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## Methodology of "Mind maps" technology usage at primary school's foreign language lessons

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**Abstract:** The article highlights "Mind maps" technology usage at primary school at foreign language lessons. In order to do so, it gives an overview of "Mind map" technology in general and in foreign language learning. The definition of "Mind maps" technology has been specified. The peculiarities of "Mind map" technology has been described, the rules and the ways of its implementation have been stated.

**Key words:** "Mind maps" technology, associations, vocabulary, brainstorming, foreign languages, primary school

**Introduction.** The importance of knowing foreign languages today is understood at the government level that is proved by the laws and standards adopted recently, for instance, a new Government standard of general primary education (2012). It foresees learning foreign language from the first grade. It is connected with the globalization, internationalization and competitiveness at labor market. That is why to know at least one foreign language is necessary for every person.

The main goal in education and especially in foreign languages learning is the quality of obtained knowledge and the effectiveness of this process. In order to provide these goals different technologies of foreign language learning are being borrowed and tested in Ukraine as well as around the world, for instance, WebQuest technology, CALL technology etc.. One of the most popular technologies of recent years is "Mind maps" technology first introduced by British psychologist Tony Buzan. It gains more and more widespread usage with every year and a lot of researches have been done recently. Mind mapping has for decades been a regular feature of primary and secondary education in Europe – in Germany and Britain, in particular [6]. The possibility of its implementation in primary school at foreign language lessons is investigated recently.

**Analysis of recent achievements and publications.** Displaying information visually has quite long history. Flow charts, for example, were developed in 1972 (Nassi and Shneiderman 1973), pie charts and other visual formats are also not new (Tuft 1983).

"Mind maps" are examined in different countries, spheres and in a variety of disciplines: in Finance (Biktimirov E. and Nilson L.), Economics (Nettleship J.), Marketing (Eriksson L. and Hauer A.) [2].

The possibilities of "Mind maps" technology in foreign languages were analyzed by Chularut P., DeBacker T., Fotheringham J., Hofland C. and others. But the most part of presented information is typical for the secondary and high school.

**The objective of the article.** The main objective of the article is to provide the investigation of "Mind maps" technology usage at primary school at foreign language lessons. On the basis of the objective the following tasks are distinguished: 1) to specify the definition of "Mind maps" technology; 2) to distinguish between the synonymic notions "mind maps", "brain maps", "mental maps", "cognitive maps", "concept maps", "knowledge maps"; 3) to consider the aim, ways of "Mind maps" technology usage in primary school at foreign language lessons; 4) to discover the peculiarities and advantages of "Mind maps" technology.

**The material and the methods.** The process of education is improving due to different educational technologies used nowadays. New approaches and teaching methods appear. Especially Internet technologies contributed to the process of education. "Mind maps" technology can be overviewed as closely connected with it as it is supported by special soft programming.

The term "Mind map" the same as in Ukrainian, Russian, English languages has a lot of synonymic terms as "brain maps", "mental maps", "cognitive maps", "concept maps", "knowledge maps". But the essence of the technology is the visual representation of relationships either between concepts, ideas, notions and words that depends on the term being used. The main theme is always in the middle and the other subthemes are in some relationship with the central idea. So mapping tools are similar, but there are differences in their application. Mind mapping allows to imagine and to explore associations between concepts; concept mapping allows to understand the relationships between concepts; argument mapping allows to display inferential connections between propositions and connections, and to evaluate them in terms of validity of argument structure and the soundness of argument premises [2]. Moreover, T. Buzan draws attention to the difference of his Mind maps and other diagrams. The main things in his Mind maps are clarity and avoiding chaos.

A "Mind map" is a graphic tool which contains a central key word or image and secondary ideas that radiate from the central idea as branches [1, p. 1]. "Mind maps" were first applied to foreign language teaching in the 90's as an aid to activate prior knowledge on a certain topic and help learners to organize and recall items of vocabulary. When used to activate prior knowledge, a teacher asks learners to brainstorm certain vocabulary items on some topic and the learners associations which the teacher writes on the board creating a collective map. When used for vocabulary acquisition, teachers first ask learners to brainstorm items of vocabulary associated with a certain topic and then learners are asked to create their own maps. [1, p. 2].

Foreign language teachers can design and use "Mind maps" in their classes to scaffold listening and reading comprehension, develop the learner's oral fluency, empower the learner, foster a sense of self-efficacy and consequently maximize the learner's autonomy [1, p. 1]. But if we analyze the ways of effective "Mind maps" technology usage at foreign language lessons in primary school we consider "Mind maps" for brainstorm and learning vocabulary.

