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# USING INTERESTING METHODS AND OBSERVATIONAL OPPORTUNITIES FOR ELEMENTARY CLASS PUPILS TO UNDERSTAND SCIENTIFIC CONCEPTS

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**A B S T R A C T**

In this article, interesting methods for elementary class pupils to understand scientific concepts are carefully analyzed. Also, observation opportunities were used for students to understand scientific concepts. Each method is presented in detail in an interesting way.

**K E Y W O R D S**

Dreamer, realist, critic, Carousel, Puzzle, Scatter-gories, Metamorphic, megarelief, Mars, Curious, Tree, Continent, dictation.

**Introduction:**

**"Interesting" Method**

After reading the text, the students take turns explaining the information in this text in the form of a chain and provide information about the level of knowledge of this information: "I just came across this ...", "I knew ...", "I read this..." they say.

| On the topic of "Hoshimjon's family" | Text data analysis | | |
|---|---|---|---|
| | "I just come across this" | "I knew ...", | "I read it ...", |
| 1. If you allow me, let me say a few words about my family | + | | + |
| 2. He runs from mountain to mountain, thinking that he will give an injection if his eye falls out. | | + | |

**The "Dreamer, Realist and Critic" method**

A role-playing game in which you have to solve a certain problem from three different positions - from the perspective of a dreamer, a realist and a critic.

At first, pupils enter the image of a dreamer and come up with the most extraordinary ideas. In the second, they are pragmatists, they make a clearly integrated plan of action to solve the problem and think it over several times.

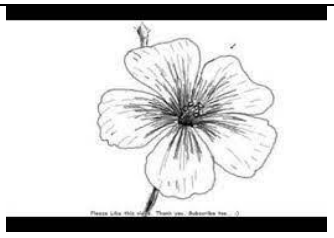
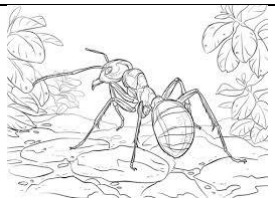
In the third, pupils debate, think critically, and find flaws in proposed ideas.

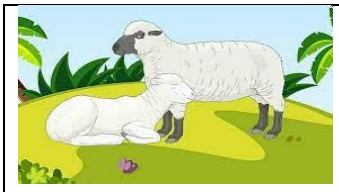
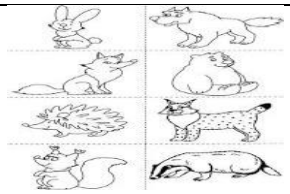
Roles can be assigned to multiple pupils or tested individually on a single pupil.

**"Tree" method.** It is necessary to draw a sketch of the tree on the board in advance; yellow and green leaves are made with double-sided tape on the back. Each pupil gets two leaves: green and yellow. In green, children write what they understood from the lesson, and in yellow, what they struggled to understand. Pupils keep the finished sheets of paper until the end of the lesson. At the end of the lesson, children stick their leaves on the tree: in green - expected, or in yellow - solutions performed without hesitation or without understanding. If there are a lot of green leaves on the tree, then the objectives of the lesson have been achieved. If the tree turns yellow, it means that mistakes were made in the lesson and students had difficulty understanding.

**"Carousel" method.** This method is aimed at working with small groups and revealing the content of the topic and strengthening the acquired knowledge. To use this method, it is necessary to prepare various sources of information: excerpts from newspapers and magazines, independently studied materials, audio recordings, video clips. Each group collects information about the topic to be studied. A group listens to the audio recording, finds answers, writes on the board. Another group looks for the necessary information from the text, the third - from the video, and the fourth - answers from independent literature. All the answers are written on the board and complement each other. Then the results are announced, that is, summarized.

**"I check myself" picture dictation.** In this picture dictation, students find, write and check the names of given pictures.
In this case, separate pictures are given for each student, and the words written with a pencil can be erased and used again by another student. (for example, in the 2nd grade mother tongue and reading literacy lesson "Courage of the Ant" you can get picture dictation as follows

| | | | |
|---|---|---|---|
|  | Flower |  | Hot Sun |
|  | Meadow |  | Fire |
|  | Grass |  | Ant |

| | | | |
|---|---|---|---|
|  | Sheep |  | Animals |
| Conclusion | Homeland of the ant | Conclusion | Patriotic ant |

**"Puzzle" game.** This creative group game encourages students to work together and conceptualize academic concepts from the abstract.

