
SYSTEMATIZATION OF STUDENTS' KNOWLEDGE ON THE AMBIENT WORLD THROUGH MIND MAPS

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Abstract: In this paper we present the mind maps as an innovative tool for getting acquainted with the natural and social environment in teaching The World Around. They enable the information on studied topic to be presented graphically as a set of words, images, symbols. Mind maps support the organization of information, solving a specific problem or decision-making and presenting them using a scheme. Using different colours and fonts increases the possibility of permanently memorizing the content and enrich the pupil's ideas about the studied objects, topics, phenomena. Thus facilitating absorption of concepts, revealing the connections between them and the target material can be presented as a coherent whole. Building a mind map is a long and continuous process that should follow specific steps: in the centre of the map, a basic concept is placed; then establishing the branches stemming from the central concept/picture, which may be of different thicknesses depending on their importance; finally "in the branches" specific denominations are recorded surrounding the concept. Using mind maps in the learning process of The World Around contribute both to the formation of various cognitive and practical skills such as comparison, grouping by certain sign, using various sources of information, etc., and to the development of intellectual abilities of students - logical thinking, showing creativity and taking decisions necessary for rapidly changing high-tech society.

Keywords: mind maps, teaching, the natural and social environment, The World Around

1. INTRODUCTION

In modern society the flow of information is constantly growing. This causes various difficulties in its perception. People need to learn to separate the main from the secondary, detect connections and patterns between different objects, processes and phenomena, summarize and systematize information. This requires, yet in early age, children to acquire these skills to prepare them for life. It becomes necessary to use new methods and approaches to teaching curricula, by which students become active participants in the learning process. Mind maps are such innovative method in recent years.

2. EXPOSE

The term "mind map" is introduced by the British psychologist Tony Buzan and appears at the end of 60s of XX century. Originally it is a way to faster learning. Over time the mind map becomes a tool for planning, organization, presentation, problem solving and method for remembering information.

Mind maps (in English: Mind Map – "mental maps", "knowledge maps") are a convenient way to display the process of overall systematic thinking with a scheme through which certain information is visually presented.

The development of mind maps is based on the findings of research on the brain, that the centres of the human brain right hemisphere are responsible for imagination, colour, rhythm, space and the left hemisphere for numbers, words, logic, sequence analysis. The human brain responds to sounds, language (words, numbers, symbols), colours, images, orientation in space, rhythm, logic (time, associations)⁷⁴.

The full possibilities of the mind map occur when, as central concept, we do not use words but images, and in general wherever possible, in the card, we use drawings instead of words⁷⁵. This gives us grounds to assume that the most effective in teaching ambient world (in first and second grade) are mind maps, which include only images or a combination of images and words since then information is acquired through both hemispheres. Made in this way, they can serve as a universal tool for improving learning and thinking of younger students.

According to Tony Buzan, the method of mind maps has four main features⁷⁶:

- Object (or idea), for which card is drawn, is placed in the centre;
- The main reasoning come from the central concept as branches;

⁷⁴ Sperry, R.W. (1968). 'Hemispheric de-connection and unity in conscious awareness.' Scientific American 21, p. 723-733

⁷⁵ Buzan, T. Your mind can do anything: Mind Maps. SoftPres, 2010, p. 85.

⁷⁶ Buzan, T. Your mind can do anything: Mind Maps. SoftPres, 2010, p. 59.

- The branches comprise a key image or key word printed on a line connected with the central concept. Minor issues also appear as spurs on the branches of a higher level;
- The branches are connected in mesh structure, the terms of the main branches are directly related to the central concept, and from them branch out other branches with other concepts.

Mind maps can be enriched with colours, images, symbols and volume that make them more interesting and more beautiful, give them personality. All this facilitates creative thinking, remembering and access to information. Through it, the information is visualized, allowing better uptake and understanding by creating associations between words, shapes, colours, spatiality, etc. Built in this way, the mind map allows knowledge on specific topic be connected in a comprehensive picture.

