

Developing full-fledged thinking skills in first-graders through the perception of the “surrounding world” (using the example of a Mind Map).

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Abstract.

In the article "How do we perceive the world?" of the subject "Computer Science and Information Technology", taught to first-graders from the 2023-2024 academic year. In teaching the chapter called "Mind Map", the possibilities of developing the imagination and full-fledged thinking of first-graders were studied.

It has been shown that the use of mind maps in education can help students develop not only logical thinking skills, but also "out-of-the-box thinking" skills that can give people an advantage over robots. The "Imagination" mind map shows the perception of information received from the outside world in the right hemisphere of the brain and the formation of imagination based on it. The article presents methods for developing students' imagination and critical thinking skills using the "Sensory Channels" and "Seasons" mind maps. These mind maps, which are published for the first time, show that students can gain knowledge about the world around us and the changes occurring in it, their impact on our senses, compare them, identify their similarities and differences, what emotions they evoke, and the skills of thinking about them.

Key words: The world around us, mind map, imagination, logical thinking, non-standard thinking, complete thinking, robot, verbal, visual, perception, analogy, comparison, sensory channels, vision, hearing, taste, olfactory, tactile, developmental, seasons.

Introduction (Введение).

During the period of rapid development of science and technology, the need for specialties with creative thinking skills increases sharply. And such skills are formed and developed in the learning process. This necessitates the creation of teaching methods that can ensure the development of such skills in students. At present, Uzbekistan also plans to introduce 4K skills (communication, collaboration, critical thinking and creativity) into the education system, introduced by the American organization "21st Century Skills" – Partnership for 21st Century Skills. For this purpose, you can use the "mind map", a productive method of visualizing verbal information [1].

Research Methodology (Методология исследования).

Teaching creative thinking begins with the development of imagination, that is, a creative product is not created without imagination [2]. Because imagination ensures the creation of a creative product that did not exist before considering work with images (emblems). Although the possibilities of using a mind map in education have been studied, it has mainly been used as a means of aggregating data [3].

Thinking is a psychological process of cognition, which consists of thinking with the aim of finding a solution to a problem. On the other hand, creative thinking is thinking with the aim of finding a



solution to a problem. Creative thinking in education is the imagination of the process being studied, understanding the content of the topic with reasoning. On the other hand, creative thinking skills are the skill of mastering methods of positively solving problems posed with the help of exercises, skills in this area.

In the near future, robots will also acquire linear (logical) thinking skills. Because it is possible to program such a thought process that is carried out on the basis of a cause-and-effect chain that is understandable to everyone and guarantees that they will come to the same conclusion. Because it will be based on analysis, comparison, generalization and clarification.

However, in order for a person to have an advantage over robots, he must have thinking skills that a robot cannot perform, i.e. programming is impossible. Perhaps this is unconventional thinking. Unconventional thinking is finding a solution to a problem in unusual ways, drawing conclusions in unusual ways. Such thinking is acquired as a result of long-term practice, inherent in a specific person.

Out-of-the-box thinking will be based on imagination, analogy, metaphor (history) and intuition. According to Sperry Roger's discovery "On the connection of the hemispheres of the brain in relation to specialties", basically verbal information, perception and "logical thinking" are the product of the left hemisphere of the brain, and visual information, imagination and "out-of-the-box thinking" are the product of the right hemisphere of the brain [4].

Activation of the cerebral hemispheres and ensuring their joint activity increases the efficiency of brain activity, that is, the possibilities of creative thinking of the brain. Joint activity of the cerebral hemispheres, that is, joint thinking of the brain, is called "whole brain thinking" [5].

A mind map can be a fruitful means of stimulating the joint activity of the cerebral hemispheres and developing the skills of "full-fledged thinking". Because it allows developing the skills of finding connections (associations), similarities (analogies) between information, concentrating attention, identifying the essence of a problem and expressing verbal information in a visual form. This is especially important for studying information from the surrounding world. From this point of view, starting in the 2023-2024 academic year, the section "How I perceive the environment" of the subject "Computer science and information technology", which will be taught to 1st grade students, can give good results [6]. We receive information from the surrounding world through our sensory channels and perceive it in the left hemisphere of the brain. In doing so, we receive information about color, shape, size, that is, the appearance of things. Let's compare them. Let's find out their similarities and differences. Based on this perceived information, various ideas are formed in the right hemisphere of our brain. And they, in turn, stimulate the birth of creative ideas. This process is clearly visible on the "Imagination" mind map (Figure 1).

