Interdisciplinary learning through concept mapping: lessons learnt from the ENEPLAN experience

Concept mapping can foster interdisciplinary learning, which can be improved by organizing a contest, deciding on a quick assessment method, and providing feedback to students. Training teachers and students is crucial for this process.

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Beirut, 13th-14th September 2018
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Concept mapping can foster interdisciplinary learning, which can be improved by organizing a contest. Training teachers and students can help in sharing basic concepts. Deciding on a quick assessment method and providing feedback to students are also important.

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Concept mapping

"The fundamental idea [...] is that learning takes place by the assimilation of new concepts and propositions into existing concept and propositional frameworks held by the learner."  
Novak et al., 2008

Graphical tool showing concepts and their relations
Represents a person's cognitive structure about a given topic
Conveys meaningful learning
"The fundamental idea [...] is that learning takes place by the assimilation of new concepts and propositions into existing concept and propositional frameworks held by the learner"

*Novak et al. 2008*

Graphical tool showing concepts and their relations

 Represents a person's cognitive structure about a given topic

Conveys meaningful learning
can foster
Interdisciplinary learning

“Interdisciplinary teaching and concept mapping both require the ability to create connections and construct various themes and subject fields.”

8-day workshop targeted at 50 international students
4 students' groups working in parallel sessions
Concept mapping exercises of increasing difficulty
“Interdisciplinary teaching and concept mapping both require the ability to create connections and combine various themes and subject fields”

*Mikser et al. 2008*

8-day workshop targeted at 90 international students

4 students' groups working in parallel sessions

Concept mapping exercises of increasing difficulty
can be improved by
Training teachers and students

It takes time to recognize concept mapping in teaching/learning strategy
Elmore et al, 2010

Explaining fundamentals of concept mapping
Achieving consensus on what makes a good map
Avoiding excessive standardization
It takes time to incorporate concept mapping as teaching/leaning strategy

*Daley et al. 2010*

Explaining fundamentals of concept mapping

Achieving consensus on what makes a good map

Avoiding excessive standardization
Sharing basic concepts

Concept mapping is useful to highlight misconceptions in students' previous knowledge.
Hay et al., 2009

Promoting open discussions on basic concepts
Levelling students' knowledge on the first day
Concept mapping is useful to highlight misconceptions in students' previous knowledge

Hay et al. 2008

Promoting open discussions on basic concepts

Levelling students' knowledge on the first day
Organizing a contest
Concept mapping often seems trivial to beginners

Daley et al. 2010

Adding reasons for increased dedication and commitment
Deciding on a quick assessment method
Many time-consuming assessment methods have been proposed for concept maps
Rice et al. 1998, Moni et al. 2008, Prats 2014, Sibilla 2017...

Agreeing on quick evaluation criteria
Asking students to publicly present their maps for evaluation
Providing feedback to students

Concept mapping is a dynamic tool able to reveal students’ knowledge and misconceptions. Dick et al., 2009.

Tutoring students during exercises

Fostering collective learning through open discussions.
Concept mapping is a dynamic task, able to reveal students' knowledge and misconceptions

*Daley et al. 2010*

Tutoring students during exercises

Fostering collective learning through open discussions
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Concept mapping can foster interdisciplinary learning, which can be improved by organizing a contest. Training teachers and students, sharing basic concepts, deciding on a quick assessment method, providing feedback to students.

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