**Required Resources:**
Cards are pictures, words, concepts, mathematical calculations, subject vocabulary, historical figures, etc., printed or glued on paper and cut into random shapes (puzzle pieces).
Content: Divide the class into groups and then distribute a puzzle for each group to use together.
Note: Students can also create their own puzzles on the computer or draw puzzles on card stock for their peers to complete.
**"Scatter-gories" game.** This fun game challenges students to think outside the box and reinforce their knowledge on a range of topics.
**Resources:** scraps of paper, pencil, pen, and a list of topic concepts. For example, the concepts of bodies, rocks, landforms, weather, solar system are taken from the science textbook for the topic "Earth and space objects".
**Procedure:** Students are divided into small groups and asked to write down the concepts on paper. Choose a random letter from A to N and give students 1-2 minutes depending on the concept. Students must come up with a word for each concept that starts with that letter. After the allotted time, points are awarded for correct answers. If both teams write the same word for the concept, no one gets points. The game can be repeated and continued with different letters.

| **Topic: Earth and Space objects (letter M)** | |
|---|---|
| **Stones** | Metamorphic |
| **Relief forms** | Continental shelf (megarelief) |
| **The Weather** | Thunderstorm |
| **Solar system** | Mars |
| **Other signs** | ____...____ |

It is important to integrate the studied problem with their observation and experience in developing students' comprehension skills. Because the pupil's vegetarian experience based on personal observation is the main skill of the scientific process. In this process, pupils gain an understanding of the world around us by observing objects and events with the help of all five senses. The simplest observations in the process of pupils' understanding are qualitative observations. Pupils, especially younger students, need help with accurate observations. Effective observations are detailed and clear written or drawn descriptions, and pupils should be encouraged to produce these detailed descriptions.

**Observation is important in students' understanding of scientific concepts due to the following characteristics:**

• Observation focuses on the "what" and "how" rather than the "why."
• Observation is based on facts, not opinions.
• Observation should have minimal bias, that is, it should be objective.
• Observation is a continuous process, that is, it does not end only within one topic. The reason observations should be so detailed is that they help students develop their knowledge of the concepts being studied. We can also do this by listening to students' initial observations and then encouraging them to elaborate. For example, if a student is describing something he sees, he may describe the color of the object, but not its size or shape. In this process, we may invite readers to add new details to their personal descriptions. **(Table 2.1)**

**Table 2.1 Opportunities for students to understand through observation**

| Pupil's understanding as a result of personal observation | Teacher's understanding by adding new details |
|---|---|
| **Insect theme** | |
| Insects often secrete a sticky liquid when picked up and held tight. | Due to the presence of a nervous system in insects, they are disturbed, afraid and try to protect themselves. In these cases, when they move, they release a sticky liquid many times. |
| **Result:** The pupil understands and understands that insects have a nervous system, are disturbed, afraid, and defend themselves. | |

As mentioned above, the role of communication in the development of basic scientific understanding skills is important. The logic behind it is simple: people like to create experiences for themselves and others. If students have personally contributed to the lesson, they will be more interested in learning how the lesson is going. Also, students need to communicate in order to share their understanding with others, and if the other person wants to understand the information, the communication must be clear and effective.

One of the keys to effective communication is using references, called referents, to things the other person is already familiar with. For example, we often describe colors using referents. To describe certain shades of blue, green, or yellow, we might say sky blue, grass green, or lemon yellow. The goal is to communicate using descriptive words that both people have a common understanding of. Without referents, we open the door to misunderstandings.

It is known that a child's mind cannot withstand too many abstractions. It's important to find ways to connect concepts to students' lives, to convey sensory details—how things look, sound, and taste—in understandable language. If we just say hot or rough, our readers may have a different idea of how hot or how rough. If a student wants to describe the size of a pine tree, he can use the size of the board as a reference. A pine tree can be larger or smaller than a board. Students can communicate the problem verbally, in writing, or through drawing, depending on their level of understanding. Other commonly used methods of scientific understanding include graphs, charts, maps, and visual representations. (Table 2.2).

**Table 2.2**

**The importance of communication in students' understanding**

| Explanation without references | Reference explanation |
|---|---|
| **Leaf theme** | |
| A leaf performs several functions in the life of plants. One of them is the process of photosynthesis (assimilation). In the process of photosynthesis, under the influence of sunlight, organic substances are formed in the green chlorophyll grains in the leaf. (Berdiyev E.T., Salahiddinov G'.M., Hamroyev H.F. Forestry Tashkent - 2012.-16 p. 88 pages in total) | Carbon dioxide gas in the air (a gas emitted as a result of burning a car) under the influence of water and sunlight forms an organic substance-glucose (sugar). As a result, the plant is fed. |

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