

Using Topic Maps for Integrating ePortfolio with eCurriculum

Cambridge, 2005



Cerpus (cerebellum and hippocampus)



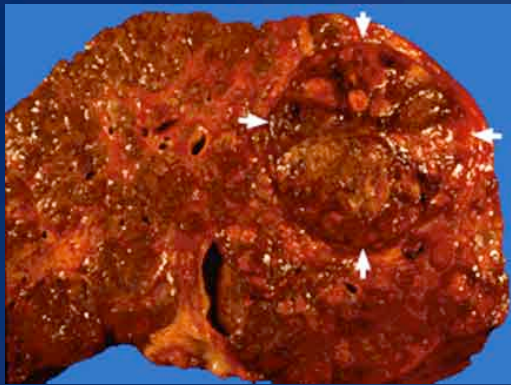
the information jungle

- information - loads
- knowledge - ?
- wisdom - out of scope

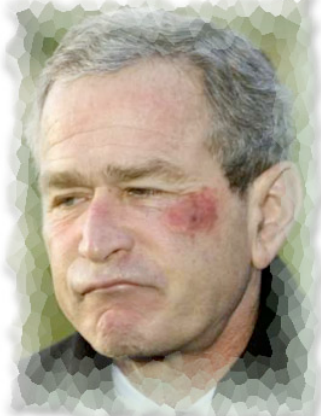
“Information is not knowledge, and knowledge is not wisdom”

- Frank Zappa

information about alcohol:

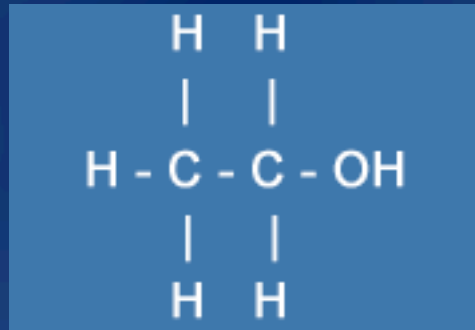


100% Alc./ Vol.



Government Warning:
Consumption of alcoholic beverages impairs your ability to drive a car, operate machinery, or run a country; and may cause blackouts, serious falls, and injuries.

