

Graphic Organizers as a Tool for Ensuring the Effectiveness of Innovative Educational Technologies

Nabijanov Yusufjon ugli Inomiddin

Namangan State University "In primary education teacher of the department "Methodology of teaching social and humanitarian sciences", Uzbekistan, Namangan city, Yangiabad street 66

Abstract: As a result of the theoretical analysis of the fact that the graphic organizer used in education is a "visual educational tool" through examples of pedagogical, psychological and philosophical literature, clarifying the concept of "graphic organizer" and clarifying that it is an educational tool, As a result of students' creation of graphic organizer "models" such as "Hierarchy diagram", "Mind map", "FSMU", "Multiple meaning", "Fish skeleton" through the software "MindOnMap" , the development of skills and competences, consideration of the advantages of use from the point of view of the effectiveness of language education.

Keywords: innovative educational technologies, concept of "graphic organizer", innovative tool, concept, graphic organizer "Concept maps" , "Hierarchy diagram", "Mind maps" Maps"), FSMU, Multiple meaning map, Fish skeleton graphic organizers, MindOnMap software, modeling.

In his address to the Oliy Majlis of the Republic of Uzbekistan and the people of the Republic of Uzbekistan on December 20, 2022, the President expressed his opinion about the education system and said that improving the quality of education is the only correct way of development of New Uzbekistan [1] specifically mentioned that. Also, raising the status, prestige, responsibility and professional qualification of pedagogues-teachers in Uzbekistan was brought to the level of state policy. The times require the use of innovative educational technologies, new forms and methods of education, the development of teaching-methodical complexes and textbooks at the level of modern requirements. As mentioned above, the use of innovative educational technologies is gaining relevance today. Undoubtedly, graphic organizers are the first aid in such places.

Sh.S.Shoyimova, MKKhoshimova, Sh.R.Mirzayeva and MMQo'ziboyeva's textbooks entitled "Educational technologies" [2: 32] page 32 lists the main directions of educational technologies, among them interactive the existence of methods and technologies, as well as the use of innovative forms, methods and tools in the teaching process on page 40 of this textbook. Although graphic organizers are included in this category as an "innovative tool" together with interactive whiteboards, presentations, electronic textbooks, and virtual trainers, it is said that it is an educational tool, but on page 47 of the textbook, graphic organizers are "innovative teaching methods" we can see listed as . This raises doubts about whether graphic organizers are a method, a method or an educational tool. Also, in this textbook, methodical and methodological recommendations on the use of graphic organizers such as "T-schema", "Lilac flower", "Fish skeleton", "Why" are given. In the naming of these graphic organizers, we can see

that "T-chart" is named "method", "Lily flower", "Fish skeleton" is named "technology", and "Why" graphic organizer is named "schema". In addition, "Venn Diagram", "How?" hierarchical diagram, "SWOT - analysis" chart, "Conceptual chart" (presented on page 247 of this textbook, mentioned under the name "method". [2: 247]), "Concept Analysis" scheme, "Mind map" ("Intellect-map", "Mental map", "Perception map", "Thought map" [2: 250]), these organizers are not referred to as "graphic organizers" anywhere in the textbook.

It is emphasized that "today there are several methods of developing the competence of working with text in the teaching of mathematics" [3: 914-919], in the first place, graphic organizers considering that it is possible to enter, we can see that it is interpreted as a "graphical method". This raises doubts about the fact that graphic organizers are a special educational tool in the implementation of educational activities in the imaginations of not only students, but also teachers, although there are many definitions of graphic organizers. That they cannot come up with a unanimous conclusion, as a result, this creates confusion and logical nonsense. So, in order to scientifically base the philosophical, pedagogical and psychological works on the concept of "graphic organizer", to create its theoretical-methodological basis, to make a scientific-pedagogical analysis as a tool for increasing the effectiveness of language education, we must provide a single definition of the graphic organizer.

From the analysis of existing literature and scientific research works, it can be seen that the technology issues of using graphic organizers in mother tongue education have not been specially researched methodologically. Although there is an opportunity to develop linguistic knowledge during exercises, tasks, analyze texts, read and understand them quickly and easily in upper class native language classes with the help of graphic organizers, they are psychologically and methodologically in the educational process. The topic of the article becomes relevant due to the fact that there are not enough methodical recommendations on the issues of use.

