

**TECHNOLOGY OF USING THE “STEP BY STEP” METHOD WHEN TEACHING THE TOPIC “ZHEGALKIN MULTIPLIES.”**

**Umarova Umida Umarovna**  
*Asian International University*

**Abstract:** *In this article, the role of pedagogical technologies in the educational process, including the widespread use of innovative pedagogical and information technologies, the growing interest in improving the effectiveness of education. Classes based on these technologies allow young people to express their views on important life achievements and problems, to think, to justify their views. With this in mind, the idea of organizing the teaching process using the method "Step by step", which is one of the methods that serve to study the topic "Jegalkin increases".*

**Keywords:** *Pedagogical technologies, “Step-by-step” method, Jegalkin multiplication, triangle method, Pascal method, Cardo card, coefficient method.*

Today, interest in improving the effectiveness of education through the widespread use of innovative pedagogical and information technologies in the educational process is growing every day. Trainings conducted on the basis of these technologies allow young people to express their attitude to important life achievements and problems, think, and justify their point of view. Innovative technologies are innovations and changes in the pedagogical process and activities of teachers and students; their implementation uses active or interactive methods. One such method is the “step by step” method. This activity teaches students to be able to think and remember, remember acquired knowledge, summarize collected ideas and express them in writing, in pictures, drawings, dividing students into individual and small groups in accordance with the topic being studied. has passed or must pass. This method is written and presented to students individually or in groups. The purpose of this method is to teach students to think freely, independently and logically, to work in a team, to search, collect ideas and form theoretical and practical understanding from them, to be able to influence the team with their opinion and approve it, and also to apply the acquired knowledge when explaining the basic concepts of the subject. This method can be used in seminars, practical and laboratory classes. To do this, the following tools are used during training: prepare sheets of A-3, A-4 format (corresponding to the number of assigned subtasks) and use handouts with the name of the tasks written on the left, and felt-tip pens., etc.

#### Technology application

- The teacher divides students into small groups of 4-5 people depending on the number of topics (the number of groups is preferably 4 or 5).
- Students are introduced to the purpose of learning and how to implement it.

- Sheets with the name of the problem are distributed to each group on the left side of the sheet.

- The teacher introduces the group members to the tasks written on the handout, explains that based on these tasks, team members should write down general thoughts together with a felt-tip pen, and sets a schedule for completion.

- Members of the small group together express their thoughts on the task indicated in the handout in the form of a written picture or drawing. In it, group members will have to provide as much information as possible.

- After completing the handouts, one of the group members will give a presentation. In this case, the material prepared by the groups should be placed on the classroom board or chalkboard in a logical sequence (in the form of a ladder) and presented by a representative of the small group.

- The teacher and students in a group listen to the presentation and discuss the activity based on questions and answers, evaluate the materials prepared by the groups, and complete the exercise.

Let's consider the technology of using this method using the example of the topic "Dzhegalkin Multiplication". Let's say there are 30 students in a class and we divide them into six small groups of 5 to give 6 assignments.

Tasks:

Group 1. Reduction to the Dzhegalkin polynomial by Pascal's method;

Group 2. Reduction of the Zhegalkin polynomial using the Cardo card method;

Group 3. Zhegalkin polynomial by the triangle method;

Group 4. Method of undetermined coefficients;

Group 5. Dzhegalkin multiplication using equivalent substitutions;

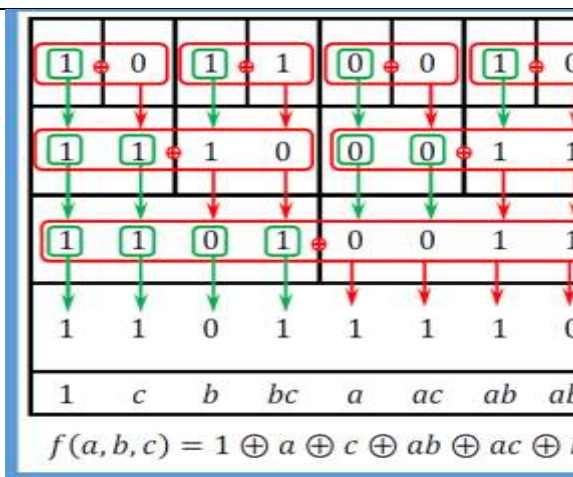
Group 6. Reducing unknown coefficients to the Zhegalkin polynomial using methods for finding them.

