

## Concept Mapping in Introduction to Statistics

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### References:

Institute for Human and Machine Cognition (IHMC) Cmap Tool Home Page:  
<http://cmap.ihmc.us/Index.html>

Joseph Novak's web page: <http://www.ihmc.us/users/user.php?UserID=jnovak>

Presentation link can be found on

[http://pavo.coginst.uwf.edu/servlet/SBReadResourceServlet?rid=1064009710027\\_1483270340\\_27090&partName=htmltext](http://pavo.coginst.uwf.edu/servlet/SBReadResourceServlet?rid=1064009710027_1483270340_27090&partName=htmltext)

Click "information links" under the first concept to watch the presentation.

The idea of Concept Maps was developed in 1970's by Joseph Novak. It is based on theory of knowledge and theory of learning.

### Theory of knowledge

- All knowledge is built up from Concepts and Propositions
- Concepts combine to build proposition
- Concepts – A perceived regularity in events or objects, or records of events or objects, designated by a label. words or symbols
- Propositions: Two or more concepts combined to form a statement about something: a unit of meaning. Relationship of concepts.

### Theory of Learning

- Concept maps is a tool to represent the structure of knowledge
- concept maps are context dependent
- Concepts maps are based on the idea that storage of knowledge is not a linear string

Concepts Maps are only one way to represent knowledge. Other ways can be simple flowcharts, maps, etc.

### New epistemological thinking

Toward:

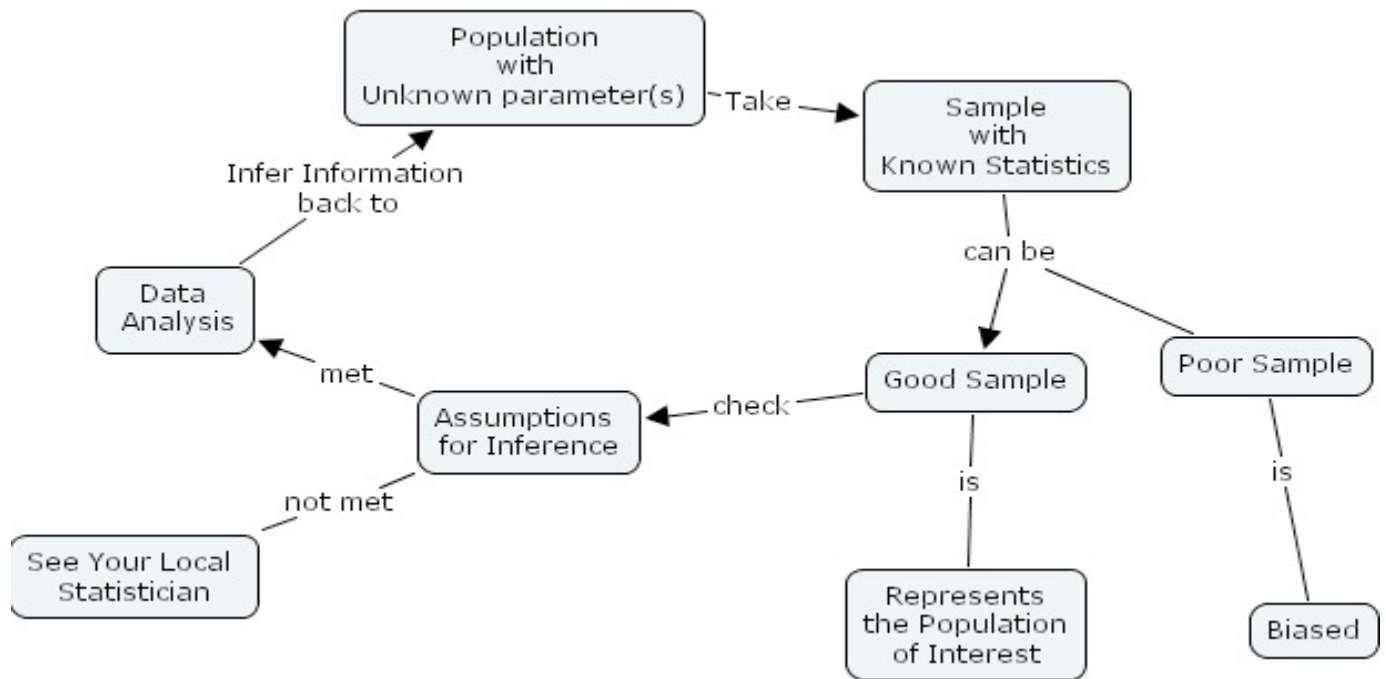
- constructivist epistemology which holds that knowledge is a human construction and evolves over time.
- Each person must construct their own knowledge in their head. You can't give it.

Away from:

- Positivist epistemology holds that knowledge derives from empirical observation and is “unfettered” by varying human ideas over time.
- Knowledge is discovered. It will last forever.

Key idea: Each person must construct her/his own meanings for concepts and propositions from experiences over time, building her/his knowledge structure.

An Example, dealing with Data Analysis (3<sup>rd</sup> Concept Map of this handout.) THERE CAN BE MORE THAN ONE CONCEPT MAP for this information. This map was useful to this student.



### CMap Software

- FREE, FREE, FREE, FREE, FREE!!!!!!!
- EASY TO USE!
- Did I mention that it is free!

The CmapTools client is free for use by anybody, whether its use is commercial or non-commercial. In particular, schools and universities are encouraged to download it and install it in as many computers as desired, and students and teachers may make copies of it and install it at home. (Commercial companies that install their own CmapServer do need to get a separate license for a CmapTools client that will talk to the commercial version of the CmapServer).

Long download using a modem