ITEC 1301

In-Class Concept Mapping Activity

Objectives: (1) Learn terminology associated with concept mapping. (2) Learn of software to create a digital concept map or concept hierarchy. (3) Create a concept map.

Outline of Tasks

Background Information

A concept map is a graphical cognitive tool that helps you visualize connections among concepts. Studying and learning how to use this tool is relevant to students in a course who are studying what computer Information Systems are all about. For one thing, there are application areas encompassed by information systems where concept mapping is very relevant, such as knowledge management. Many of you will encounter knowledge management systems in a future workplace. In addition, a concept map is a visualization of concepts. It is a diagram used to represent ideas and concepts. Visualization tools and diagrams are an important part of many information systems. There is special-purpose concept mapping software, but concept maps can also be created with a diagramming tool, and diagramming tools are used extensively in information systems application areas, including database development (entity-relationship diagrams), application development (class diagrams, e.g.), and networking (network diagrams). Thus, software tools used for concept mapping are relevant to ITEC 1301 Introduction to Computer Application Technology and other courses in a College of Technology programs of study.

Task 1: Decide how you are going to create digital concept maps for this class.

There are a number of ways you can create digital concept maps for this class. You will have to decide how you will do that. Here are some options.

Option 1: Use software provided in the College of Technology open computing labs. A software package that is available in the labs (116 T2 and 239 Cameron) is Microsoft Visio. Microsoft Visio is a diagramming tool with many diagram types available that support information systems and information technology activities and job functions. MS Visio can convert concept maps you draw into .jpg or other image files. The brainstorming template can be used to create a concept map.

Option 2: Install and use CMap Tools on your own computer. It is free for educational purposes. You can go to http://cmap.ihmc.us/ and follow the map there to download and install the software on your own computer. This software is not available in the College of Technology Computer Labs, to my knowledge. The CMap Tools software can convert maps into .jpg or other image format files as well.

Since CMap Tools is special purpose software for concept mapping, it may be easier to learn to use than MS Visio. But MS Visio has a familiar Microsoft interface – so that eases the learning curve for the tool. Also MS Visio is real tool used by businesses and industries. CMap Tools was created originally for educational research, and it was made available for free because it became popular in educational settings. It is not used widely commercially to my knowledge.

Option 3: Purchase and install software on your own computer. There are many, many packages you can purchase. Most of these offer a 30-day evaluation option where you can install the software and use it for free for 30 days. For example, Inspiration is available at low cost to students (go to http://www.inspiration.com/).

Option 4: Use a web based tool such as MindMeister. Go to mindmeister.com to see if you would like to use it.

Option 5: Do a search for mind mapping software or concept mapping software and find a tool you would like to use. Many tools being sold offer free 30-day trials of their products. For example, go to www.mindgenius.com and download their free tool and try it for 30 days.

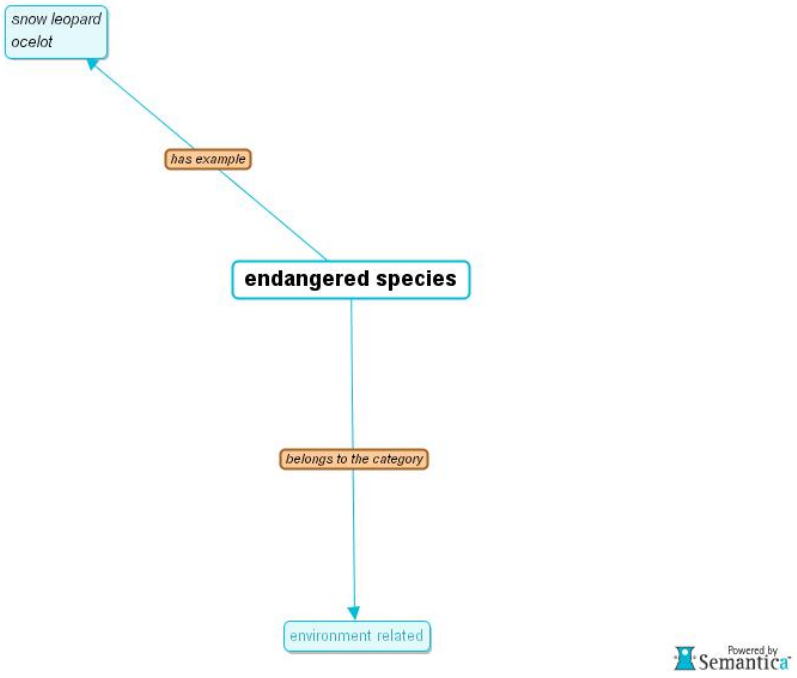
Task 2: Create a Random Thoughts map.