Members of the small group together express their thoughts on the task specified in the handout in the form of a written picture or drawing. To determine the level of mastery of the assigned tasks, all groups need to work on one example, using only the methods they have learned.

Handouts are filled out, one of the group members makes a presentation. During the presentation, students from other groups also learn new techniques. Below are examples of presentations:

Group 1.

Group 2.



Group 3.

Group 4.

$x_1 x_2 x_3$	$f$
000	0
001	0
010	0
011	1
100	0
101	1
110	1
111	1

$xyz$	$f$
000	0
001	0
010	0
011	1
100	0
101	1
110	1
111	1

$P = 1 \oplus y \oplus xy \oplus xz \oplus xyz$

As a conclusion, it should be noted that through the use of a step-by-step method during the lesson, students' interpersonal communication skills are formed; development of written and oral speech; activate students during the lesson; teaches students to increase motivation (interest) and apply theoretical knowledge in practice.

### REFERENCES

1. Умарова У.У. “Жегалкин кўпҳади” мавзусини ўқитишда “зинама-зина” методини қўллаш технологияси // Scientific progress, 2: 6 (2021), p. 1639-1644.
2. Умарова У.У. “Чинлик жадвали ёрдамида формулани топишда муаммоли ўқитиш технологияси” // Scientific progress, 2: 6 (2021), p. 832-838.
3. Umarova U.U. “The use of pedagogical technologies in distance learning moodle” // Problems of pedagogy 51 (6), 31-34
4. Умарова У.У. “Формулаларнинг эквивалентлиги. Дуаллик принципи” мавзусини ўқитишда “чархпалак” технологияси // Scientific progress 2 (6), 839-846.
5. Умарова У.У. «Пост теоремаси ва унинг натижалари» мавзуси бўйича амалий машғулотда “блиц-сўров” ва “фсму” технологияси // Scientific progress 2 (6), 861-866.

6. Umarova U.U. “Cluster” and “PAZL” methods in teaching the topic “Collection Theory” // Scientific progress, 2: 6 (2021), p. 898-904.
7. Умарова У.У. “Мулоҳазалар алгебраси асосий тенг кучли формулалари” мавзусини ўқитишда “Ақлий хужум” ва “Case Study” методлари // Scientific progress, 2:6 (2021), p. 818-824.
8. Умарова У.У. Мулоҳазалар алгебраси бўлимини такрорлашда график органайзер методлари // Scientific progress, 2:6 (2021), p. 825-831
9. Шарипова Р.Т., Умарова У.У., Шарипова М.Ш. Использование методов «мозговой штурм» и «case study» при изучении темы «условная вероятность, независимость событий» // Scientific progress. (2021) 2:1, с. 982-988.
10. U.U.Umarova Application of TRIZ technology to the topic "Normal forms for formulas of the algebra of statements" // Science, technology and education. 73: 9 (2020), pp. 32-35.
11. Umarova U.U. The method of "Working in small groups" in teaching the topic of logical operations on feedback // Scientific progress, 2: 6 (2021), p. 803-809.
12. Umarova U.U. Problem-based learning technology in finding a formula using a truth table // Scientific progress, 2: 6 (2021), p. 832-838.
13. Umarova U.U. Graphic organizer methods in the repetition of the section of feedback algebra // Scientific progress, 2: 6 (2021), p. 825-831.
14. Umarova U.U. “Brainstorming” and “Sase Study” methods in teaching the topic “Basic equally powerful formulas of reasoning algebra” // Scientific progress, 2: 6 (2021), p. 818-824.
15. Умарова У.У. “Функциялар системасининг тўлиқлиги ва ёпиқлиги” мавзусини ўқитишда «Қандай?» иерархик диаграммаси интерфаол методи // Scientific progress, 2:6 (2021), p. 855-860
16. Умарова У.У. “Мулоҳазалар хисоби” мавзусини ўқитишда интерфаол методлар // Scientific progress, 2:6 (2021), p. 867-875
17. Умарова У.У. «Пост теоремаси ва унинг натижалари» мавзуси бўйича амалий машғулотда “Блиц-сўров” ва “ФСМУ” технологияси // Scientific progress, 2:6 (2021), p. 861-866
18. Umarova U.U. “Equivalence of formulas. The principle of duality "in the teaching of" Charkhpalak "technology // Scientific progress, 2: 6 (2021), p. 839-846.
19. Umarova U.U., Ikromova S.U. [Umumiy o'rta ta'lim maktablarida masofaviy o'qitish](#) // Science and Education 2 (9), 374-382.
20. Умарова У.У. Отамуродов Ф.Р. Алгоритм работы с приёмом “Корзина идей” и применение к теме “Полином Жегалкина” // Наука, техника и образование. 77:2 (2021). С. 42-45.
21. Umarova U.U. Interactive methods in teaching the topic of “Accounting for feedback” // Scientific progress, 2: 6 (2021), p. 867-875.