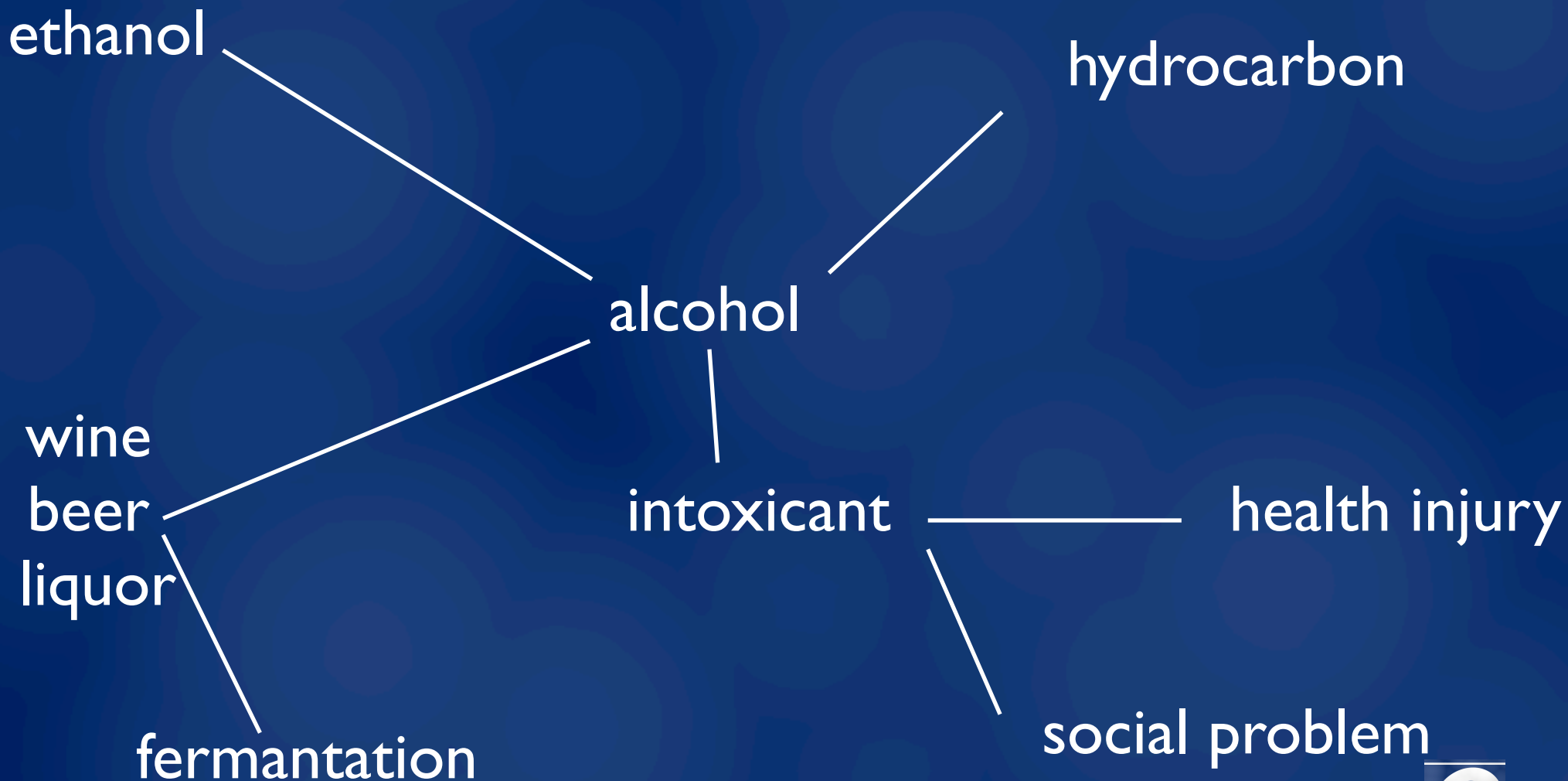
Touché



<http://www.bordeaux-city.com>

<http://www.mack.no>

a mind map about alcohol