The introduction and formation of the concept of "graphic organizer" is associated with the name of the American psychologist David Ausubel [4]. Many sources confirm that this interactive tool is associated with the name of this person [5]. This term, which has been used since the 1980s [6], was previously called "advance organizer". Later, a tree diagram called "structured overview" was developed by Richard F. Barron [7]. Polyxeni Manoli, Maria Papadopoulou, in their work also give ideas about the origin of graphic organizers, they also emphasize in their work the division of graphic organizers into several types, as well as the early forms of graphic organizers Richard Barron. It is mentioned that it was developed by [8].

Many foreign scientists and researchers, such as David Ausubel [9], Polyxeni Manoli, Maria Papadopoulou [10], Sandra Mercouri [11], have written about the concept of "graphic organizer", its theoretical and historical foundations, and the effectiveness of its use. Scientific-research works have been carried out.

On page 320 of the two-volume *Entsiklopedii obrazovatelnykh tekhnologiy* (Encyclopedia of Educational Technology) book by Selevko German Konstantinovich, one of the researchers of the Commonwealth of Independent States, devoted to the classification of technologies developed for the purpose of reforming the traditional education system. He mentioned that it consists of diagrams, graphs, maps and drawings as a unique presentation of the information obtained in the learning process using visual means [12: 320]. But the concept of "graphic organizer" is not defined.

On page 172 of NVBordovskoy's textbook, *Sovremennye obrazovatelnye tekhnologii*, i.e., "Modern Educational Technologies," the concepts and focus can be applied in the problem-solving process. Although he gave brief information about the content of graphic organizers using diagrams, schemes, pictures, tables, graphs, histograms, he did not refer to any graphic organizer, giving any information on its use. It did not pass, did not cover methodically [13].

The brochure published by Renata Kirilina, the founder of the platform called "Uchim v shkole", i.e. "We teach at school", opened to help parents of schoolchildren, talks about effective educational techniques [14], Graphic organizers such as "Fish Skeleton", "Spider Map", "Mind Map" are described as "techniques".

it is related to remembering them as a result of the increase in the volume of information in students' learning. expressed his views on the use of graphic organizers such as "Mind Map", "Cluster", "Fish Skeleton", "Conceptual Table" in order to overcome difficulties that arise [16] .

GAKondrashova's work emphasizes that the graphic organizer is a "visual communication tool" and emphasizes that it improves the ability to remember information, facilitates reading comprehension, and develops critical thinking skills [17].

VKh Mansurova, a scientist from Kazakhstan, highlighted the possibilities of graphic organizers in her work [18], and he was able to present his critical views on the use of the "Mind Map" graphic organizer in order to organize, analyze, and thereby ensure effective teaching [19].

In addition, in the works of IAOLkova, NASitnikova, we get the necessary information on the use of graphic organizers in improving the cognitive skills of high school students [20].

Regarding this problem, one of the foreign scientists David Ausubel [9] (who introduced the concept of "graphic organizer" to science for the first time), Sorenson [21], Stamper [22], Tracy Harding-Striker [23], Kang[24] called "graphic organizer" ” concept explained; Horton, Lovitt, Bergerud[24] studied the formal structure of graphic organizers. In the work of Chin-Wen Chien[25], graphic organizers are a means of directing thinking by arranging information and concepts; In the work of Hoang Tang Duk[26] that it is an "effective text analysis tool"; that Christian Efrain Flores is a "visual medium" in the work of Pasaca[24]; Bromley[26: 4] researched that it is a "tool for creative and critical thinking". In the work of I. İlter [27: 42-64] , the possibility of using graphic organizers in social sciences is highlighted. Joseph Novak [28] first introduced "concept maps" to science, Nancy Gallenstein [29] concept mapping; In the work of Kuzko and Jannets [30], the development of reading and writing skills of students with the help of "concept maps" is listed as a special branch of graphic organizers; The work of Maury Calervo Ahlberg [31] and George K. Conley [32] explored the use of "concept maps".

Using the definitions given by foreign scientists to graphic organizers, we bring to your attention the following table (see Table 1.).

