

Use of Concept Mapping in Nursing Education

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Abstract

Background : Concept mapping is a way of representing the organization of knowledge. It is a visual graphic, a web diagram for exploring knowledge and gathering and sharing information. "Concept maps are two dimensional representations of cognitive structures showing the hierarchies and the interconnections of concepts involved in a discipline or sub discipline." It consists of nodes or cells that contain a concept or question & links. The links are denoted by the direction with arrow or symbol. Labeled links explain the relationship between the nodes; where as the arrow marks describe the direction of the relationship.

Keywords : Concept; Mapping; Nursing Education

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HISTORICAL OVERVIEW

The technique of concept mapping was first used by Joseph D Novak and his team at Cornell University. The concept maps have their origin in the learning movement called constructivism.

EVIDENCE BASED PRACTICE

Taylor and Wros describe student's use of a software program to create a visual depiction of a nursing care plan. All and Haycke narrate Nsg student's unique usage of concept mapping in nursing theory. Mac Nell's article describes the benefits of concept mapping in course evaluation.

STEPS IN PREPARING CONCEPT MAP

SELECT : write down major terms, concepts, and key words about a topic.

RANK : identify the most general, intermediate and specific concepts and rank them as most abstract to most specific.

CLUSTER : Group the concepts by drawing circles

- v On top most general concepts
- v In the middle intermediate concepts
- v On bottom specific concepts

ARRANGE : place concepts into a diagrammatic representation by drawing lines between related concepts.

LINK AND LABEL : use lines and prepositions to link and label the concepts.

SELF ASSESSMENT : revise the concept map based on the appraisal.

PEER ASSESSMENT : get feedback from a peer group.

FINALIZE : finalize the concept map based on self and peer review and by critical analysis.

Tips used in preparation of concept maps

The following approaches are used to develop nodes and links [concept]

- ✓ Top down approach
- ✓ Working from general to specific
- ✓ Free association approach
- ✓ Brain storming nodes to developing links and relationships.
- ✓ Different shapes for nodes to identify different types of information.
- ✓ Different colored nodes to identify prior and new information.
- ✓ Cloud node to identify a question.
- ✓ Question node to gather information

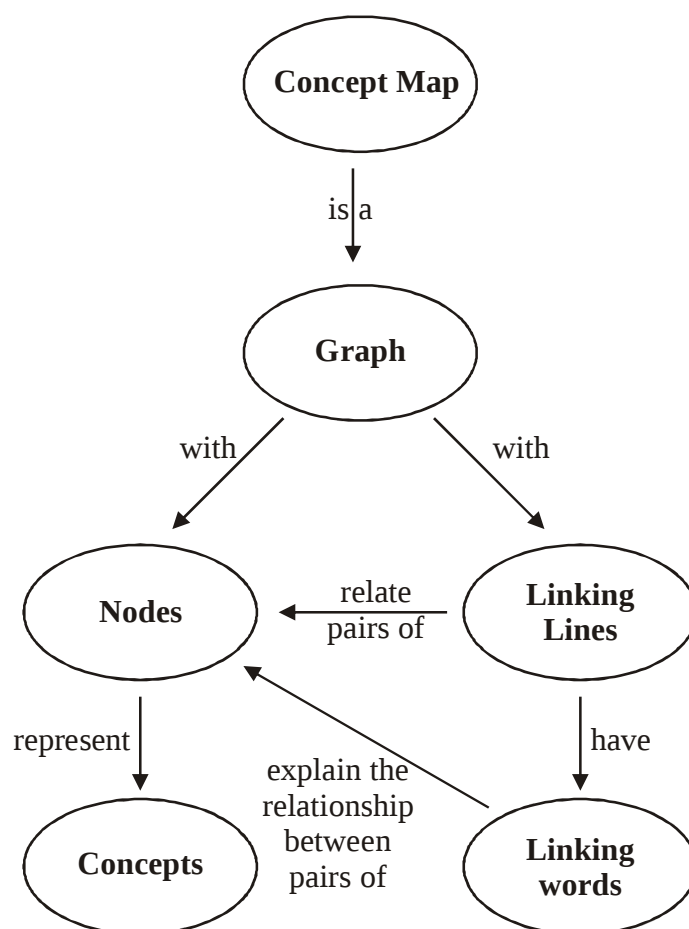
Options for developing concept maps

- ✓ Developed by faculty or student
- ✓ Open or closed structure
- ✓ Computer based concept maps