theory of knowledge

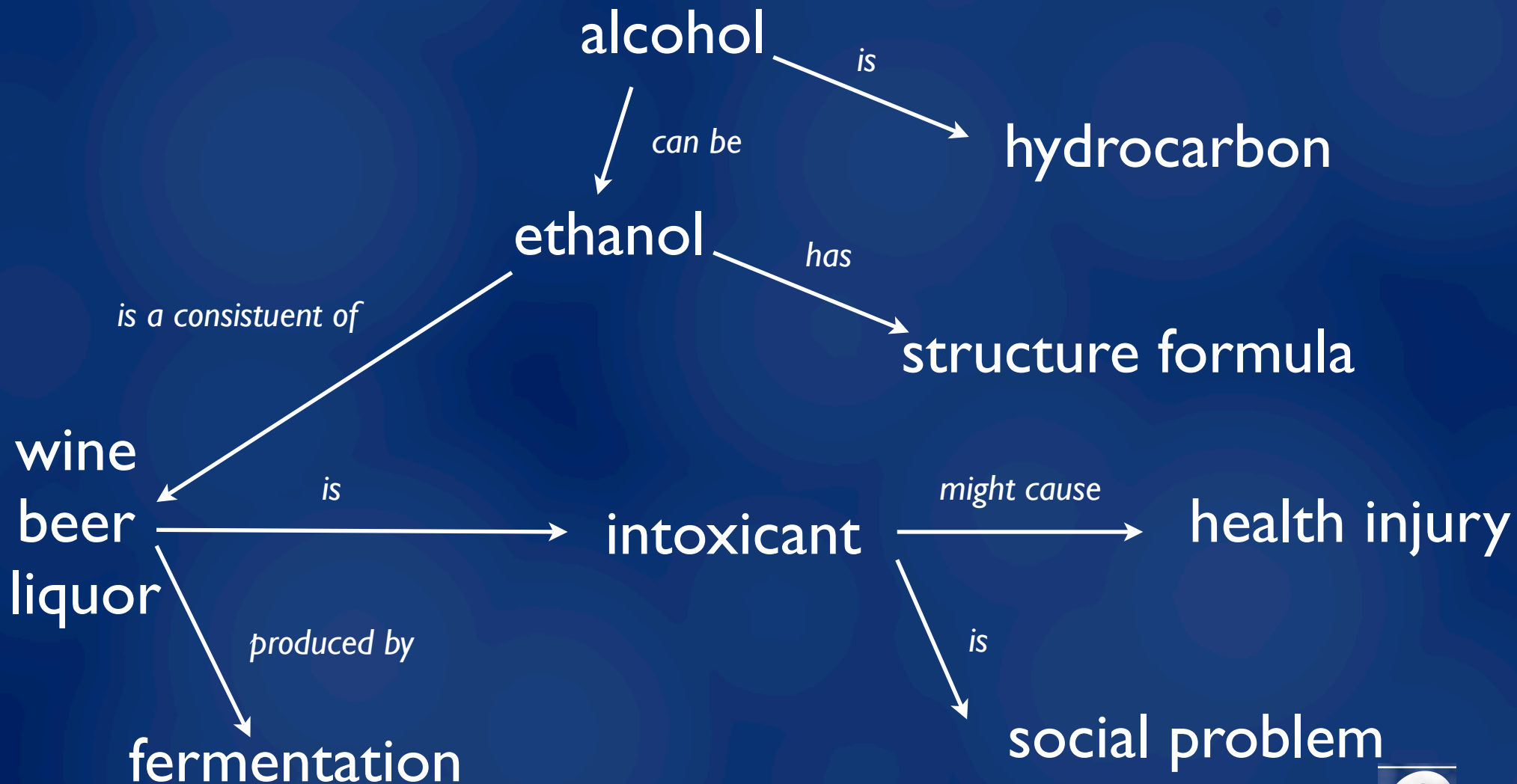
J. Novak: Concept maps

- the building blocks of knowledge:

-  concepts

-  propositions

a concept map about alcohol



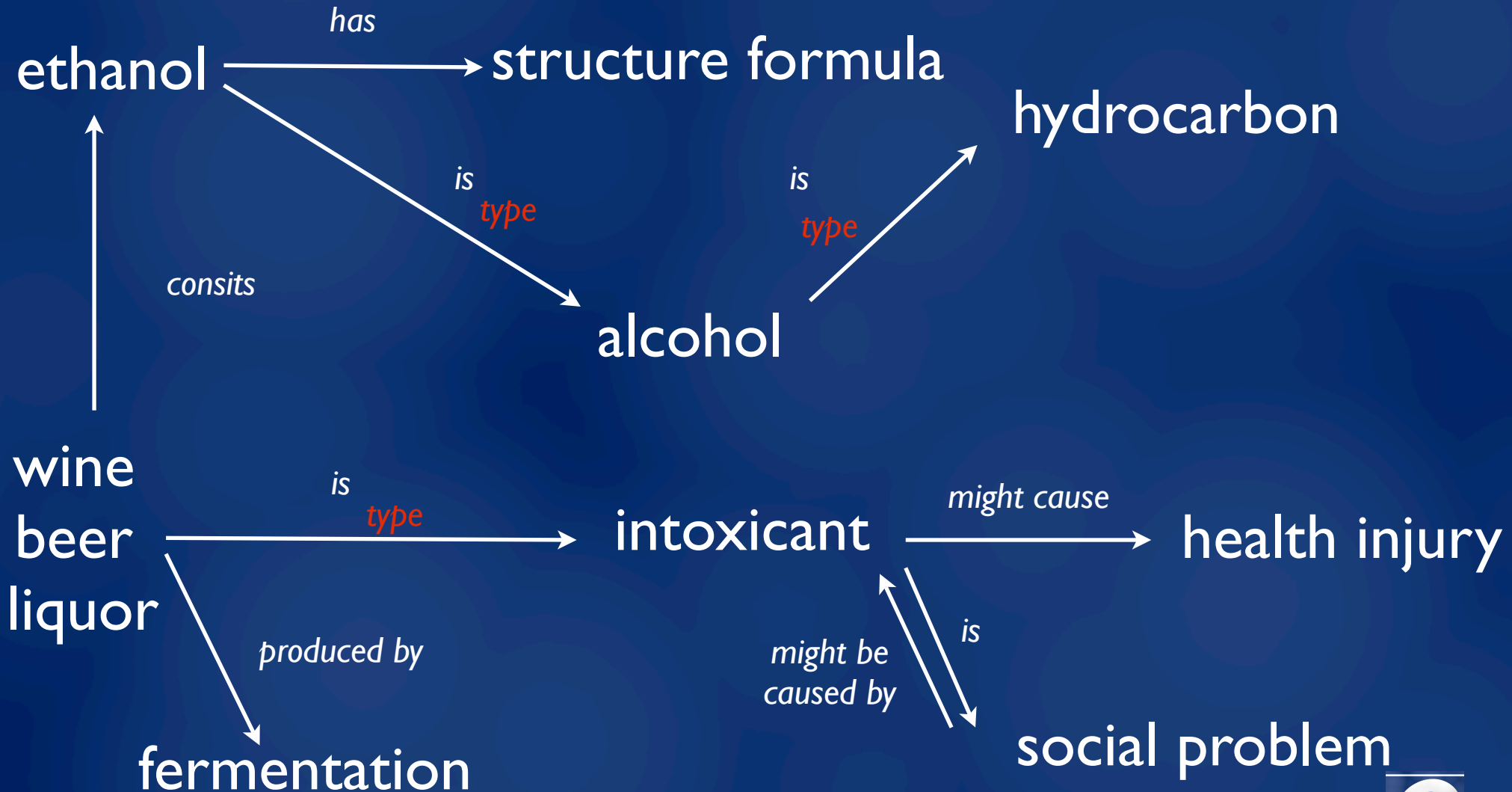
theory of learning

- Ausubel: The single most important factor influencing learning is what the learner already knows
- rote vs meaningful learning
 - ☑ new knowledge is processed together with existing knowledge
 - ☑ new knowledge structures are built

