CONCEPT MAPPING TOOLS FOR EASY TEACHING – LEARNING

Dr. Akthar Parveen

Assistant Professor, Department of Education & Training, Moulana Azad National Urdu University, Hyderabad, Telangana, India

ABSTRACT

The Internet has revolutionized the entire teaching and learning system. The traditional classrooms are replaced by the latest technological gadgets to simplify the process of teaching and learning. Teachers and students no longer linger in libraries to prepare for their lectures. Now there are different software tools which assist the teachers in the process of teaching, like grammar checking tools, paraphrasing tools, mind maps, concept maps, content writing tools, Powton, I-learning tools, etc.

These tools are more appealing and creative, and they encourage students to learn, remember, and apply them in their daily lives. They make learning more interesting, enhance memory, and develop concept clarity by developing appropriate cognitive schema.

The objective of this article is to discuss concept mapping tools which are available on the internet and can be used very easily by teachers and learners to enhance the effectiveness of teaching and learning to attain excellence.

KEYWORDS: *Concept Map, Concept Mapping Tools, Mind Maps*

INTRODUCTION

We are aware that all students are not alike and that their differences lie with us. These individual differences prevail in learning as well. The students learn in different ways. Some are visual learners, some are auditory learners, and a few are kinaesthetic learners. The methods and techniques of teaching these students differ. Auditory learners are good at remembering through listening, visual learners remember better when they look at something, and kinetic learners remember well when they participate in and perform some activity. There are a number of concept mapping tools for teachers and students which make concept learning easy.

Concept maps are visual representations created with words, pictures, phrases, lines, and arrows to make difficult concepts easier to learn. These concept maps are prepared using various colours to enhance memory and remember the concept associated with a particular colour. Various concepts are organised in a systematic order, expressing various ideas.

The concept mapping technique was invented by Joseph D. Novak of Cornell University in the year 1970. Novak's team invented this technique while conducting a study on changes in children's knowledge.

These concept mapping tools are organised tools which represent knowledge and relationships between the topics to improve understanding of complex subjects. They are considered powerful learning strategies. They help in making meaning-full concepts easy by converting the information into meaningful chunks.

Generally, concepts are indicated by circles, ovals, and boxes, which are known as nodes. Relationships in the concept map are represented by arrows, which are known as cross links.

Concept maps are the result of Ausbels' theory of meaningful learning, which states that when students learn a new concept, if they understand the relationship between the concepts, then such learning is fruitful (KILIÇ and ÇAKMAK, 2013, p. 154).It means when a student learns new knowledge, and is able to relate new knowledge to previously learned knowledge consciously, such learning is meaningful (Stoica, Moraru, and Miron, 2010, p. 568). Meaningful learning is possible when the students have prior knowledge; there is peer interaction, communication, and collaboration.

CHARACTERISTICS OF CONCEPT MAPPING TOOLS:

- A concept map enables us to dig in-depth into the concepts related to the topic.

- Concept maps make teaching and learning easier by expressing the relationship between various concepts explicitly.

- It promotes the organised thought presentation of a concept.

- They provide a hierarchical structure for the concept and aid in concept memory.

- Hence, it aids visual memory.

- They reveal the learner's focus to be laid on the important concepts and raise questions related to the concept for concept clarity.

- Concept maps enable the learner to understand the cross-lings between various branched concepts and develop a holistic understanding of them.

- They lay a strong theoretical foundation for the concepts, which is the main function of teaching and learning.

- They are useful to meet the needs of different types of learners.

TYPES OF CONCEPT MAPPING

The basic content of the concept will be the same, but the purpose of presentation makes the difference. There are different types of concept maps based on the purpose of presentation. They are as follows.

- Spider maps

- Flow charts

- Hierarchical maps

- Chronological maps

Spider Maps

A spider map starts with a single topic in the middle and extends with the relationship between the various subtopics.