Quickly make a list of 10 nouns for 10 random thoughts you have. Do this in no more than 2 minutes.

Open Microsoft Visio and choose the brainstorming template.

Try to create a concept map that connects the 10 nouns with *named relations* in a concept map. A named relation means you write a verb or verb phrase for the link connecting two concepts (nouns) that describes how the two nouns are related. Figure 1 shows three concepts and a category linked with named relationships.

Figure 1 More Concepts in a Different Category



There are some standard verbs and verb phrases used in concept maps to name the relationships between nouns. Dr David Jonassen, on page 71 of his book *Computers as Mindtools for Schools,* includes in his Figure 4.8 Possible Links Between Nodes, a list of phrases that might be used for link words. Here is a recreation of that table that you may find useful as you create your map.

Figure 2 Possible Relationship Words to Specify Relation Between Nodes (from Dr. Jonassen's Book)

Symmetric Links	
Is opposite of	Is same as
Has sibling	Is independent of
Has synonym	Is equal to
Is similar to	Is opposed to
Asymmetric Links	
Inclusion Relations (typically the most common)	
Has part/is part of	Contains/is contained in
Composed of/is part in	Includes/is included in
Has example/is example of	Has instance/is instance of
Characteristic Relations (Next most common)	
Has characteristic/is characteristic of	Has attribute/is attribute of
Has property /is property of	Has type/is type of
Has kind/is kind of	Defines/is defined by
Describes/is described by	Models/is modeled by
Denotes/is denoted by	Implies/is implied by
Has advantage/is advantage of	Has disadvantage/is disadvantage of
Has function/is function of	Has size is size of
Is above/is below	Is higher than/is lower than
Action Relations	
Causes/is caused by	Uses/is used by
Solves/is solution for	Exploits/is exploited by
Decreases/is decreased by	Increases/is increased by
Destroys/is destroyed by	Impedes/is impeded by
Influences/is influenced by	Determines/is determined by
Enables/is enabled by	Absorbs/is absorbed by
Acts on/is acted on by	Consumes/is consumed by
Converted from/converted to	Designs/is designed by
Employs/is employed by	Evolves into/is evolved from
Generates/is generated by	Modifies/is modified by
Originates from/is origin of	Provides/is provided by
Requires/is required by	Regulates/is regulated by
sends to/receives from	
Process Relations	
Has object/is object of	Has output/is output of
Has result/results from	Has subprocess/is subprocess of
Has process/is process of	Organizes/is organized by
Has input/is input to	Proposes/ is proposed by
Depends on/has dependent	Concludes/is concluded by
Temporal Relations	
Has step/is step in	Has stage/is stage in
Precedes/follows	Coincides with (a symmetrical relation)

So … now it's your turn. Try to connect your list of 10 random thoughts with named relations in a concept map.

Put your name on your map as a title, for example you might write "Kevin Wong's Random Thoughts Map" as a title if your name is Kevin Wong.

Task 3 Save the Map and Print it and Turn it In Or Upload to Blackboard

When you are finished with your map, do three things with it. Create a .jpg image file of it by saving it in an image format using the Save As dialogue box in MS Visio. Also save the visio file. Both files should be saved to your Desktop or your file share or a portable memory device (or email it to yourself). Finally, as directed by the instructor, either print the map and turn in the piece of paper, or upload the image file and visio file to the assignment drop box in Blackboard.

Be sure and save your work for later, as I may ask you to include it as part of a deliverable for another assignment.