LIMITATION OF CONCEPT MAPPING

- ✓ If several concepts are included, it will be difficult for the beginning students to understand and comprehend the whole meaning and inter relationship between the facts.
- ✓ As key words and phrases are used it may be more challenging to interpret the student's main intent.
- ✓ A special soft ware is required to create, hence purchase price and training costs should be considered.
- ✓ Consumes more time in reading and responding
- ✓ Becomes a nightmare for those who do not like computer usage.
- ✓ Needs a clear grading rubric, otherwise it becomes subjective.
- ✓ Faculty need to establish the validity and reliability of their assessment tools.

DESCRIPTION ON CONCEPT MAP

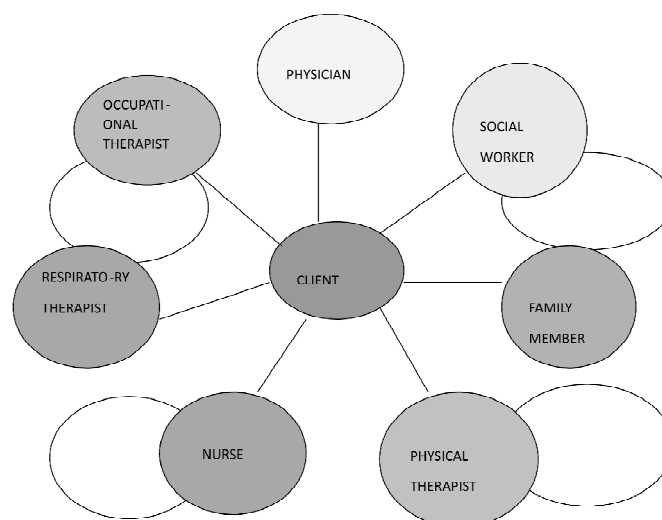


TYPES OF CONCEPT MAPS

1. **SPIDER CONCEPT MAPS** : The center theme or unifying factor is placed in the center of the map. The sub themes radiate outwardly to the center.

SPIDER CONCEPT MAP

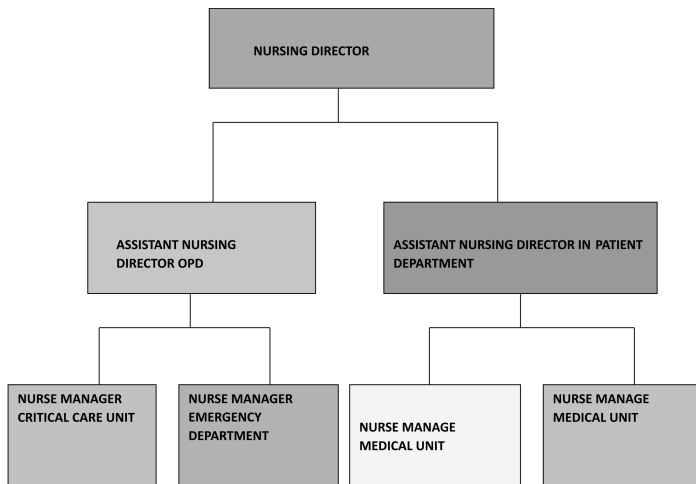
E.g. Client Centered Approach



2. **THE HIERARCHY CONCEPT MAP :** The information is presented in a descending order of importance. Distinguishing factors determine the placement of the information.

