

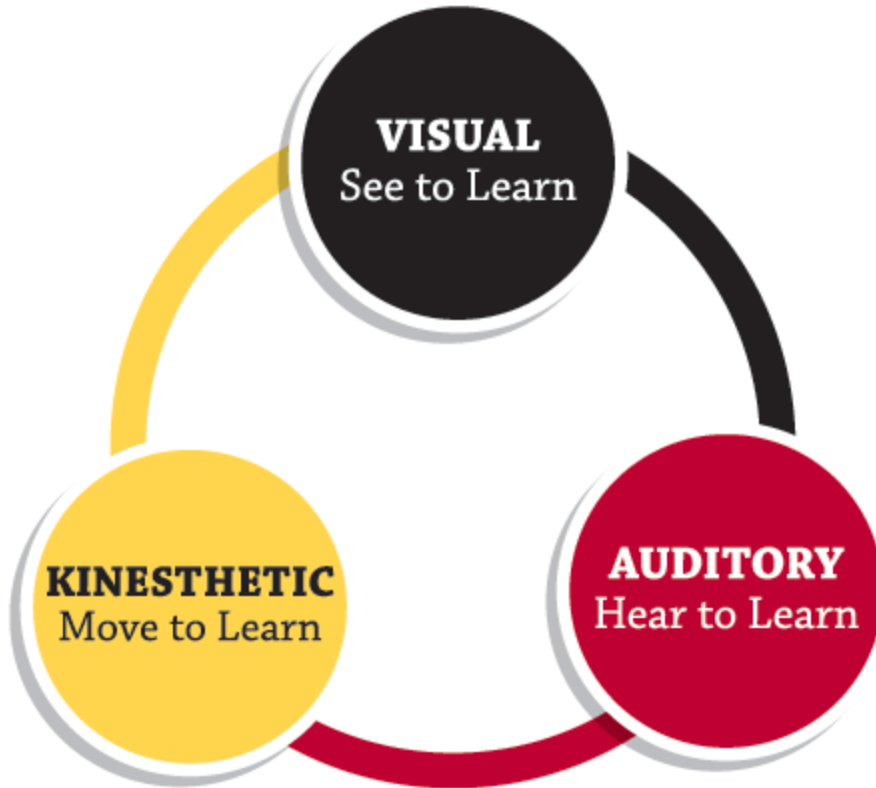
Mindsets and Metacognition



Metacognition is, put simply, thinking about one's thinking. More precisely, it refers to the processes used to plan, monitor, and assess one's understanding and performance.

Metacognition includes a critical awareness of a) one's thinking and learning and b) oneself as a thinker and learner.

~We must teach not only our content, but also how to study and learn our content (in our field, in our class).~



MULTIPLE INTELLIGENCES

A Field Guide, by Marek Bennett

(A)	LINGUISTIC			
	READ	WRITE	TALK	LISTEN
(+)	LOGICAL-MATHEMATICAL			
	QUANTIFY	THINK CRITICALLY	REASON	EXPERIMENT
(eye)	VISUAL-SPATIAL			
	SEE	DRAW	VISUALIZE	COLOR
(hand)	BODILY-KINESTHETIC			
	BUILD	ACT	TOUCH	DANCE
(musical note)	MUSICAL			
	SING	RAP	DRUM	PLAY
(two faces)	INTERPERSONAL			
	SHARE	TEACH	COLLABORATE	INTERACT
(smiling face)	INTRAPERSONAL			
	CONNECT TO SELF	MAKE AUTHENTIC CHOICES	REFLECTION	
(leaf)	NATURALIST			
	EXPERIENCE	CONNECT TO LIVING THINGS	CARE FOR	EXPLORE

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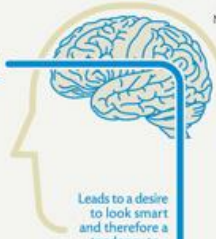
After Thomas Armstrong, MULTIPLE INTELLIGENCES IN THE CLASSROOM

TWO MINDSETS

CAROL S. DWECK, Ph.D.

Graphic by Nigel Holmes

Fixed Mindset
Intelligence is static



Leads to a desire to look smart and therefore a tendency to...

