

# Concept Mapping: A Step Towards Meaningful Learning

\*<sup>1</sup>Shivani Gupta and <sup>2</sup>Prof. Amita Bajpai

<sup>1</sup>Research Scholar, Department of Education, University of Lucknow

<sup>2</sup>Department of Education, University of Lucknow

## Abstract

People often complain that children lack the capacity to learn but the reality is most of the children can actually learn a great deal. Most of the problem arise from inactive process of knowledge gaining which only demands cramming of facts. Consequently they find themselves unable to create strong connections between concepts and thus learning remains just as a bundle of information without any connection with practical life and they found it boring. Contrary to meaningful learning, in rote learning, new concepts are added to the learner's mind in an unplanned way, creating a frail and temporary cognitive structure which soon deteriorate after the examinations especially in slow learners. Rote learning have a very little contribution in the formation of cognitive structure of students as they find themselves unable to relate isolated concepts automatically but if students observe a systematic and comprehensible view of v concepts concerning to their daily lives, then they would be able to develop a better understanding and of these concepts. Concept mapping could be an effective way to enable the students to think about connections between what is being learned, systematize their thoughts, visualize relationships between key concepts in a organized manner and application of their understanding.


The present paper will deal with the nature of concept mapping, steps of its construction with its uses for educators and learners and it application in general.


**Keywords:** Concept Mapping, meaningful Learning


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## \*Author's Correspondence

 Shivani Gupta

 Research Scholar, Department of Education, University of Lucknow

 gupta1shivani@gmail.com

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*To cultivate the memory we should confide to it only what we understand and love: the rest is a useless burden; for simply to know by rote is not to know at all.*

**- John Lancaster Spalding**

It is true that modern teachers & students both are deviating from the path of meaningful teaching-learning process in spite of the fact that it answers the questions of various theoretical & practical issues of Education and there is a need to understand the problems arising out of rote learning. A comprehensive & meaningful style of teaching-learning should be incorporated to tackle this emerging educational threat of rote learning. It is evident from the many studies and researches that it is a unavoidable problem of teaching-learning process & need a permanent solution in the form meaningful learning. There is an urgent need to shape an individual in to a meaningful learner by understanding the cognitive side of learner and using learning tools accordingly. Concept mapping can be an effective tool in this direction.

## Concept Mapping: A Teaching - Learning Strategy

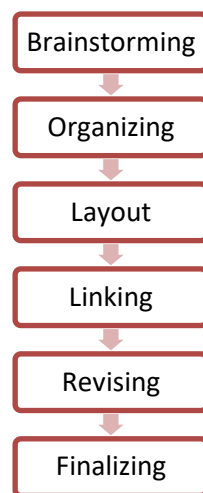
A strategy by which concepts are presented in a ranking from the most inclusive to general with the representation of connections and relations among them. The art of constructing a concept map is known as concept mapping. It was first developed by Joseph Donald Novak and his research team at Cornell University in the 1970s as a way of representing the science knowledge of students. Organization and hierarchical arrangement of key concepts from any one domain of knowledge is known as concept mapping. It is a technique that permits the students -

- to comprehend the connections between ideas by constructing a visual map
- to connect unlearnt knowledge from the previously learnt knowledge and;
- to organize knowledge in a way to allow it to be used or apply in future

Thus it is a system of teaching and learning that is both consistent with the structure of scientific knowledge and the psychology of learning.

### Stages in the Construction of a Concept Map

Many methods can be employed to construct the concept maps. The method that is employed by someone subject to the purpose of map construction. Concept Mapping can be done either by manually or with the help of software related with the specific tasks or general diagramming. The Concept Mapping method defined by Novak & Gowin (1984) involves following series of steps:-



#### Brainstorming Stage

In this stage -

- Select and read a chapter what you believe are important for the target group, highlighting the important points and ideas.
- After finishing reading and highlighting identify the key concept
- Decide the particular concept that is the most important.
- After identifying the main concept, move on to determine and note the other “general” concepts that have connections or relations with key concept.
- Generate the largest possible list.

#### Organizing Stage

- Place the most important and inclusive concept at the top.
- Work down by adding more specific concepts in a hierarchical manner
- Rearrange concepts and introduce new items by removing or replacing with others if necessary
- Considering those concepts in linking stage that fall into multiple groupings.

#### Layout Stage

- Grouping to the concepts in the light of their connections and interrelationships
- Layout it in hierarchical or circular form in which the most important concepts are in the top or at the centre.
- Connecting the concepts with a small sentence or group of clearly reflect the connections between them

- Rearrange the order freely in this stage at any point
- Be very creative and original at this stage.

**Linking Stage**

- Add the Link after the listing and ordering the key and associated concepts
- Join the concept with lines and arrows to make connections and show the relationship between connected concepts.
- Use linking words to label the arrow to highlight meaningful connections between the concepts.
- Be economical in formulating linking words to make map more effective
- Study the map again to see if there any other relevant relationship that should be illustrated between concepts on map . If such relationship exists , use cross links .