Figure 1: Source: https://www.edrawmax.com/
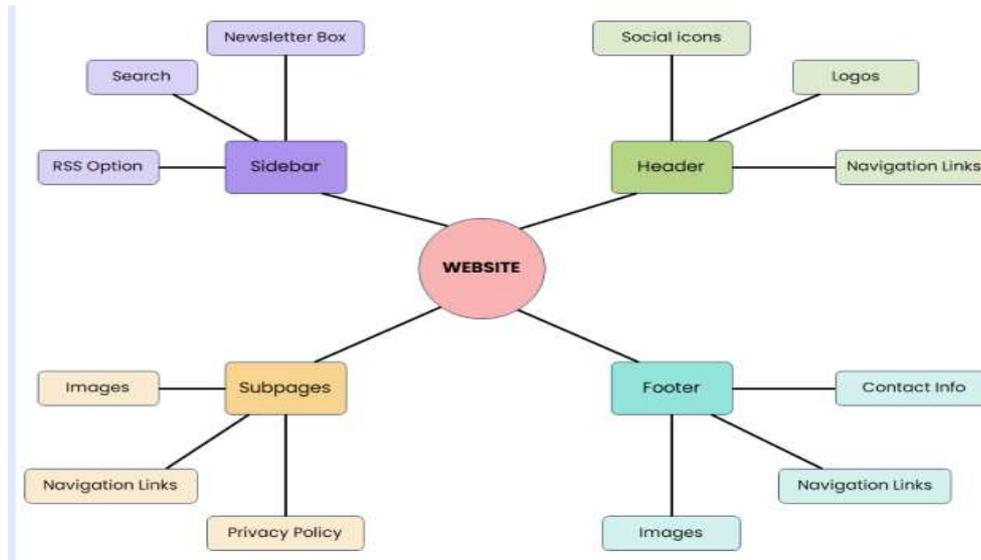
Flow Charts

It indicates the complex series of activities and actions in a sequential manner to make the concept easier to comprehend. Algorithm flow charts, swim late flow charts, cross-functional flow charts, system flow charts, process flow charts, simple flow charts, and programme flow charts are the best examples of various flow charts.


Figure 2: Source: https://eezytutorials.com/
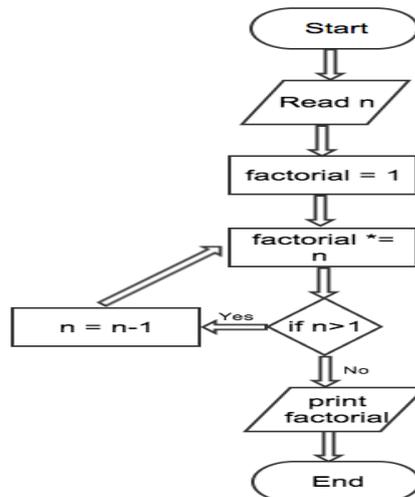
Hierarchical Maps

They explain the concept of elements of a system or organisation from the highest position to the lowest position in a hierarchical manner. Organizational charts are the best examples.

Figure 3: Source: https://conceptboard.com/
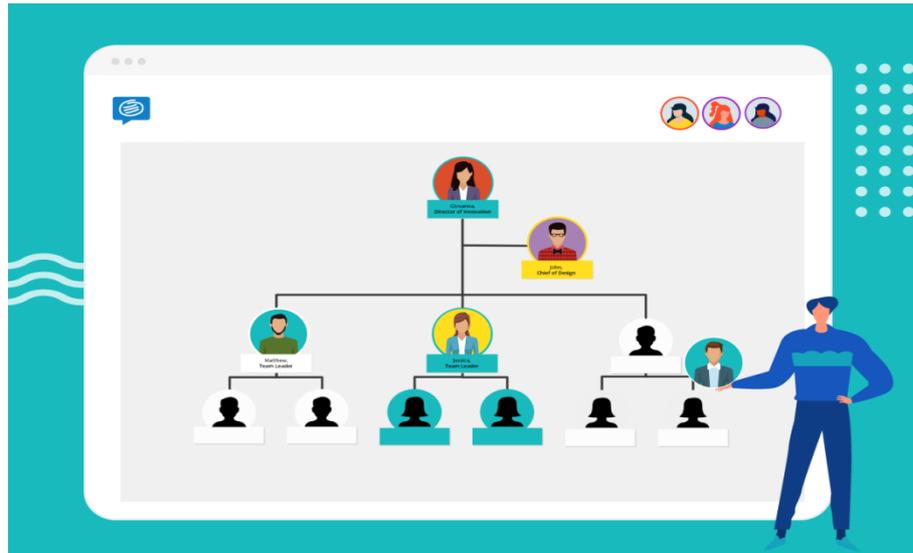
Chronological Maps

They are also known as historical maps, and they reveal historical events in a chronological order.