Sorenson	Graphic organizers offer an optional way to represent knowledge and concepts” [21: 4]
Stamper	A graphic organizer is a visual and graphic presentation of relationships between ideas and concepts” [22: 5]
Tracy Harding-Striker	Graphic organizers are formats used to visually represent information by showing relationships between images and ideas and helping students think critically” [23: 5]
Horton, Lovitt, Bergerud	Based on graphic organizers, the visual and verbal organizational structure of the diagram is a theoretical framework that combines information into a meaningful whole" [24: 85]
Chin-Wen Chien	Graphic organizers help students organize and structure information and concepts, and develop thinking about the relationships between concepts” [25: 49]
The author	Graphic organizers are one of the educational tools that present the necessary information in a visual form.

Table 1. A comparative analysis of the definitions given by researchers to the graphic organizer

Among our researchers, R. Mavlonova, N. Vokhidova, N. Rakhmonkulova [33] clarified the concept of interactive education, but the concept of "graphic organizer" was not scientifically

explained. In the works of R. Ishmuhamedov, M. Mirsoliyeva [34], it is emphasized that the graphic organizer is an effective form of training. OUAvlaev, SNJorayeva and SRMirzayeva's scientific research[35] showed the main function of the graphic organizer. SXMuhamedova, MDAbdullayeva, Sh.Sh. Yuldasheva, YBEshmatovas” [36], ZDRasulova, Sh.H. Quliyeva, ARZhorayev” [37], O'. Askarova, M. Nishonov, Z. Kurbanova, D. Muminova [38]]" defined the concept of "graphic organizer" and explained the advantages of using them, R. Sayfullayeva, M. Abuzalova, G. Toirova" [39], O'. Tolipov, D. Roziyeva" [40], M.Saidova's" [41], O'.Abdullayeva's" [42] works "Fish skeleton", "BBB", "Conceptual table", "Venn diagram", "Insert", "Cluster", "Why? ", "How?", "Analogy", "Chain", "T-chart" are listed as graphic organizer names. Although information about graphic organizers and their research has been given above, this situation does not serve to fully reveal the essence of graphic organizers.

METHODS

The research used analytical methods such as theoretical analysis, pedagogical observation, comparative analysis, pedagogical experiment, and modeling.

"Hierarchy Diagram" graphic organizer

On page 26 of the 6th grade mother tongue textbook, the text under the topic "Hospital" is given, and in task 2, it is asked to answer questions about doctors by focusing on pictures [43: 26]. Before answering the given questions, we will create a "Hierarchy Diagram" (see Figure 1.).



Figure 1. "Hierarchy Diagram" created using MindOnMap software

As a result of the description in this case, the students will develop the ability to compare and classify doctors according to their classification, visibility will increase through graphic organizers, mutual understanding between doctors and people in the same profession will be formed. This graphic organizer tool creates a unique graphical representation of a data set with its internal parts, allowing you to gain a complete understanding of the whole and its components. We also refer to this chart-like graphic organizer as an Org Chart or Org Chart.

Graphic organizers in this category are part of Concept Maps. In the instructional manual entitled "Designing and Planning of Pedagogical Technologies" by LVGolish and DMFayzullayeva, we see that the word concept is defined as follows: "Conception is a general idea or an idea, concept, system of thoughts about something" [44:17].

Concept maps are a certain class of graphic organizers that can show concepts and the relationships between them, and can put complex information into one system and connect it with a single concept (central concept).

In understanding concept mapping, we first need to understand what hierarchy is. Hierarchy is derived from the Greek word, which means "the ordering of some parts or elements of a whole thing or event from top to bottom [45]".

Nancy Gallenstein of the University of Beaufort, South Carolina, USA, states in her article: "Concept mapping is an inquiry method that allows students of all ages to demonstrate hands-on learning [29: 60]."

Researcher-scientist Nancy says that students between the ages of three and twelve can use concept maps. In particular, the researcher-scientist emphasized the presentation of concept maps in a hierarchical format. That is, the main concept or term can be placed at the top of the concept. A hierarchical arrangement is a form of arrangement in a specific order. This condition can spread from top to bottom.

Researcher Nancy also mentions that software like Kidspiration allows students to create concept maps with pictures or words.

Mind Maps graphic organizer

Students will also have the opportunity to project and organize their knowledge while creating graphic organizers using software, which will develop their creativity. For example, we can witness a student form his own diagram under the topic of word groups (see Figure 2).