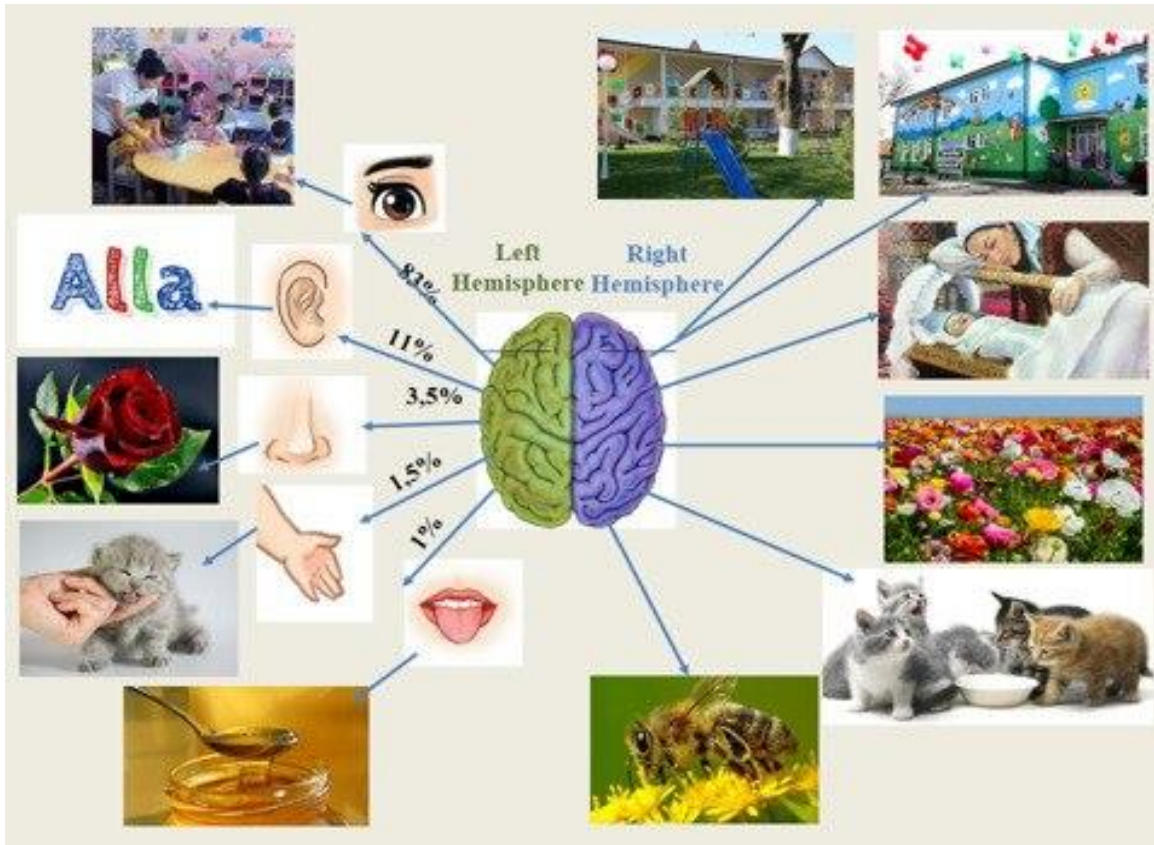


Figure 1. Mind map "Imagination".

With the help of the eyes, information about the teacher's appearance is perceived by the left hemisphere of the brain. In the right hemisphere, the school is imagined.

When you hear "Alla", you have an image of your mother singing "Alla" over the crib.

The smell of roses makes you imagine a flower garden.

The feeling you get when you pet your cat makes you imagine cats.

The taste of honey makes you imagine bees collecting nectar from flowers.

Results and Discussions (Результаты и обсуждения).

"How do I perceive the environment?", in the process of studying this chapter, children can pay attention to their important aspects in perceiving information, group them, clarify invisible similarities and differences between them. And these requirements can be easily achieved by using a mind map. This, in turn, can ensure the development of students' imagination and "full-fledged thinking" skills.

