Journal of East-West Thought
ISSN: *2168-2259 (online)*
(https://jetjournal.us/)
Volume 15, Issue 2, April-June – 2025 Special Issue 1

Impact Factor: 7.665, Peer Reviewed and UGC CARE I

CONCEPT MAPPING TECHNIQUE: AN INNOVATIVE PRACTICE FOR TEACHING AND LEARNING IN HIGHER EDUCATION

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1. Introduction :

There are various techniques used to learning various concepts. One of them is Concept mapping. The 'Concept mapping' technique is used for visualising relationships among different concepts. The Concepts are connected with labelled arrows. The relationship between concepts is articulated in linking phrases. It has subsequently been used as a tool to increase meaningful learning in the sciences and other subjects as well as two represent the expert knowledge of individuals and team in education.

2. What is a concept mapping?

Concept mapping is a technique for representing knowledge in graphs. Knowledge crafts are networks of concepts. Network consists of nodes and links. Nodes represent concepts and links represents the relationships between concepts. Concepts and links are labelled. Links can be non, uni, or by directional. Concepts and links may be categorised. They can be

1. Simply associative.
2. Specified.
3. Divided in categories such as casual or temporal relations.

Novax concept mapping technique:

The concept mapping technique was developed by Joseph de Novak at Cornell University. Novak concluded that meaningful learning involve the assimilation of new concepts and proposition into existing cognitive structure. Novax work was based on the theories of Asubel. Novak and Gowan (1984) have developed a theory of instruction that is based on as Wells meaningful learning principle that incorporates concept maps to represent meaningful relationships between concept and propositions.

A cognitive map is a kind of visual road map showing some of the pathways we may take to connect meaning of concepts.

According to Novak and Gowan concept map should be hierarchical. The more general, more inclusive concepts should be at the top of the map, and the more specific, less inclusive concepts at the bottom of the map.

Definition of Concept Mapping:

Alpert and Gruenberg (2001): A concept map is a graphical representation of persons (students) knowledge of domain.

The arrangement of major concepts from a text or lecture into visual arrangement. Lines are drawn between associated concepts and relationships between the connected concepts are

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named these concept maps reveal the structure and pattern in the material and provide a big picture (2006).

Purposes of concept mapping:

Plotnick (1997) lists five purposes of concept mapping.

1. To generate ideas (brainstorming)
2. To design a complex structure (long text hypermedia large websites etc)
3. To design a complex structure. To communicate complex ideas.
4. To aid learning by explicity integrating new and all knowledge.
5. To assess understanding or diagnose misunderstanding.

Concept mapping as a student learning tool:

1. To learn force material.

The student can use concept map to take class notes. Students can use concept maps to organise class notes or course material.

2. To integrate course content.

Students can use concept maps to connect material learn throughout the semester. It helps to integrate material across different courses.

3. To evaluate the students' knowledge

Concept mapping can faster a student's understanding of how different courses relate if they map the prominent concepts from different courses that they have taken (to evaluate changes in the students knowledge) and or at the end of the semester. Concept Mapping can be used to evaluate changes in learning over time and to evaluate end of course knowledge.

4. To provide feedback:

A concept map can provide feedback to the student so that he can be check his understanding of the material to see if any connections are missing.

How to create a concept map:

1. Identifying the important terms or concept that they want to include on your map.

There are three strategies to identify important concepts to include concepts on a concept map. And instructor generated list and students are not permitted to add their own concept. An instructor generated list but the students are allowed to add their own concepts to the list. An entirely student generated list of concept on the particular subject for notice concept mappers it is probably best to have the terms provided

2. Arrange concepts in a pattern that based represent the information.

One can choose to use hierarchical or non-hierarchical structure. The use of hierarchical or non-hierarchical maps may have different benefits in terms on pedagogy and assessment. Noise mappers may want to create their concept maps using post it notes so that they can easily change location of any concept before a final version is constructed.

3. Use circles and ovals to enclose and important term or concept with in a topic.

Each circle and oval should enclose only one term or concept. However terms can be more than one word.

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4. Use straight lines with arrows (single or double headed) to link terms that are related.

Each line should link only two concepts. However there is no limit to the number of links stemming from anyone Term. Pay close attention to the direction of the arrowheads on the linking line when labelling them. Each concept is defined by its relation to other concepts within the topic. relations include supersetl attribute part or hold.

5. Use a word or phrase of words as labels along the lines to designated the relationship between two connected terms.

Each line should have a label that describe the relationship between the two terms it connects.

Concept mapping in education:

Rational for concept mapping in education are based on several connected ideal. General writing to learn arguments like writing favours making connections or writing in a different genre favours Meta cognitive. Concept maps can prepare writing assist in exploration and reading and be used as planning tools more precisely concept maps can be used as a creativity brainstorming tool as note taking tool as planning tool for writing or project. Concept maps could and assessment tool for the teacher and or could be used as a teaching material.

Types of concept maps:

1. Spider: - Organised by placing the central theme or unifying factor in the centre of the map outwardly radiating sab themes surrounded the centre of the map.
2. Hierarchical: - Present information in a descending order of importance. The most important information is placed on the top. Distinguishing factors determine the placement of the information.
3. Flowchart: - Organisation information in a linear format.
4. Systems: - Organisation information in a format which is similar to a flowchart with the addition of inputs and outputs.

Meaningful learning contrasted with rote learning:

Rote learning:

a) Arbitrary verbatim non substance you incorporation of new knowledge in two cognitive structure.
b) No efforts to integrate new knowledge with existing concepts in cognitive structure.
c) Learning not related to experience with events or objects.
d) No effective commitment to relate new knowledge to free or learning.

Meaningful learning:

a) Non arbitrary no verbatim substantive to incorporation of new knowledge in two cognitive structure.
b) Deliberate effort to link new knowledge with higher order concepts in cognitive structure.
c) Learning related to experience says with events are objects.
d) Effective commitment to relate new knowledge to preor knowledge.

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How to make concept mapping a fruitful exercise:-

1. Student need to producing maps the more they do it the better they will understand the process.
2. Begin with simple topic using a small number of concepts.
3. Work through examples with the group modifying the map where necessary using post it notes can help to develop confidence and facilitates changes.
4. Emphasize importance of thinking about all possible links.
5. Emphasize importance of writing down the nature of the links.
6. Emphasizes that there is no single correct answer often more than one appropriate link.
7. Emphasize importance of using a rose and their direction in describing the proposition.

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