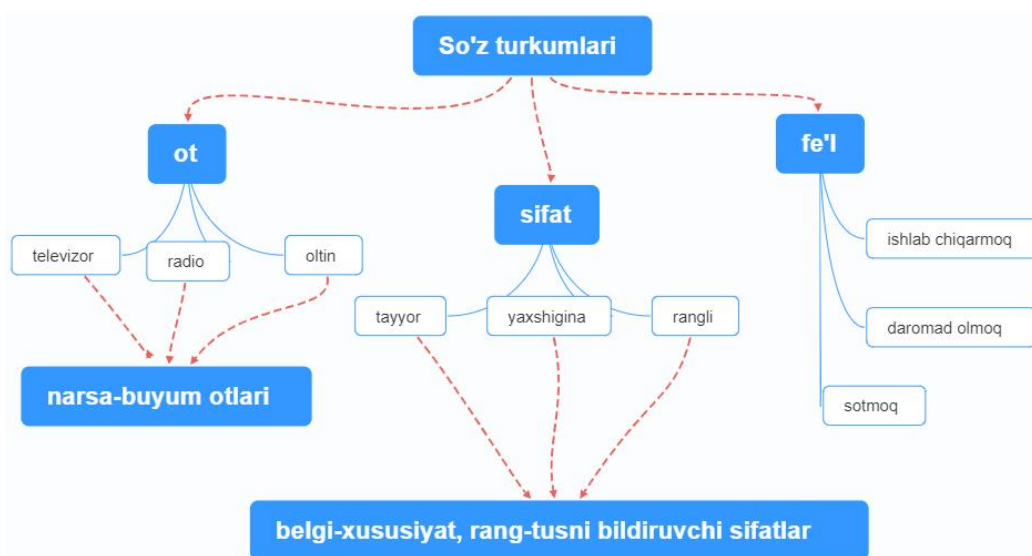


Figure 2. A graphic organizer created under the theme "Vocabulary".

As a result of our use of "Mind Maps", they create a compact graphic form based on the texts and the information provided through them, and through this, students develop the ability to think logically and critically, and in the cluster graphic organizer, students can clearly express their personal knowledge. information is formed one after the other in a "spread state".

television, radio, gold belong to the noun group, words like *ready, well, colorful* belong to the adjective group, and words like *produce, earn, and sell* belong to the verb group. we have considered. In this case, we will be able to assign tasks from textbooks as homework. Or, in the process of working with groups, representatives of each group can explain the given task in the same form and make a small presentation on the basis of their prepared projects. By illustrating in this case, we learn to organize the word groups in a specific way, which is better consolidated in the minds of the students as a result of the illustration in this case.

We can not only strengthen students' morphological knowledge, but also encourage students to creative research, design them through graphic organizers, develop certain hypotheses, analyze results, and develop the skills to come to the necessary conclusions. .

FSMU graphic organizer (Also described in the sources as "technology".)

It is advisable to use the "Brainstorming" and "Blitz-survey" methods in forming the FSMU graphic organizer. Through this, skills and abilities such as development and stimulation of students' free thinking, ability to fearlessly express their opinion in the team, systematization of acquired knowledge are developed.

On page 103 of the 6th grade mother tongue textbook, a task was asked to complete this excerpt from the text by replacing the dots with the appropriate agreement suffixes [43: 103]. We will write down the first sentence given in the assignment. If we produced imported products ourselves, our economy would develop further [43: 103]. The student can automatically find the solution given in this task based on his own logic. But if we put it in the table of FSMU, the reader will have a wider view and understand the real essence (see table 2.).

F ^{ikr}	The reader used the suffix here.
S ^{abab}	Because the accusative suffix can be used before transitive verbs.
M ^{isol}	+ When we produce the products (transitive verb)
It is waxing	Therefore, before using the agreement, we take into account the word in which it is connected to the word group. If we use a word before a transitive verb, it must take the suffix -ni.

Table 2. FSMU graphic organizer

Through this graphic organizer, students can express their free thoughts and opinions, as a result of the expression of knowledge, creative thinking skills are formed, mental activity develops.

"Multiple Meaning Map" graphic organizer

It is known that the unique charm of our language is further polished with the help of words. When revealing the lexical meaning of words, explaining the literal and figurative meanings of words used in the text, explaining the types of words according to the relationship of form and meaning, "Multiple meanings" It is advisable to use the "map with no" graphic organizer. This type of organizer is similar in shape to a table. On page 138 of the 7th grade mother tongue textbook, the task of copying and writing words such as *kungay*, *takscha*, *takhman*, and *mat* was asked [46: 138]. We show the lexical meaning of these words and their use in the text using the graphic organizer "Multiple Meaning Map" (see Table 3).