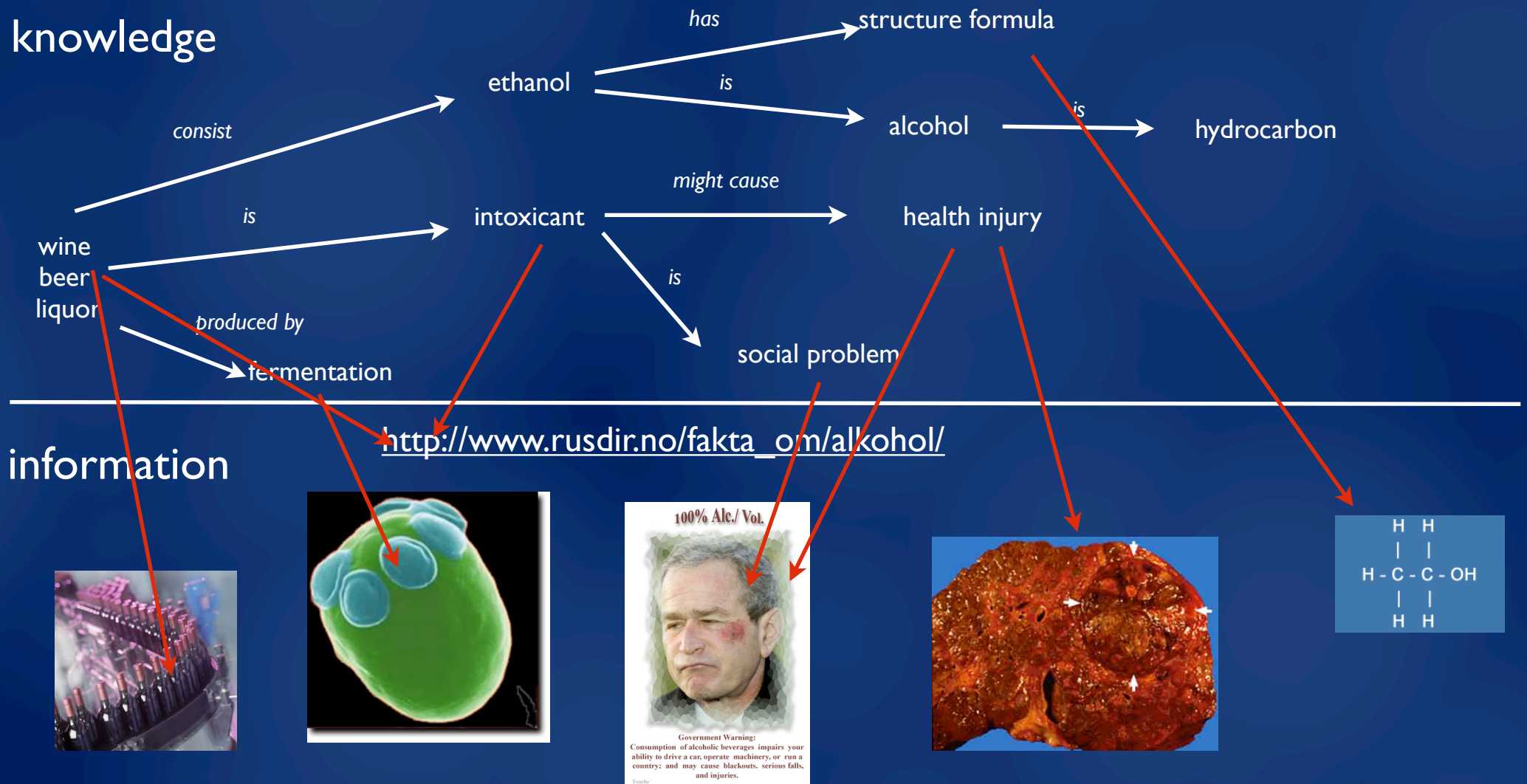
Topic Maps

- open standard (ISO) for structuring information and knowledge using
 - ☑ topics
 - ☑ associations
 - ☑ occurrences
- Topic Maps have built-in support for relating new knowledge to existing one (associations), hence supporting meaningful learning

a topic map about alcohol:



topic maps: the two-layered model



The new Norwegian curriculum for K12 school

- more focused on goals
- goals (smallest units of meaning) expressed as topics in a Topic Map
- The goal consists of two topics
 - learning topic (what to learn *about*)
 - competency topic (what *kind of competency* about the learning topic)

Topic Maps for Learning (TM4L)

- a framework for digital course libraries
- supports development of ontology-aware repositories of learning materials
 - semantics
 - resources
 - context

BrainBank Learning

- web application
- the learner is working and storing information electronically, organised as a topic map
 - topics (concepts)
 - associations (propositions)
 - resources attached to topics (text files, images, sound clips, video clips, URIs, etc.)
 - discussion (kind of resource)