When designing mind maps, it is necessary to observe the following guidelines:

- Use white paper, A4 at least, horizontally (landscape).
- At its centre the image of concept / object / central idea shall be located.
- From the centre thick branches shall come out with written on them associations with the central idea (certain words, images, symbols).
- The main branches shall have sub-branches related to the keywords. They can be of thinner lines and a smaller size of the keywords.
- The length of the line shall correspond to the length of words.
- Use lines, reminding tree branches, which reduce monotony and facilitate memorization.
- Use a different colour for each branch, leaving enough space between them.
- If possible, insert a diverse visual decoration – shapes, colours, size, font, arrows, and images.
- Use as many images as possible.

Several studies show that the use of mind maps in the learning process increases its effectiveness by comparison with traditional methods and tools. That is why they are used in primary school.

In view of the aforesaid we believe that mental maps can successfully be used in teaching ambient world in familiarizing students with the natural and social environment. Cards can be drawn from students both individually and in a group. Through them children acquire faster and easier new and abstract concepts. Thus they acquire a more complete picture of the basic concepts nature included in the curriculum, reveal causal relationships, formulate conclusions. Simultaneously students form cognitive and communication skills: for classification and systematization of knowledge, hearing the views of the rest of the group, working with various information sources and more.

In the following, ideas will be presented that can be realized in the mastering of some new concepts in classes on the ambient world, which are more difficult to learn and require further clarification and visualization.

Theme “Transport – different and necessary” (figure 1)

The aim of the lesson is to clarify the concept vehicles to perform the types of vehicles and to explain their purpose.

In mapping out students follow the following sequence:

- Place concept *vehicles* at the centre of the mind map.
- Determine the main branches of the card (e.g. by the medium where vehicles are moving – air, water, land; from land there shall be new branches to road and rail).
- Define the sub-branches of each branch (for example, by their purpose – for passenger and freight transport).
- Place specific representatives of each group of vehicle on the thinnest branches in the card.



Figure 1. Mind map “Vehicles”

Theme “The diverse world of plants” (figure 2)

The aim is to present the diversity of plants according to their parts.

In mapping out students follow the following sequence:

- Place the concept *plant* in the centre of the mind map.
- Determine the main branches of the map (for example, plant organs).
- Define sub-branches of the main branch: root branch (e.g. bulb); trunk branch (e.g. trees, shrubs, herbaceous plants); leaves branch (such as conifers, deciduous); flower branch (e.g. chamomile, white lilac, yarrow); fruit branch (e.g. with pits, with seeds) and others.
- Place specific representatives of each group of plants on the thinnest branches in the card.

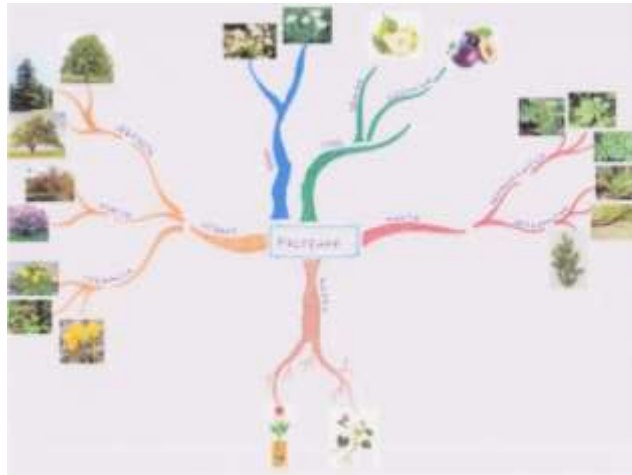


Figure 2. Mind map “Plant”

3. CONCLUSION

We believe that the proposed ideas could help students in acquiring new and abstract concepts related to the natural and social environment in teaching ambient world. Using mind maps in learning new concepts on a subject contribute to their clarification and systematization, enhance the improvement of some cognitive and practical skills of students and the stimulation of their initiative and creativity.

4. LITERATURE

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Sperry, R.W. (1968). 'Hemispheric de-connection and unity in conscious awareness.' Scientific American 21, p. 723-733