<p>day Meaning: <i>facing the sun, the sun sets vertically.</i> Word group: quality Analysis: day+gay=day (simple passive adjective)</p> 	<p>Estimated Meaning: <i>on the wall of the house or porch: a special shelf-like place where a chest is installed and bedding is placed on it</i></p> <p>Word group: noun Analysis: takhman (simple noun)</p> 	<p>Dividend Meaning: <i>flat, surface vessel; likop .</i> Word group: noun Analysis: divide + cha = divide (simple noun)</p> 	<p>Mat Meaning: <i>a mat woven from cleaned reeds .</i> Word group: noun Analysis: mat (simple noun)</p> 
---	---	---	--

Table 3. "Multiple meaning map" graphic organizer

"Fish Skeleton" graphic organizer

The "fish skeleton" graphic organizer was introduced to science by Kaoru Ishikawa [47]. This graphic organizer is also considered one of the graphic organizers that belongs to the category network. It is called "fishbone diagram" in English [48], and if we translate it into Uzbek, we can write it as "Fishbone diagram". But we know it better under the name "Fish Skeleton". We have received information that the "Bali skeleton" graphic organizer is a type of "Brainstorming" method, this scheme was originally called "fishbone" technology, and was used in practice to analyze and improve the quality of processes in Japanese industry [35: 183]. In this graphic organizer, the main problem is written in the center, that is, the head of the fish, and the ways out

of this problem are highlighted in its peripheral parts. We referenced this fishbone graphic organizer model in MindOnMap software (see Figure 3).

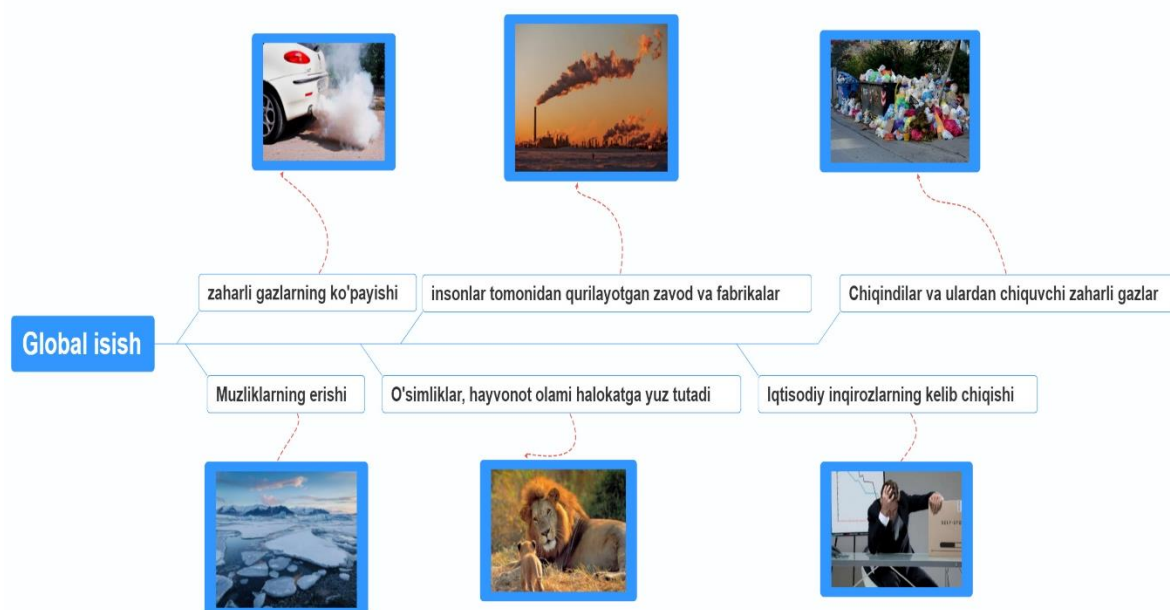


Figure 3. "Fish Skeleton" graphic organizer

This helps students to think critically, to identify the causes of the problem and to make critical conclusions while finding a solution to the problem.