22. Umarova U.U. “Relationships. Binary Relationships” and “Dominoes” methods for lectures and practical classes // Scientific progress, 2: 6 (2021), p. 982- 988.
23. Умарова У.У. “Келтириб чиқариш қоидаси” мавзусини ўқитишда график органайзер методлар // Scientific progress, 2:6 (2021), p. 876-882
24. Umarova U.U. “Blitz-survey” and “FSMU” technology in a practical lesson on “Post theorem and its results” // Scientific progress, 2: 6 (2021), p. 861-866.
25. Umarova U.U. Boomerang technology in teaching the topic “Primitive recursive functions” // Scientific progress, 2: 6 (2021), p. 890-897
26. Umarova U.U. "How?" hierarchical diagram interactive method // Scientific progress, 2: 6 (2021), p. 855-860
27. Umarova U.U. Technology of using the "step-by-step" method in teaching the topic "Jegalkin increases" // Scientific progress, 2: 6 (2021), p. 1639-1644.
28. Умарова У.У. “Тўпламлар назарияси” мавзусини ўқитишда “Кластер” ва “ПАЗЛ” методлари // Scientific progress, 2:6 (2021), p. 898-904
29. Умарова У.У. “Примитив рекурсив функциялар” мавзусини ўқитишда “Бумеранг” технологияси // Scientific progress, 2:6 (2021), p. 890-897
30. УУ Умарова, ФР Отамуродов. [«Бул функцияларининг ўзгарувчилари бўйича ёйилмаси» мавзусини ўқитишда «Балиқ скелети» методи](#) // Science and Education 2 (10), 623-631
31. Умарова У.У. Применение триз технологии к теме «Нормальные формы для формул алгебры высказываний» // Наука, техника и образование. 73:9 (2020), С. 32-35.
32. Умарова У.У. “Муносабатлар. Бинар муносабатлар” мавзуси бўйича маъруза ва амалий машғулотлари учун “Ажурли арра” ва “Домино” методлар // Scientific progress, 2:6 (2021), p. 982-988.
33. Умарова У.У. Мулоҳазалар устида мантикий амаллар мавзусини ўқитишда «Кичик гуруҳларда ишлаш» методи // Scientific progress, 2:6 (2021), p. 803-809
34. Умарова У.У. “Формулалар ва уларнинг нормал шакллари” мавзусини ўқитишда ўйинли методлар (pp. 810-817)
35. УУ Umarova, SU Ikromova. [Umumiy o‘rta ta’lim maktablarida masofaviy o‘qitish](#) // Science and Education 2 (9), 374-382