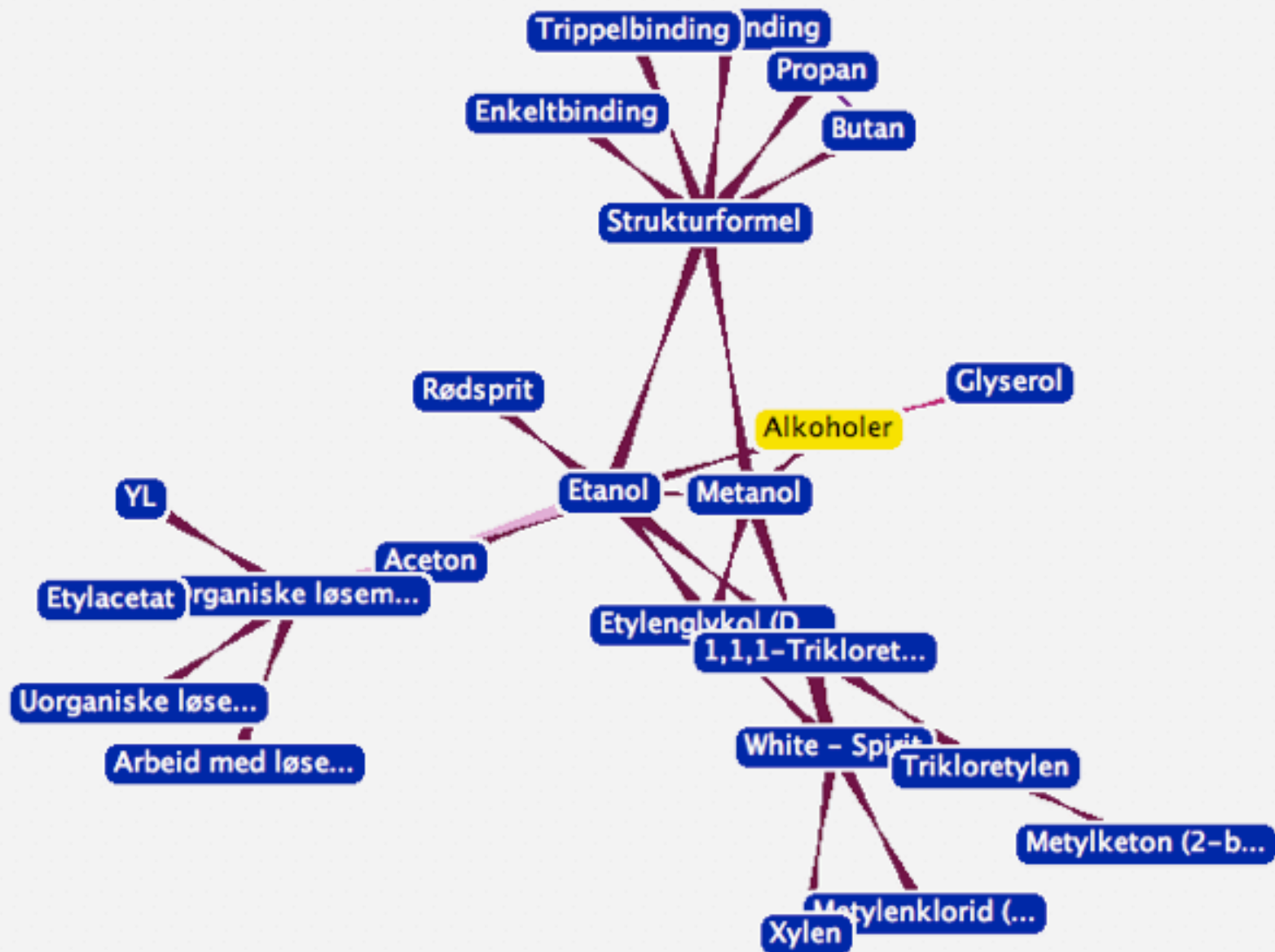


Enter search expression

Search

Clear

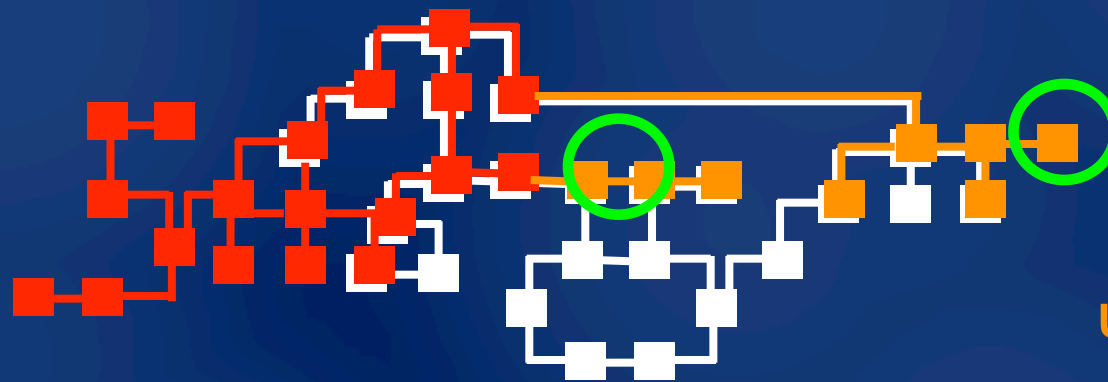
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positioning for meaningful learning

learner's pre-acquired knowledge (BrainBank)

courseware ontology
or
teacher's ontology



unexpected association

misunderstanding?

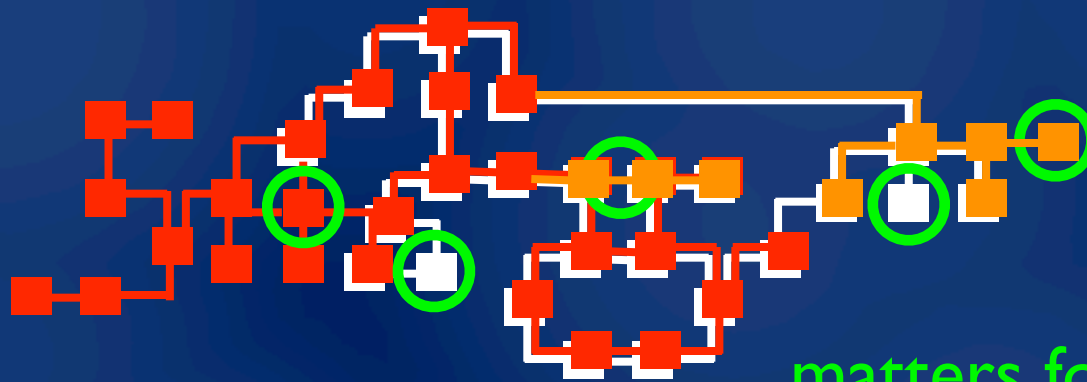
learning activities

collaborative learning

BrainBank for Learner 1

BrainBank for Learner 2

BrainBank for Learner 3



matters for collaborative

- reflection
- discussion
- decision

pedagogical goals

- **constructivism**

- ✓ *the learner builds his/her own knowledge repository*

- **the active learner**

- ✓ *active, enterprising and independent pupil/student*

- **awareness of learning**

- ✓ *acquire good learning strategies and ability to reflect on their own learning*

- **adaptive learning**

- ✓ *the learner gets a personal digital 'area' where he from his own level can construct and maintain knowledge*

- **lifelong and lifewide learning**

- ✓ *systematic building of knowledge in a well founded digital standard*

- **usability**

- ✓ *simple screens and intuitive, easy to understand workflow*

the BrainBank learning strategy

- learners build their own concept-based ePortfolios as an integrated part of the learning process
- the ePortfolio is used to process information into knowledge by relating it to pre-acquired knowledge
- the ePortfolio helps the learner to keep track of both knowledge (concepts and relations) and information (links to content, discussions etc)