HIERARCHY MODEL

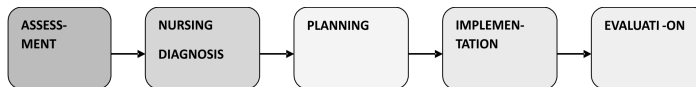
E.g. organizational chart



3. **THE FLOW CHART :** It organizes information in a linear format.

FLOW CHART

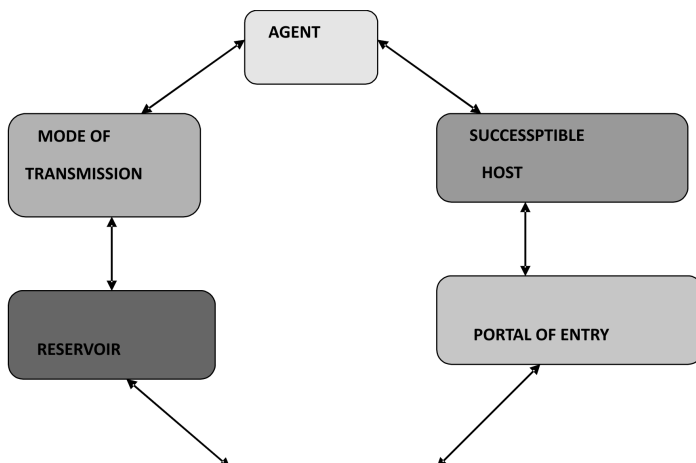
E.g. Steps in nursing process



4. **SYSTEMS CONCEPT MAP :** It is similar to flow chart with addition of "inputs" and "outputs".

SYSTEMS CONCEPT MAP

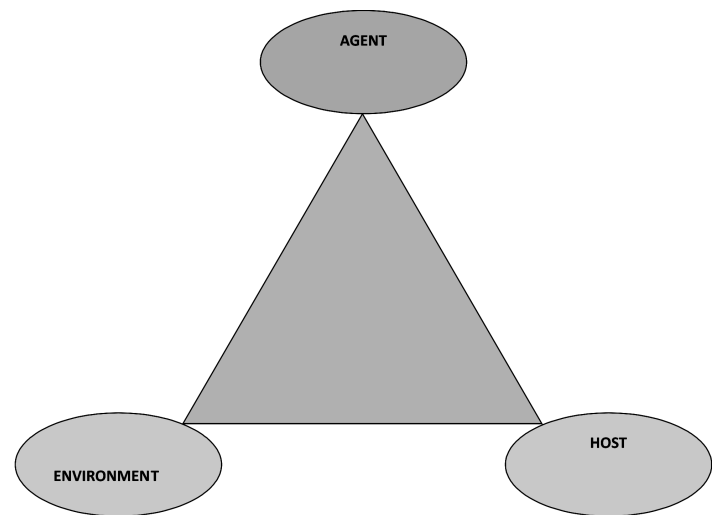
E.g. chain of infection



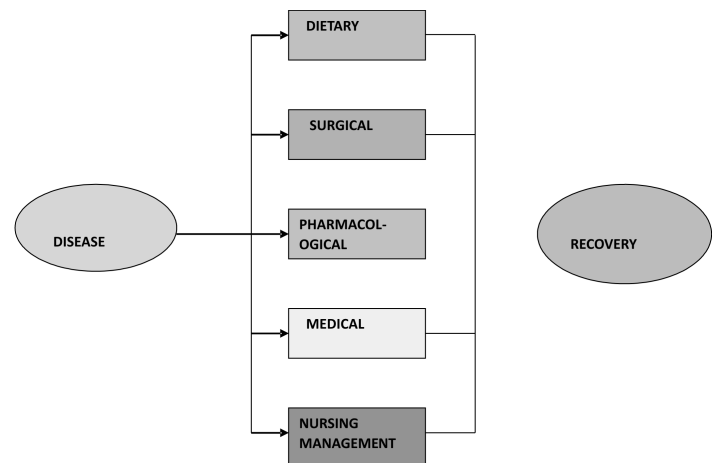
5. **PICTURE LAND SCAPE MAP :** The information is presented in a land scape format.
6. **MULTIDIMENSIONAL/3-D CONCEPT MAP :** These describe the flow or state of information or resources which are too complicated for a simple two-dimensional map.