RESULTS

As a result of our research on graphic organizers, we have seen that they can exhibit the following characteristics:

1. Graphic organizers are an educational tool used for visual thinking in visual learning technology.
2. Able to guide the selection of a presentation method appropriate to the task.
3. Students can express their thinking through graphic organizers of various shapes and sizes.
4. By using graphic organizers, in addition to developing linguistic knowledge, students acquire skills and competences such as independently conducting creative research, searching for knowledge, independently understanding, clarifying and finding solutions to problems. they did.

DISCUSSION

In our opinion, graphic organizers are the most frequently used visual educational tools used in the continuing education system. Jason Shern, one of the foreign scientists, said that graphic organizers are "an important literacy tool that helps to create meaning from scientific data" [49], Inda Arintina from Indonesia, in her published thesis, that it is a "visual communication tool" [50] that expresses concepts and ideas, representatives of our country Sh.T. Choriyev, SAAvazova, FAAhmedov in their article stated that graphic organizers are a "tool" [51] that presents complex information schematically in a simple form, a teacher of Russian language and literature at the Vocational Educational Institution of Uchkuduq District, Navoi Region In her article, GBNavruzova emphasized that graphic organizers have three tasks (visual (descriptive), communicative, cognitive) and are a "didactic tool" that can be used in educational planning [52: 274-278] . The method, first of all, represents a type of activity with different parameters, directed to a specific goal. Methods are mutually characterized according to the didactic purpose,

according to the general purpose, according to the cognitive activity and many other features. Graphic organizers act as a tool for implementing this method. For example, in the explanatory (illustrative) method, the necessary knowledge and information for the students within the subject are transferred and mastered by the teacher "ready". In this case, the teacher-pedagogue uses a graphic organizer prepared in advance for the lesson. We use the term graphic organizer to refer to the resulting form, not the process.

Verbitsky Andrey Aleksandrovich provides information about the "semiotic teaching model" in modeling student activity in contextual education, which is based on ensuring the mastery of each student, as in traditional teaching. written and written educational texts" [53] in his monograph. Educational tasks and assignments are the basis of this semiotic modeling. In our opinion, we also take graphic organizers as teaching material in this modeling. For example, in the task given on page 72 of the 7th grade mother tongue textbook, it is indicated that it is necessary to prepare an essay draft based on the choice of one of the topics " [46: 72]. Before preparing a draft copy of the essay to be written, we will be able to record the necessary ideas, arguments, and information with the help of the "T-schema" graphic organizer. Or, on page 54 of this textbook, a task is given to fill in the different aspects of the monologue and dialogue in the form of a drawing [46: 54]. This diagram is a "Venn diagram" whose name is not mentioned in the textbook. In the task given on page 95 of this textbook [46: 95], it is said that *the words great - grandchild, great-grandchild, family, child, family tree and great-grandchild* should be written correctly with explanations. For example, *a family tree is a list showing the origin and degree of kinship of representatives of a certain clan* [46: 95], *a family is a group consisting of a couple, their children and their closest relatives. community of living people* " [43: 95], in the process of making comments such as, on page 38 of the 6th grade mother tongue textbook under the topic "Consequences of climate change" *conflict, migration, dynamics, greenhouse* We can use the "Analysis of Concepts" graphic organizer in the process of deriving explanations of words such as *gases, atmosphere, based on the content of the text*. In both situations, graphic organizers are understood as educational tools.

List of used literature:

1. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis and the people of Uzbekistan. 2022 December 20 .
<https://president.uz/uz/lists/view/5774>
2. Shoyimova Sh.S., Khoshimova KM, Mirzayeva Sh.R., Koziboyeva MM Educational technologies: textbook. - Tashkent: Ijod-print, 2020. - 310 p.
3. Atakhanova EJ, Kholburiyeva Sh.S. Possibilities of developing students' competences in working with text using graphic organizers in mathematics lessons // Mejdunarodnyi nauchnyy zhurnal "Nauchnyy impuls". No. 5 (100), issue 1, December, 2022. –B. 914-919.
4. https://en.wikipedia.org/wiki/Graphic_organizer
5. <https://files.eric.ed.gov/fulltext/ED418381.pdf>
6. Culbert, Elizabeth; Flood, Michelle; Windler, Rachel; Work, Debra (1998). "A qualitative investigation of the use of graphic organizers" (PDF). Paper Presented at SUNY-Geneseo Annual Reading and Literacy Symposium – via ERIC.
7. Barron, RF (1969). Herber, H.; Sanders, PL (eds.). "The use of vocabulary as an advance organizer". Research in Reading in the Content Areas: First Year Report.
8. https://file.scirp.org/pdf/CE20120300011_69910750.pdf
9. Ausubel, David P. (1960). "The use of advanced organizers in the learning and retention of meaningful verbal material" . *Journal of Educational Psychology* .
10. <https://scholar.google.com/citations?user=ikplldIAAAAJ&hl=en>