We are convinced of this with the help of the mind map "Sensory channels" (Figure 2).



Figure 2. Mind map of intelligence "Sensory channels".

Developing students' imagination and creative thinking with the help of the "Sensory Channels" mind map.

Look at the teacher in front of you. He calls you to the heights. He is so kind. He cares about you, and you care about him. What feelings do you have in your heart?

Her words are tender, like a mother's. Listen carefully to every word. What are your dreams for the future?

How do the roses smell that you gave the teacher on Knowledge Day. You still remember this smell. Remember that you made a bouquet of flowers. After the first lesson, you shared your impressions in your mother's arms. You press your hands to her face. You stroke her face with your hands. Wonderful feelings of affection. How did you treat your mother?

The ice cream you ate together is banana. There are bananas in front of you. Imagine the gardens where these bananas were picked.

The role of fantasy in the development of imagination is enormous. That is why it is appropriate to use those factors that give children more fantasy and leave a strong impression. First-graders have great opportunities in terms of thinking, the main source of which is their curiosity. For this, look at the mind map "Seasons" (Figure 3).



Figure 3. Mind map "Seasons".

Developing students' imagination and creative thinking with the help of the "Seasons" mind map.

1. How many seasons are there in a year? Do you know their names? The first season of the year? What do you remember about it? The second season of the year? How do we know when this season starts? What holidays are celebrated in this season? Which season is the hottest? What will you remember about this season? What do you remember from the last season?
 2. Which season is your favorite? What do you like about it? Which season is the coldest? The hottest season? What season of the year has the most beautiful nature? What season of the year does fruit ripen the most? What season has the most daylight?
 3. Can you tell what season it is by looking at the trees? What about the plants? What about the birds? What about the way people dress? When does a watermelon ripen? How are melons and pumpkins similar? What is the difference between a watermelon and a melon?
 4. Which is sweeter, the sour one on the left or the grapes? Is a quince big or a pumpkin? Do walnuts ripen first or almonds? Do you wear thick clothes in winter or summer? What time of year do children swim in the river?
1. Draw spring scenes. Draw winter landscapes. Have you ever seen snowdrops? What is their color? Have you ever seen tulips in spring? Tell about the similarities and differences between a tulip and a snowdrop.
 2. Are tulips and poppies similar? How do you understand the expression that a snowdrop is an ambassador of spring? What time of year is your favorite holiday? How would you like to spend it?

3. How do you understand the phrase "waterfalls sing in spring"? What hangs on trees and roofs in winter? Why are they called that?

4. What do you feel when you play snowballs in winter? How about picking tulips in a field in spring? Remember giving flowers to your mother?

With the help of the mind map, students will be able to learn "How do we perceive the environment?" During the teaching of the chapter, it is possible to achieve the perception of information with attention and deep impression. Well-perceived information ensures the awakening of vivid images in the right hemisphere of the brain. This situation is especially well represented on the mind map "Imagination". Also, the development of imagination and full-fledged thinking of students is achieved by activating sensory channels. At the same time, the teacher should be active and encourage students to be creative. The mind map "Seasons" encourages students to fantasize and think, can greatly contribute to the development of their critical thinking skills. The first four points of the questions are designed to teach the methods of cognition – analysis, comparison, generalization and clarification, aimed at developing students' logical thinking skills. The tasks of the next four points are aimed at developing the skills of non-standard thinking, developing imagination, mastering the elements of analogy, metaphor and evoking emotions. Joint mastering of these methods can ensure the development of students' imagination and critical thinking skills.

Conclusion/Recommendations (Выводы и рекомендации).

- The article shows the possibilities of developing students' imagination and "full-fledged thinking" skills in the process of teaching the chapter "How do I perceive the environment?" to first-graders.

- A good result of using the "Mental Map" - a productive tool for visualizing verbal information - is based on this goal.

- The mechanism of perceiving information from the environment in the left hemisphere of the brain and the formation of "imagination" in the right hemisphere of the brain is shown using the "Imagination" mind map.

- The "Sensory Channels" mind map shows sensory channels for receiving information from the environment, and with the help of this mind map, methods for developing students' "imagination" and "full-fledged thinking" skills are presented.

- Methods for developing students' imagination and "full-fledged thinking" skills are presented using the "Seasons" mind map.

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