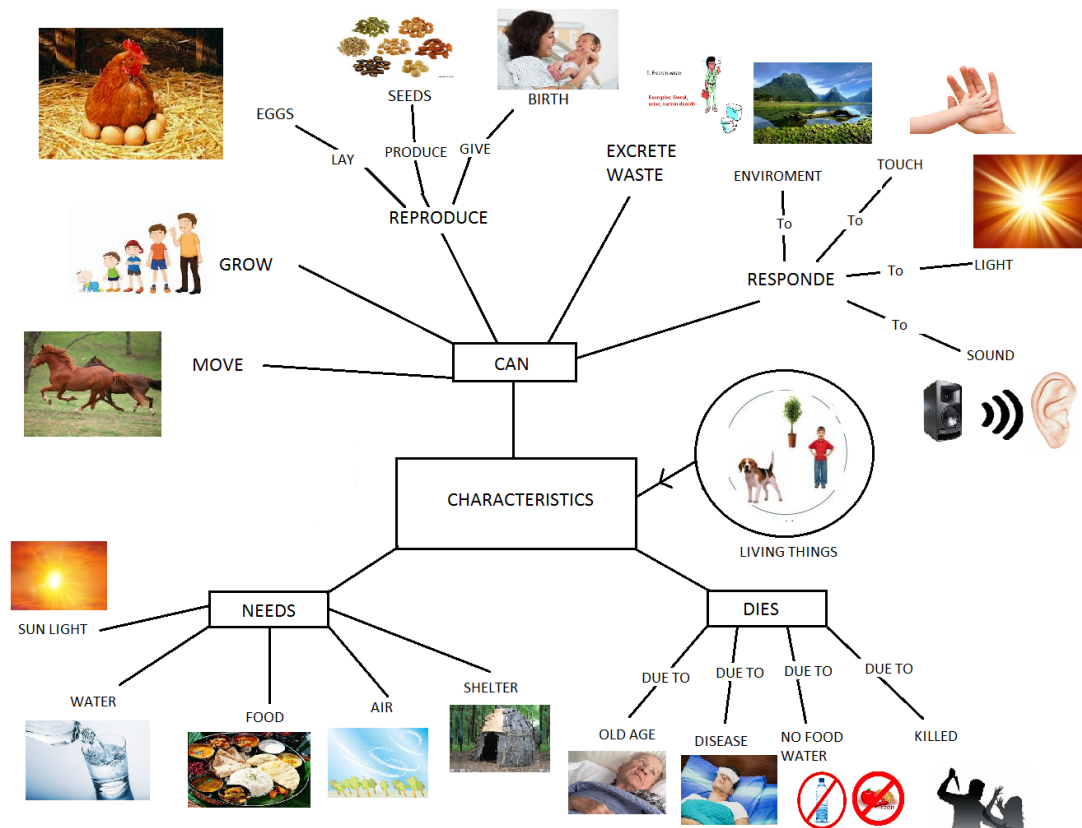
**Revising Stage**

- Evaluate the whole concept map carefully
- If any ambiguity is there, remove it
- Simplify it as much as possible
- Add coloring or different fonts to make it attractive .

**Finalizing the Concept Map**

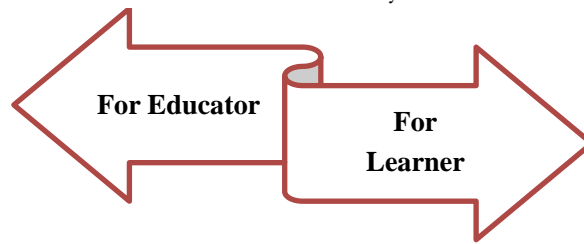
- After reviewing, concept map gets its final shape to serve the purpose.
- Be flexible and dynamic to make changes time to time to represent the progressive change in the understanding.

**An Example of Concept Map**



## Uses of Concept Mapping

Researches proved that the concept maps are being used effectively and successfully in educational settings with the positive results. Its use in the educational field can be broadly seen from two angles i.e.



### For Educator -

Educators can use concept maps;

#### (a) For Teaching:

- It also helps to formulate and achieving the specific learning objectives
- Concept maps makes teaching very comprehensive and systematic
- It helps the teacher to transform teaching into an active process by asking students to generate ideas instead of boring classrooms where students only listen the teacher
- It helps teacher to connect the new knowledge with the old one
- It develops confidence in teachers to transact the content comprehensively.
- Teachers can use concept mapping with cooperative and collaborating method of learning for students

#### (b) For Assessing:

- Teachers are able to evaluate the understanding of students in terms of taught concept
- Teachers can easily identify mistakes and areas of confusion
- By asking students to make or complete concept map, a teacher can assess their knowledge structure

### For Learner-

- It makes students able to make connections between key concepts and related specific concepts
- It makes the learner active and attentive
- It brings confidence in students and a kind of motivation when they make concept maps correctly.
- It makes leaning a joyful activity for the students
- It helps students to achieve higher level of learning objectives like analysis , synthesis, evaluation etc.
- It develops favorable approach for learning among the learner
- It facilitates students to observe any concept as a whole .

Enhancing a competency of 'learning to learn' and higher level cognitive skills is a lifelong practice. This cannot be achieved until strategies creating meaningful learning will not be incorporated in our educational setting with strong conviction and enthusiasm. It is the time for all educational stakeholders especially teachers to think, explore, discover and use concept mapping like new teaching strategy to develop a self motivation, readiness and eagerness in students to learn meaningfully.

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