CHALLENGES

...avoid challenges

OBSTACLES

...give up easily

EFFORT

...see effort as fruitless or worse

CRITICISM

...ignore useful negative feedback

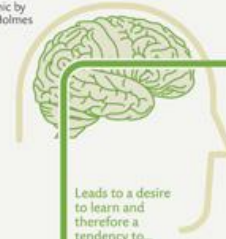
SUCCESS OF OTHERS

...feel threatened by the success of others

As a result, they may plateau early and achieve less than their full potential.

All this confirms a **deterministic view of the world.**

Growth Mindset
Intelligence can be developed



Leads to a desire to learn and therefore a tendency to...

...embrace challenges

...persist in the face of setbacks

...see effort as the path to mastery

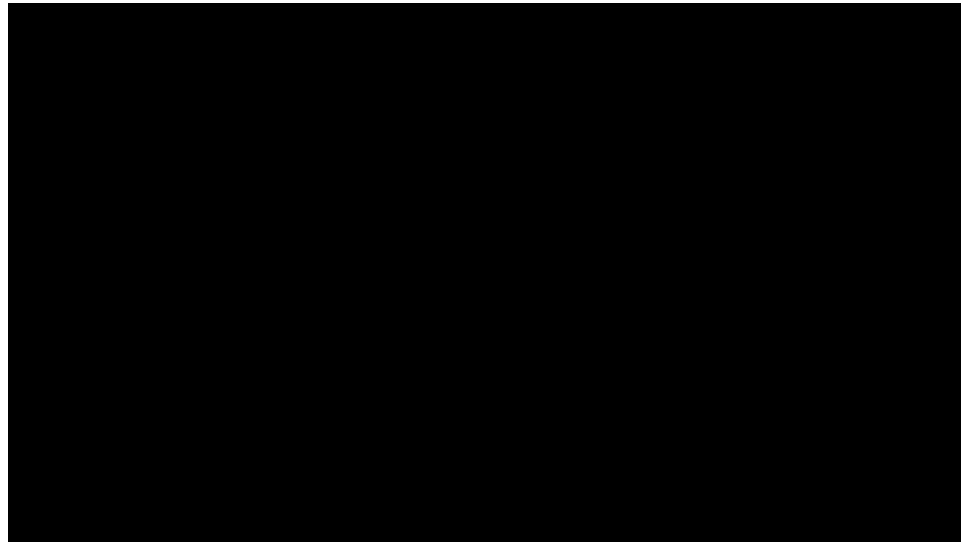
...learn from criticism

...find lessons and inspiration in the success of others

As a result, they reach ever-higher levels of achievement.

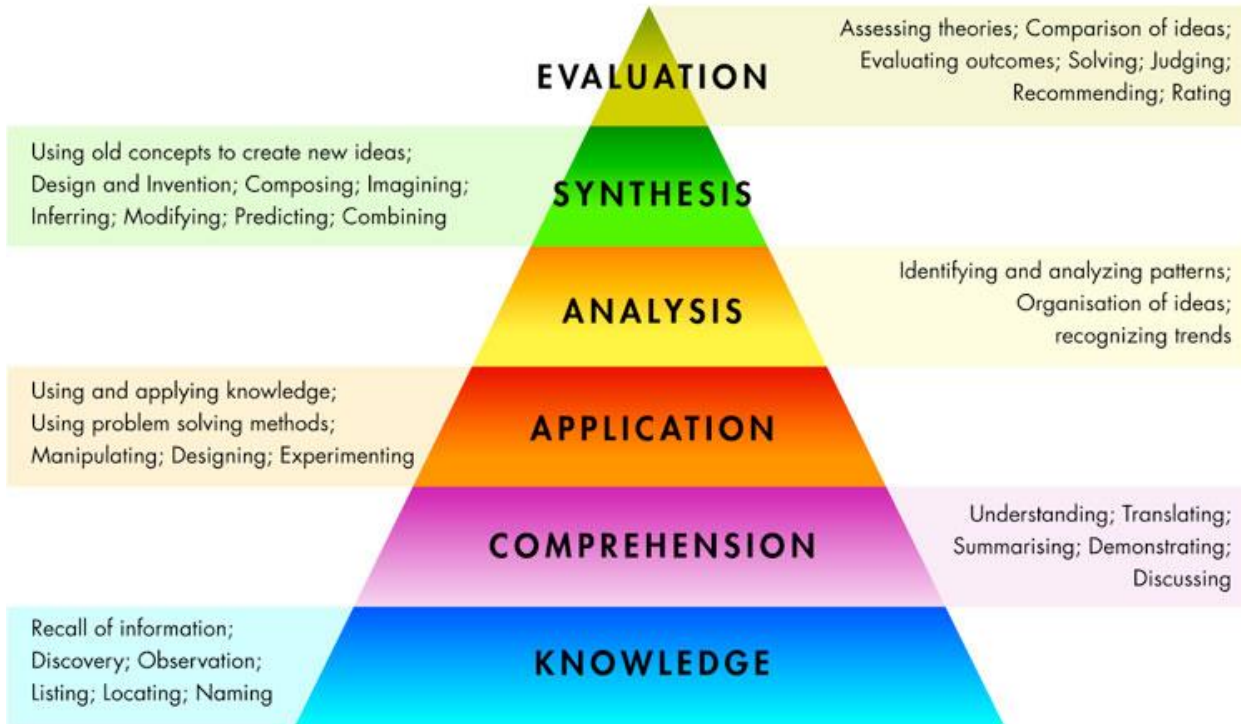
All this gives them a **greater sense of free will.**