THREE DIMENSIONAL MAP

E.g. epidemiological triad

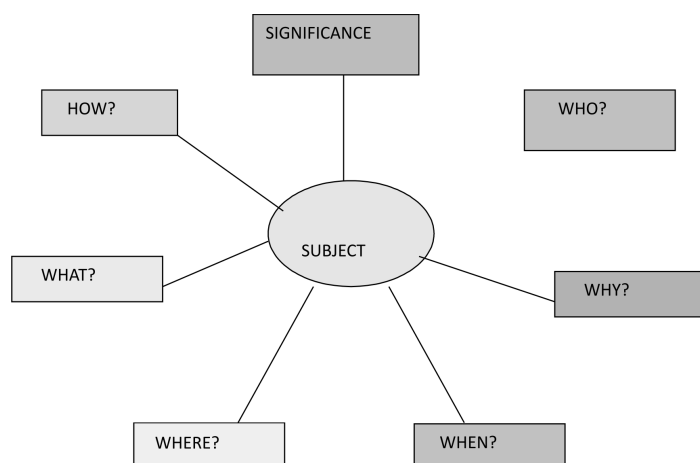


7. **MANDALA CONCEPT :** information is presented with in a format of interlocking geometric shapes. A "telescoping" factor creates compelling visual effects which focus the attention and thought processes of the viewer.
8. **PROBLEM SOLUTION MAP :** In this students will have a problem statement, definition, causes, and effects, leading to a possible solution. It can be more structured or less structured.



9. **PROCESS DEVELOPMENT MAP :** There is a beginning and an end with multiple steps and alternatives. Students are asked to create a process for accomplishing a task.
10. **PERSUASIVE ARGUMENT :**
Students present a persuasive argument. This can be converted to the word processing document.
11. **CHARACTERISTICS :** Free from of thinking, ask students to think characteristics of something. Can be used for descriptive type of work.
12. **RESEARCH TOPIC :** It is more descriptive ask students to think how, where, why, when research questions.

Research topic



13. **NARRATIVE STORY TYPE :** It has setting, characters, problem and solution. It is more traditional type.

ADVANTAGES OF CONCEPT MAPPING FOR NURSING STUDENTS :

- v Demonstrate cognitive synthesis skills with minimum of writing.
- v Categorize various ideas.
- v Clarify their thoughts.

- v Define new concept vocabulary.
- v Illustrate the relationship between ideas/ concepts.
- v Aid in creativity by stimulating generation of new ideas.
- v Enhance meta cognitive learning abilities to learn and think about knowledge.
- v Access prior knowledge.
- v Design structures or processes such as written documents, constructions, websites, web search, multimedia presentations.
- v Develop problem solving abilities.

ADVANTAGES OF CONCEPT MAPPING FOR NURSING FACULTY

- v Gain an insight how students understand the existing knowledge.
- v Broaden the faculty's understanding on how students develop the relationship between the facts.
- v Introduce the topic.
- v Help in formative assessment/ evaluation.

Conflict of interest : No

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References

01. Red Flower Publications
02. Nalini Ramakrishnan (2018). Concept Mapping in Nursing Education. Community and Public Health Nursing, 3(3), 99-101.
03. Concept Maps - Learning Center
04. Concept Mapping - A Tool For Organizing And Representing Knowledge
05. Friedman, Alon. (2010). The Use of Concept Maps in Knowledge Organization: An Analysis of Conference Papers. Knowledge Organization. 37. 43-50. 10.5771/0943-7444-2010-1-43.
06. Concept Mapping - an overview | ScienceDirect Topics