

# Analytical thinking using concept mapping



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# Thinking

- What is thinking
- What do we do when we are 'thinking'
- Thinking is a 'skill'
- School – a place to learn skills of learning
  - Listening, Speaking, Reading and Writing
  - **Thinking** an important 'learning to learn'
  - College – place to become a 'thinker'
  - Content can become outdated / irrelevant
  - Skill remains useful life long



- **Ideating** – identifying ideas / concepts / sub concepts
- **Categorizing** – bringing ideas together in clusters for increased meaning making
- **Ordering** / sequencing ideas as required
- **Elaborating** – building hierarchies
- **Enriching** – adding relevant information to each idea
- **Visualizing** – representing information in different formats
- **Sharing** – for feedback and further enrichment (collaborative thinking)



# Making your concept map

- Adding concepts / ideas (nodes) / sub concepts (sub nodes)
- Categorizing (moving / drag drop)
- Arranging / Ordering (moving up/down, side)
- Emphasizing (font size, colour of edge, node)
- Elaborating – adding nodes
- Enriching – adding notes
- Visualizing – adding image
- Saving, Publishing – Exporting to text document, PDF, image to create a resource – by thinking and for thinking



## Build your concept map

- Chose your topic (interest/desire to learn/work area)
- Identify information about the topic
- Concepts, sub concepts
- Relationships (conceptual linkages)
- New ideas
- Facts and opinions
- Judgements
- Divergent views
- Controversial ideas / views
- Role of teacher/ role of education



## How to build collaborative concept map

- Talk to friends on the topic for their ideas
- Search web for information
  - read Wikipedia page on the topic/category
  - Search web pages
  - Read articles
  - Think of topic from different perspectives – sociological, economic, biological, physical, philosophical, geographic, historical ... etc etc
  - Identify categories and then all sub nodes for a category
  - Try to comprehensively identify sub nodes for each node



# Uses of concept mapping in education

- First step of making a lesson plan (make it for every lesson plan)
- Writing an essay or article or reflective journal
- Document a discussion, brainstorming, a talk,
- Explain or review a book or a movie
- Critically thinking through a complex and contentious topic and come to conclusions
- Exporting to other formats (document with a TOC)



# Concluding *thoughts* :-)

- Thinking is not 'natural' any more than swimming or driving, it needs to be taught
- Like any skill, it needs lots of practice – more practice, better we get
- Individual thinking / reflection and collective reflection both necessary
- Collective thinking / reflection to work for a better society – a need of democracy, something the school can build!
- Critical thinking – most important skill today, must for a better society.
- Failure of democracy = failure to build critical thinking in students in schools