11. Mercuri, Sandra P. (2010). "Graphic Organizers Support Young L2 Writers' Argumentative Skills" (PDF) . *GiST Education and Learning Research Journal* .
12. Selevko G.K. Encyclopedia of educational technology. V 2-x t. T. 1. - M.: Narodnoe obrazovanie, 2005. - 556 p.
13. N.V. Bordovskoy. Sovremennye obrazovatelnye tehnologii: uchebnoe posobie. - M.: KNORUS, 2010. - 432 p.
14. R. Kirilina Techniki effektivnogo obucheniya ot A do Ya. Encyclopedia for parents. 2018. – 122 p.
15. https://elib.utmn.ru/jspui/bitstream/ru-tsu/17125/1/Stepanova_547_2018.pdf
16. <https://research-journal.org/archive/7-6-2012-november/graficheskoe-predstavlenie-informacii>
17. https://docviewer.yandex.ru/view/1427747785/?page=4&*=LQ5CdKCiUF8WDjNQJoD2cFes7NZ7InVybCI6InlhLWRpc2s6Ly8vZG1zay%2FQ19Cw0LPRgNGD0LfQutC4L0dyYWZpY2hlc2tpZV9vcmdhbmFqemVyeV92X29idWNoZW5paV9pbm9zdHJhbm5vbXVfeWF6eWt1LnBkZj9zZXFlZW5jZT0xIiwidG10bGUiOiJHcmFmaWNoZXNraWVfb3JnYW5hanplcnldl9vYnVjaGVuaWlfaW5vc3RyYW5ub211X3lhenlrdS5wZGY%2Fc2VxdWVuY2U9MSIsIm5vaWZyYW1lIjpmYWxzZSwidWlkIjojMTQyNzc0Nzc4NSIsInRzIjoxNjkyNDY1Nzg0NjkwLCJ5dSI6Ijg2MDczODc0NTE2NzU1Mjg0MjUifQ%3D%3D
18. <https://ru.bilimainasy.kz/vozmojnosti-graficheskix-organayzero/>
19. https://orleuastana.kz/files/nie-mental-ny-h-kart_hyyfe4s6b7rfhz0044umbb/
20. <https://cyberleninka.ru/article/n/graficheskie-organayzery-na-urokah-clil-kak-sposob-aktivizatsii-kognitivnyh-protsesov/viewer>
21. The use of graphic organizers to enhance thinking skills in the teaching of economics. -Hong Kong (China): Curriculum Development Institute. Personal, Social and Humanities Education Section, 2001. - 104 p.
22. Judith Bauer Stamper. Vocabulary-building graphic organizers & mini-lessons. - New York, 2006. - 48 p.
23. Tracey Harding-Stricker. Graphic organizers to support active reading strategy instruction, 2008. – 57 p.
24. Cristian Efrain Flores Pasaca. Graphic organizers as a cognitive strategy to develop vocabulary among ninth-year "L" students at Betriz Cueva De Ayora high school afternoon session of the city of Loja during the 2016-2017 school year. - Loja-Ecuador, 2018. - 158 p.
25. Chin-Wen Chien. Use of Graphic Organizers in a Language Teachers' Professional Development // *English Language Teaching; Vol. 5, No. 10; 2012 ISSN 1916-4742 E-ISSN 1916-4750*. - Hsinchu City, Taiwan. Online Published: August 16, 2012. -P. 49-57.
26. Hoang Tang Duc. Graphic organizers - effective tools for teaching reading skills. - Vietnam. - 19 p.m.
27. Ilter, I. (2016). The Power of Graphic Organizers: Effects on Students' Word-Learning and Achievement Emotions in Social Studies // *Australian Journal of Teacher Education, 41(1)* . -P. 42-64.
28. Joseph D. Novak. A search to create a science of education the life of an Ivy league professor, business consultant and research scientist. – Cornell University, Institute for Human and Machine Cognition: 2018. – 255 p.

