

Table 3. How cmapping tasks fits into and employs many of the revised Bloom's taxonomy (Anderson and Krathwohl, 2001) categories. The grey section highlights the cognitive dimensions that Mizraie et al. (2008) determined were characteristic of meaningful learning.

		Knowledge Dimension			
		Factual	Conceptual	Procedural	Metacognitive
Cognitive Process Dimension	Remember	Recall the definition of a concept	Suggest relevant concept to answer focus question	Recall how to construct a cmap	Identify cmaps as a way to retain information
	Understand	Generalize from a perceived regularity to label a concept	Classify concepts into groups	Paraphrase steps in constructing a cmap	Make a prediction based on cmap
	Apply	Progressive differentiation – adding more specific concepts to a general concept	Reposition and refine cmap structure and make cross-links	Apply rules (e.g., concepts in circles, linking phrase on line, etc.) to construct a cmap	Decide whether the cmap is helpful
	Analyze	Select the most appropriate 15-25 concepts to answer focus question	Compare your cmap to others		Self-reflect on which concepts are needed for consideration
	Evaluate	Rank order concepts	Assess relevance of propositional phrases and concept organization		Reflect on how well the cmap addresses the focus question
	Create	Add resources (e.g., web links, videos, pictures) to your cmap to support	Fitting new insights in relationship with prior knowledge & Integrative reconciliation – restructure of conceptual understanding (cross-linking between different domains)		Negotiate meaning with other learners & Construct a knowledge model from several cmaps