Figure 4: Source: https://www.researchgate.net/
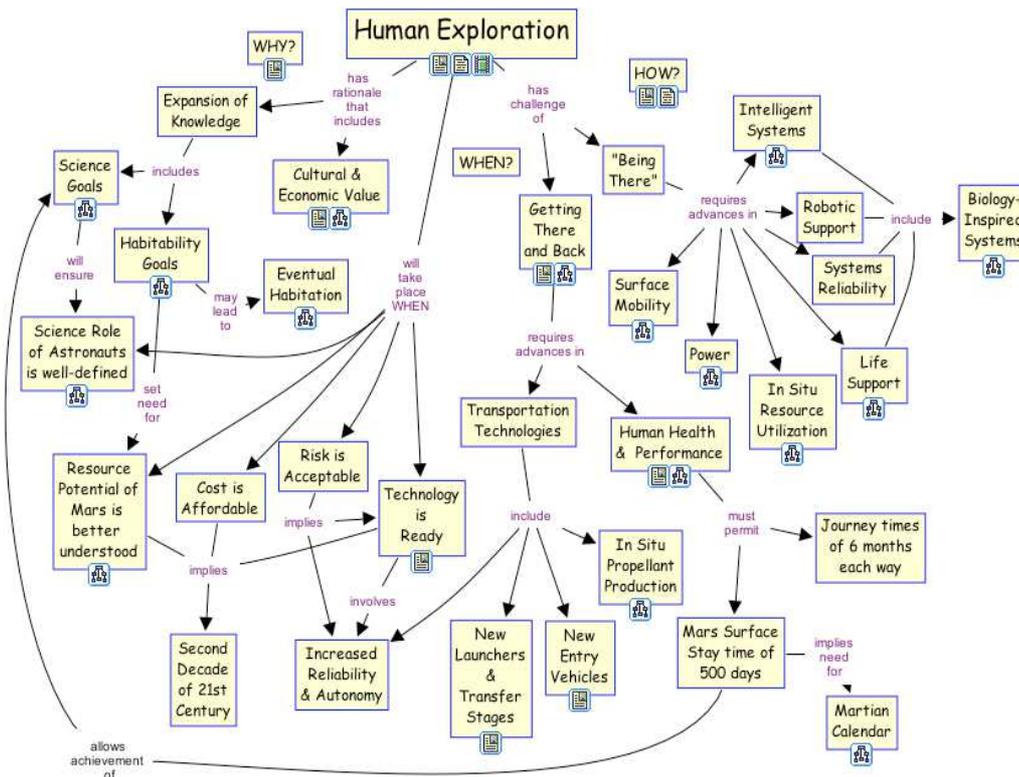
A System Concept Map

It is a flowchart type diagram that explains the input and output of a system. These are very useful in data representation.
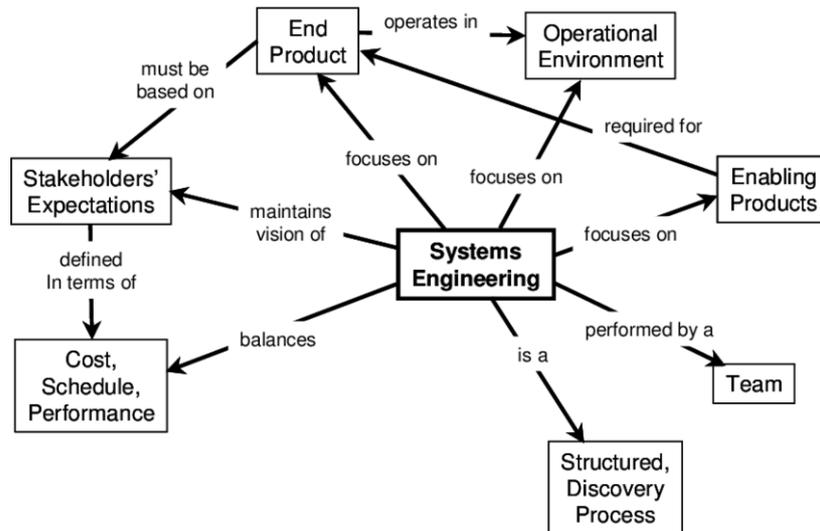
Figure 5: Source: https://www.researchgate.net/figure/Systems-Engineering-Concept-Map-Ring-2002_fig2_255633165