The main principles of making mind maps are as follows:

- 1) first the central theme/idea is defined and put in the center,
- 2) key ideas radiate out from the center, like the branches of a tree,
- 3) the branches contain key drawing or words written in capitals over the line. Each basic idea sprouts a further set of ideas, connected by arrows, like twigs at the end of a branch,
- 4) the branches for a network of nodes [5, p. 317].

Tony Buzan, the inventor of Mind mapping gives the following recommendations when Mind mapping:

1. Place an image or topic in the centre using at least 3 colours.
2. Use images, symbols, codes, and dimensions throughout your Mind map.
3. Select key words and print using upper or lower case letters.
4. Each word/image is alone and sitting on its own line.
5. Connect the lines starting from the central image. The central lines are thicker, organic and flowing, becoming thinner as they radiate out from the centre.
6. Make the lines the same length as the word/image.
7. Use colours – your own code – throughout the Mind map.
8. Develop your own personal style of Mind Mapping.
9. Use emphasis and show associations in your Mind Map.
10. Keep the Mind Map clear by using radial hierarchy, numerical order or outlines to embrace your branches [2].

An example of mind map on the topic "Travel" is given in Fig. 3. It is made with the help of electronic software program – Xmind.

Mind maps can be generated in two ways: hand drawn (manual technique) and visualized on computer (digital format – created with the help of electronic software packages, such as: Mindjet, XMind, Coggle, Freemind, MindNode, Scapple, MindMeister etc. The list of the programs for Mind mapping is long, the difference is in the cost (free / commercial software), number of formats. In general the functions are quite similar. So it is the question of taste. Due to the computer software programming, mind mapping has evolved into such a powerful tool for teachers, learners, and organizations that it has been called "Swiss Army Knife of the Brain" [4, p. 175].

There are some advantages of using computers for mind mapping:

- data acquisition (all categories/branches can be easily placed and organized or retrieved when needed);
- easy reorganization (branches can be copied, the colours – changed, the structure - reorganized);
- ready for presentation (enable to present the material in the form of any document, moreover you can add various symbols and design to personalize it);
- comments (it gives an opportunity to add explanatory notes or even to create text files and connect them to respective branches);
- export (can be easily exported to other formats, for example as a graphic file in Power Point) [5, p. 319].

The radiating design keeps the main topic or idea central, with all its major subtopics close to it. Similarly, subtopics stay close to their topics. This arrangement makes relationships and connections easier to see [4, p. 176].

Among the advantages of this technology the main are the stimulation of creative thinking and problem solving. Also it improves creativity and memory. Mind map can help teachers with visual learners. Visual presentation of complex information also helps right-hemisphere-dominant pupils, who may not be able to differentiate between the key ideas and tangential information [4, p. 178].

Mind maps are extremely useful for 3 main purposes in language learning:

- learning vocabulary;
- building a clear context before, during and after study sessions.
- organizing one's thoughts before writing [3].

There are some strategies teachers could use in class or outside the class. If the teacher chose in class variant the plan will be as follows:

Pre-class:

1. Planning (according to the lesson plan and curriculum).
2. Organizing (create structure and organization of a topic).

In-class:

3. Teaching (Online Mind Maps can be used as a brainstorm and generate discussions).
4. Hand-outs (Print and share online Mind Maps).
5. Presentations (Create an interactive Mind Map online).
6. Creativity (Mind Map is a blank canvas so you can give an idea to pupils and wait what can be achieved).
7. Learning (It helps to make connections between different areas and delving in-depth into an area).

Outside the class Mind Map can be used as a way of collaboration (give group projects), assessment (ask pupils to express their ideas about a topic in a Mind Map before and after a class. Pupils will retain the information better and it will also reassure teachers that pupils remember and understand the knowledge.) or comprehension (students to delve into the material and see how far they can go – a Mind Map can develop into several ideas which can branch out into new Mind Maps from each node.) [7].