Growth Mindset





BLOOMS TAXONOMY



BLOOM'S TAXONOMY and Costa's Levels of Questioning

The Student will...

Knowledge (Remembering) Learn specific facts, ideas, vocabulary; remembering/recalling information or specific facts.	Comprehension (Understanding) Ability to grasp the meaning of material; communicate knowledge; understanding information without relating it to other material.	Application (Applying) Ability to use learned material in new and concrete situations; use learned knowledge and interpret previous situations.	Analysis (Analyzing) Ability to break down material into its component parts and perceive interrelationships.	Synthesis (Creating) Ability to put parts together to form a new whole; use elements in new patterns and relationships.	Evaluation (Evaluating) Ability to judge the value of material (statement, novel, poem, report, etc.) for a given purpose; judgment is based on given criteria.
Introduction of knowledge Level One—the basement		Practice knowledge learned Level Two—the ground floor		Demonstrates mastery of knowledge learned Level Three—the penthouse	
By doing the following... collect, copy, define, describe, examine, find, group, identify, indicate, label, list, locate, match, name, omit, observe, point, provide, quote, read, recall, recite, recognize, repeat, reproduce, say, select, sort, spell, state, tabulate, tell, touch, underline, who, when, where, what		By doing the following... acquire, adopt, apply, assemble, capitalize, construct, consume, demonstrate, develop, discuss, experiment, formulate, organize, manipulate, relate, report, search, show, solve novel problems, tell consequences, try, use, utilize		By doing the following... alter, build, combine, compose, construct, create, develop, estimate, form a new..., generate, hypothesize, imagine, improve, infer, invent, modify, plan, predict, produce, propose, reorganize, rewrite, revise, simplify, synthesize	
				appraise, argue, assess, challenge, choose, conclude, criticize, critique, debate, decide, defend, discriminate, discuss, document, draw conclusions, editorialize, evaluate, grade, interpret, judge, justify, prioritize, rank, rate, recommend, reject, support, validate, weigh	

Some benefits of deliberate attention to metacognition

- Helps establish learning's relevance
- Transferability of learning
- Engagement in the moment
- Empowers students

~We must teach not only our content, but also how to study and learn our content (in our field, for example, and in our unique class).~

How do we do it?

- Teach them the word metacognition.
- Mention it explicitly and repeatedly.
- Ask them to tell us why we are doing what we are doing.
- Give students occasions to reflect independently and together as a group.
- Make assignments that cause students to reflect metacognitively (in writing, when possible).

Become a WICOR ninja and train legions of WICOR ninjas.



ALP and Metacognition

- Backward design/scaffolding
- Writing assignments about learning preferences
- Reading about mindsets
- Teach students to use Costa's Questions
- Create a shared metacognitive vocabulary reflected in all assignments (e.g. use Bloom's terms in writing prompts)