PROCESS OF PREPARING CONCEPT MAPS

It involves the following steps to prepare concept maps.

- Reading the content or topic thoroughly

- Noting important terms and vocabulary.

- Identifying general , intermediate, and specific concepts

- Drawing concept map

- Relating the concept to lines

- Labelling the lines with linking words

- Checking the map, whether the concept is clear or not

- If necessary, rewrite the map.

- Using the created concept map in the class room

As a result of the revolution in technology, a number of concept mapping tools are available for teachers to make the concepts simple, clear, and comprehendible. The following are the online available concept mapping tools.

Mind Mup

This concept mapping tool allows creating unlimited concept maps for free and storing them in the cloud, which can be made available at any time.

Us

It is a simple tool with which teachers and students can prepare colourful concept maps, share and collaborate with each other. It does not require any software download.

Creately

This tool supports collaborative work. It has ready-made, predesigned templates to use. pider scribe:- It is an online mind-mapping, brainstorming, and concept-mapping tool to organise our ideas by attaching files, notes, and calendars to the maps.

Mindomo

This is an excellent concept mapping tool, which has the special feature of presentation. It makes the presenter attach links; videos, PPTs, and audio directly to the concept map and present it.

Mind Meister

This is an effective mind-mapping tool to share ideas and prepare maps in groups .It also allows sharing in real time.

Poppet

This tool supports many languages. Students can create concept maps with text, images, and drawings in many languages. There is possibility of converting maps to pdf and jpg as well.

Coggle

It is also a collaborative tool that works online, which doesn't require any kind of download.

Lucid Chart

This tool assists users to prepare mind maps, concept maps , flow charts, and use them on any type of device in the classroom.

Simple Surface

This is an online white board used to create concept maps , mind maps, and outline online.

Sketchbook

This tool is very useful for teachers to create concept maps and share them with students online. It allows students to intern share their maps with teachers.

Real Time Board

This tool is very useful for online tools.

Connected Mind

It is available on the Google web store and can be used very easily.A storm board is another tool used for brain storming and concept mapping.

These online concept mapping tools facilitate teaching and learning activities, making learning more meaningful and satisfying for both the teacher and the student. Concept maps have the following utility. They are used

- To explain new knowledge:

- Give out new information.

- Boost knowledge visualization.

- Acts as a graphic organizer.

- To pass on knowledge

- Develop higher-order thinking skills.

- To improve recall of previously learned concepts

- To represent organised knowledge In the map

- Represent hierarchical structure.

- Develop cognition and perception.

- Helps to see the big picture of the concept.

- Remember a large amount of information.

- Develops meta-cognitive skills.

- Used to stimulate the generation of ideas.

- To aid creativity

- For brainstorming

- To communicate complex ideas to

CONCLUSION

It was rightly said that "teaching is not everybody's cup of tea."To teach effectively, the teacher needs to understand the learning difficulties of the students, their interests, abilities, motivation level, previous knowledge, IQ level, EQ level, personality traits, etc. All these differences create individual differences, which are a big hurdle in the process of teaching and learning.

Teaching effectively, developing concept clarity, enhancing quality in the teaching learning process and aiding better memory are the aims of concept mapping tools. Hence, knowledge of concept mapping tools is needed by the teachers. Knowledge, proper awareness of the software tools available help the teacher to teach without any difficulty.

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