29. Nancy L. Gallenstein. Concept mapping for learners of all ages. // Journal for educators, teachers and trainers JETT, Vol. 4 (1); ISSN: 1989-9572. - 196 p.
30. Adriana Cuzco C., Jeanneth Zhagüi P. The use of concept maps for developing children's reading and writing skills in a foreign language classroom. - Cuenca - Ecuador, 2010. - 203 p.
31. Mauri Calervo Ahlberg. Concept mapping as an empowering method to promote learning, thinking, teaching and research // Journal for educators, teachers and trainers. Concept mapping. An international outlook. Special issue. - Laboratorio de Investigación en Formación y Profesionalización Universidad de Granada. 2013. – 196 p.
32. George K. Conley. The effect of graphic organizers on the academic achievement of high school students in United States history who receive instruction in a blended, computer-based learning environment. A dissertation presented to the faculty of the school of education Liberty University. November, 2008. – 118 p.
33. Mavlonova R. et al. Theory and history of pedagogy: textbook. - Tashkent: Science and Technology, 2010. - 464 p.
34. Ishmuhamedov R., Mirsolieva M. Innovative educational technologies in the educational process. - Tashkent: Science and Technology, 2014. - 60 p.
35. Avlaev O.U., Jo'raeva S.N., Mirzaeva S.R. Educational methods: educational and methodological guide. - Tashkent: Navruz, 2017. - 208 p.
36. Muhamedova SX, Abdullayeva MD and others. Modern information technologies in the education of Uzbek language and literature: a study guide. - Tashkent: Excellent polygraphy, 2020. - 264 p.
37. Rasulova ZD, Quliyeva Sh.H., Dzhorayev AR Methodology of teaching technology: study guide. - Bukhara: Sadridin Salim Bukhari Durдона, 2021. - 384 p.
38. Askarova O', Nishonov M., Kurbanova Z., Muminova D. Methodology of teaching pedagogy and psychology: textbook. - Tashkent, 2019. - 365 p.
39. Sayfullayeva R., Abuzalova M. et al. Innovations in Teaching Simple Sentence Syntax: A Study Guide. - Tashkent: 2018. - 79 p.
40. Tolipov O', Roziyeva D. Pedagogical technologies and pedagogical skills: training manual. - Tashkent: Innovation-Ziya, 2019. - 276 p.
41. Saidova M. Theoretical grammar through graphic organizers. (methodical guide for organizing seminar sessions on theoretical grammar). - Bukhara: Durдона, 2022. - 113 p.
42. Abdullayeva O'. Pedagogical technology: a manual. - Tashkent, 2015. - 163 p.
43. Azimova I., Mavlonova K. et al. Mother tongue: textbook for 6th grade. - Tashkent: Republican Education Center, 2022. - 224 p.
44. Golish L.V., Faizullaeva D.M. Designing pedagogical technologies: educational and methodological guide. - T.: Economy, 2011. - 206 p.
45. <https://en.wikipedia.org/wiki/Hierarchy>
46. Azimova I., Mavlonova K. et al. Mother tongue: textbook for 7th grade. - Tashkent: Republican Education Center, 2022. - 224 p.
47. https://en.wikipedia.org/wiki/Ishikawa_diagram
48. Ishikawa, Kaoru (1990); (Translator: JH Loftus); *Introduction to Quality Control* ; 448 p.; ISBN 4-906224-61-X OCLC 61341428

49. Shern, Jason, "Implementing Graphic Organizers for English Language Learners in High School Biology" (2005). *Education Print Theses* . 274.
50. <https://jurnal.univpgri-palembang.ac.id/index.php/elte/article/view/3561>
51. Choriev Sh.T., Avazova S.A., Ahmedov F.A. Graphic organizer "or computer" and assistant teacher. Scientific and practical conference of science and innovation: in-academy.uz/index.php/si. <https://zenodo.org/record/7857934>
52. Navruzova G.B. Graficheskie organayzery na urokax russkogo yazyka i literatury // Modern science and research, volume 1/ issue 2. – B. 274-278. <https://zenodo.org/record/7454432>
53. Verbitsky A.A. Novaya obrazovatel'naya paradigmi i kontekstnoe obuchenie: Monograph. - M.: Issledovatel'skiy tsentr problem kachestva podgotovki spetsialistov, 1999. - 75 p.