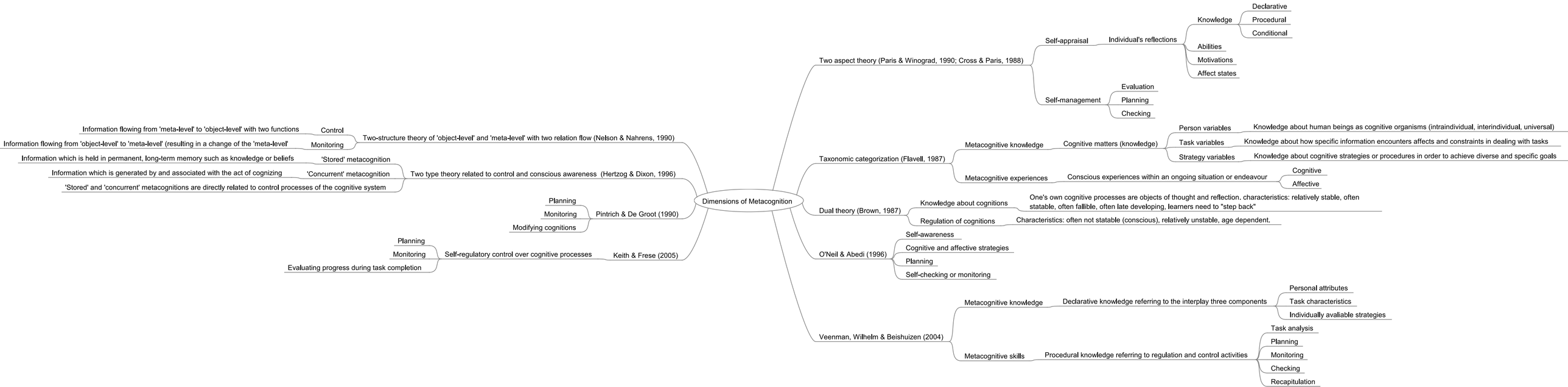
Dimensions of Metacognition
Two aspect theory (Paris & Winograd, 1990; Cross & Paris, 1988)
Self-appraisal
Individual's reflections
Knowledge
Declarative
Procedural
Conditional
Abilities
Motivations
Affect states
Self-management
Evaluation
Planning
Checking
Taxonomic categorization (Flavell, 1987)
Metacognitive knowledge
Cognitive matters (knowledge)
Person variables
Knowledge about human beings as cognitive organisms (intraindividual, interindividual, universal)
Task variables
Knowledge about how specific information encounters affects and constraints in dealing with tasks
Strategy variables
Knowledge about cognitive strategies or procedures in order to achieve diverse and specific goals
Metacognitive experiences
Conscious experiences within an ongoing situation or endeavour
Cognitive
Affective
Dual theory (Brown, 1987)
Knowledge about cognitions
One's own cognitive processes are objects of thought and reflection. characteristics: relatively stable, often statable, often fallible, often late developing, learners need to "step back"
Regulation of cognitions
Characteristics: often not statable (conscious), relatively unstable, age dependent.
O'Neil & Abedi (1996)
Self-awareness
Cognitive and affective strategies
Planning
Self-checking or monitoring
Veenman, Wilhelm & Beishuizen (2004)
Metacognitive knowledge
Declarative knowledge referring to the interplay three components
Personal attributes
Task characteristics
Individually avaliable strategies
Metacognitive skills
Procedural knowledge referring to regulation and control activities
Task analysis
Planning
Monitoring
Checking
Recapitulation
Two-structure theory of 'object-level' and 'meta-level' with two relation flow (Nelson & Nahrens, 1990)
Control
Information flowing from 'meta-level' to 'object-level' with two functions
Monitoring
Information flowing from 'object-level' to 'meta-level' (resulting in a change of the 'meta-level'
Two type theory related to control and conscious awareness (Hertzog & Dixon, 1996)
'Stored' metacognition
Information which is held in permanent, long-term memory such as knowledge or beliefs
'Concurrent' metacognition
Information which is generated by and associated with the act of cognizing
'Stored' and 'concurrent' metacognitions are directly related to control processes of the cognitive system
Pintrich & De Groot (1990)
Planning
Monitoring
Modifying cognitions
Keith & Frese (2005)
Self-regulatory control over cognitive processes
Planning
Monitoring
Evaluating progress during task completion