИ: DOI: <https://doi.org/10.53885/edinres.2021.11.39.016> Шомирзаев Махматмурод Хурамович Термиз давлат университети технологик таълим кафедраси доценти, педагогика фанлари доктори (DSc) //Образование и инновационные исследования международный научно-методический журнал. – 2021. – №. 1-Махсус сон. – С. 353-358.

111. Shomirzayev M. K. Developing Educational Technologies In School Technology Education //Next Scientists Conferences. – 2022. – С. 14-23.

112. Шомирзаев М. PEDAGOGIK MANORAT: ЎЗБЕКИСТОН RESPUBLIKASI ИЖТИМОЙ-ИҚТИСОДИЙ СОҲАСИ РИВОЖЛАНИШИДА МИЛЛИЙ ҲУНАРМАНДИЛИКНИНГ АҲАМИЯТИ //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz). – 2020. – Т. 2. – №. 2.

113. Shomirzaev M. K. Factors in the development of national art. – 2020.

114. Шомирзаев М. Х. Таълим технологияларини қўллаш муаммолари //Современное образование (Узбекистан). – 2019. – №. 9 (82). – С. 25-31.

115. Якубов С. Х., Шомирзаев М. Х. Инновационные подходы к совершенствованию уроков технологии в средних общеобразовательных школах Республики Узбекистан //МИР ОБРАЗОВАНИЯ—ОБРАЗОВАНИЕ В МИРЕ. – 2019. – С. 110.

116. Sidikov I. K., Shomirzaev B. U. Two-level fuzzy adaptive regulation of dynamic objects //Management. – 2018. – Т. 2018. – №. 4. – С. 7.

117. Kh S. M. Innovation Pedagogical Technologies Used in School Technology Education.