As the "Mind maps" technology is widely used in secondary school it can be also used in primary school in 4<sup>th</sup> grade. According to the curriculum of primary school in Ukraine in 4<sup>th</sup> grade pupils learn such topics as: "Room", "Free time", "Nature", "Travelling", "Festival and traditions", "School life". So, choosing the topic "Travelling" we can make such Mind map:

1. The main topic that is placed in the center is travelling (Fig. 1).
2. Then the subtopics (chapter headings) that are radiating from main topic could be as follows: transport you can use for travelling, places you can visit (for ex. airport etc.), reasons for travelling and things you can take with yourself (Fig. 2).
3. Then the sub-topics on thinner lines radiating from each subtopic. For example the sub-topics for transport will be: bus, train, plain etc.; for reasons – holiday, work, study etc.; for places – airport, bus station, railway station etc.; for things – T-shirt, dresses, passport etc. (Fig. 3).



Fig. 1. The main topic of Mind Map



Fig. 2. The subtopics of Mind Map



Fig. 3. The sub-topics of subtopics of Mind Map

Images or symbols and colour pens can be used to make the emphasis were needed. A Mind map can be made on computer, and then updated process will be faster and comfortable. But it will be useful for the primary school pupils to draw such Mind Maps as they will have better results while creating their own images for the key words and subtopics.

Besides, Mind mapping can be used at the beginning of the lesson. For example, through the associations game. For the topic "Room" pupils can give such words: table, chair, sink, kitchen etc. When teacher captured all the ideas he helps to group and prioritized the ideas. The main topic of Mind map will be key word – room. The subtopics could be: rooms in a flat (kitchen, living room, bathroom, bedroom etc.), furniture (table, chair, wardrobe etc.) etc.. Kitchen and table in the given examples are sub-topics of subtopics. It is important not to neglect of any idea but to organize them properly and to create Mind map. Also teacher should pay attention to the main and additional images, their sizes, lines that join them with the key word.

**The results and their discussion.** The possibilities of Mind-maps and "Mind map" technology in primary school at foreign language lessons are wide and varied that can be seen from the above. To prepare to use this technology teacher should choose the way to create it (hand drawn or with the help of computer programs). If a teacher decided to use electronic software packages it is necessary to read some articles that recommend some programming or just download and try it.

After that the algorithm working with this tool is very simple. Teacher should remember and differentiate among the key images and subtopics, to use proper print

and colour to make the Map clear and understandable. And the last think is to choose the way of its presenting for the class at the lesson.

Taking into consideration the curriculum and four ways of speech activities: speaking, reading, listening and writing teacher should know when it is necessary or possible to use this technology. As has been given in the article and has been proved by other scholars the best and effective ways of using Mind map are brainstorming and vocabulary acquisition. If to speak about the part of the lesson, brainstorming is usually conducted at the beginning of the lesson and checking and enriching vocabulary would be optimal at the end of the lesson or the series of lessons on the same topic to see how good your pupils have learned the words.

**Conclusion.** "Mind-maps" technology is very powerful when using in the primary school to teach children vocabulary or conduct a brainstorm. They are already able to work at such tasks from the 4<sup>th</sup> grade, because they are born in informational society and know how to work with the computers; they have innovative views and approaches, unconventional ideas and they are bored when they are taught in traditional ways. So improvisation and using "Mind-maps" technology, for instance, could help teachers to teach them effectively.

The most positive results could be reached in learning vocabulary and the examples of the strategies were presented in the article. Starting from associations, brainstorming to the Mind mapping creation, the whole process involves the enrichment of vocabulary and logic connections building among all the given notions. Moreover it develops creation and improvement of thinking skills.

It is not necessary to have computer, because Mind maps could be created hand drawn, especially it is good for young learners who should have bright images and still draw. But if there is the possibility to use computer a wide range of soft programming that is absolutely free and clear in usage are being presented in Internet and can be used by anyone.

To use this technology in classroom a teacher will need only preparation like discovering the curriculum, choosing the topic and deciding about the way of creating and presentation. The future perspective is investigating of the possibilities of "Mind-map" technology in primary school at foreign language lessons in other speech activities, such as listening and speaking.

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**Рудник Ю.В. Методика использования технологии "Mind map" на уроках иностранных языков в начальной школе**  
**Аннотация.** В статье рассматривается использование технологии "Mind map" на уроках иностранных языков в начальной школе. Для этого определено, что такое технология "Mind map" в целом и касательно изучения иностранных языков. Уточнено определение технологии "Mind map". Рассмотрены особенности технологии "Mind map", установлены правила и возможности введения технологии.

**Ключевые слова:** технология "Mind map", ассоциации, лексика, мозговой штурм, иностранные языки, начальная школа