Concept Maps: Definition, Structure, and Scoring

Concept maps are a schematic representation of a network of concepts or ideas related by linking words (propositions).

- Concept maps provide learners and instructors alike with opportunities to share, discuss, and revise understanding and meaningful integration of concepts.
- Figure 1 demonstrates the definition, theoretical framework, and some applications of concept maps:

![Concept Maps Diagram]

Scoring

A number of scoring methods can be used to evaluate and assess concept maps. One of the most frequently used scoring methods is outlined here and demonstrated in Supplemental Digital Appendix 1 at http://links.lww.com/ACADMED/A489.

- Novak and Gowin have developed a scoring method that is mainly quantitative and structural; it is based on points that are assigned to linking words (or propositions; e.g., “states that” or “linked by”), hierarchical levels (most general to less general concept), cross links (links across concepts of different levels; dashed or broken arrows), and examples. Supplemental Digital Figure 1 demonstrates this scoring formula.
- The criteria for the scoring formula are:
  a. Proposition: Is it valid? 1 point for each
  b. Hierarchy: Does the map show hierarchy? 5 points for each level of hierarchy
  c. Cross Links: Do cross links connect one level of hierarchy to another? 10 points each
  d. Examples: Does the map show examples? 1 point each

Instructors can use concept maps as learning or assessment tools; instructors can identify learners’ misunderstandings, provide specific feedback, clarify content, and ultimately visualize learners’ construction of connections and knowledge networks.

References:

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