



Teaching for Deep Conceptual Understanding: Instructional Strategies That Move Theory Into Practice

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Dr. Fran Prolman



Essential Questions

- How do I plan lessons that move students from rote and recall response to higher level thinking skills that result in deep understanding and long term retention?



Essential Questions

- How do I expand my repertoire of quality questioning strategies to advance thinking, learning and achievement; to engage all students; to make connections; and to teach students to be question generators?



Essential Questions

- How do I incorporate Habits of Mind and Visible Thinking Tools in my daily repertoire?

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Essential Questions

- What instructional strategies might I consider to foster inquiry, problem-based learning and higher-level thinking?

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An Even Bigger Essential Question

- What habits of mind do I want to be consciously modeling and promoting for my students as they embrace deep conceptual understanding?

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Paradigm Shift

- Metacognition
- Higher Level Thinking
- Deeper Understanding of Content
- Transfer of Knowledge
- Making Meaning and Conceptual Understanding

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Research

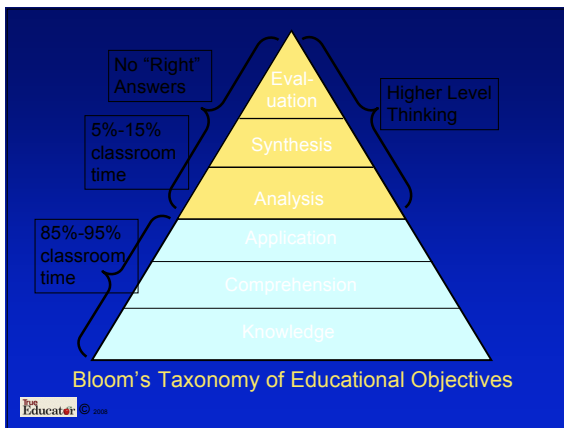
- David Perkins
- Jay McTighe & Grant Wiggins
- Heidi Hayes Jacobs
- Bena Kallick and Arthur Costa
- Robert Marzano
- Jackie Walsh & Beth Sattes

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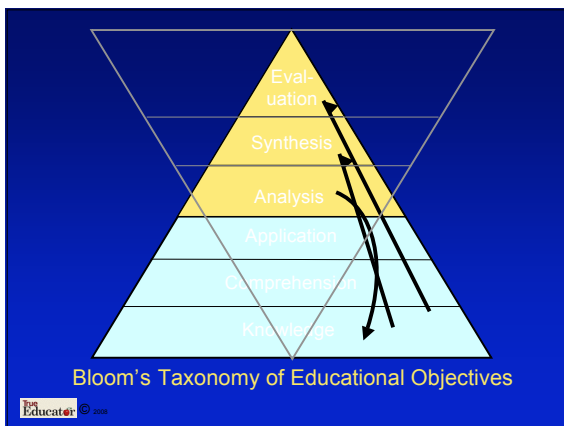
Strategies

- Visible Thinking
- Questioning Strategies, e.g.,
 - S.P.A.C.E.
 - Reciprocal Teaching
 - S.C.A.M.P.E.R.
 - Metacognitive Anchoring
 - Pair Problem Solving
 - Question/Question

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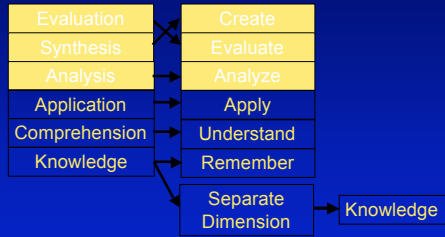


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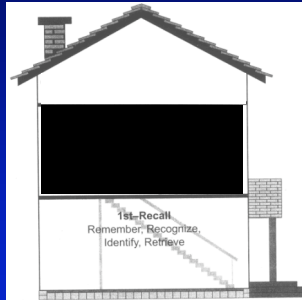
Summary of Structural Changes to Bloom's Original Model



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ADAPTED FROM: Lorin W. Anderson, David R. Krathwohl, *A Taxonomy for Understanding and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Allyn & Bacon, Boston MA. © 2001 by Pearson Education. Reprinted by permission.

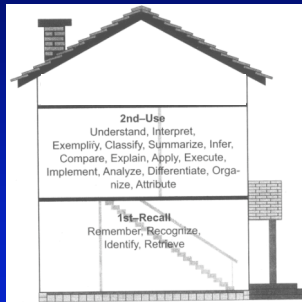
Recall, Use, Create: A Visual Depiction



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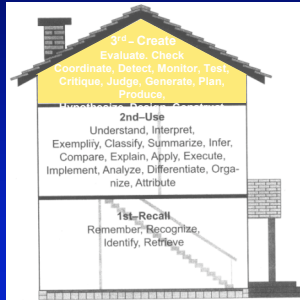
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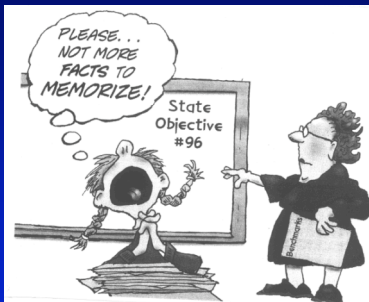


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THINKING VERBS FOUND IN STANDARDS

- | | | |
|-----------|------------|-----------|
| ANALYZE | EXPLORE | RESPOND |
| APPLY | DIAGRAM | SUPPORT |
| CLASSIFY | IDENTIFY | REPRESENT |
| COMPARE | INTERPRET | VISUALIZE |
| CONNECT | JUDGE | REASON |
| CONTRAST | OBSERVE | VERIFY |
| DESCRIBE | ORGANIZE | SOLVE |
| DISCUSS | PARAPHRASE | SUMMARIZE |
| ELABORATE | PREDICT | SIMPLIFY |



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Theory to Practice

Now we need some strategies for putting theory to work in the classroom.

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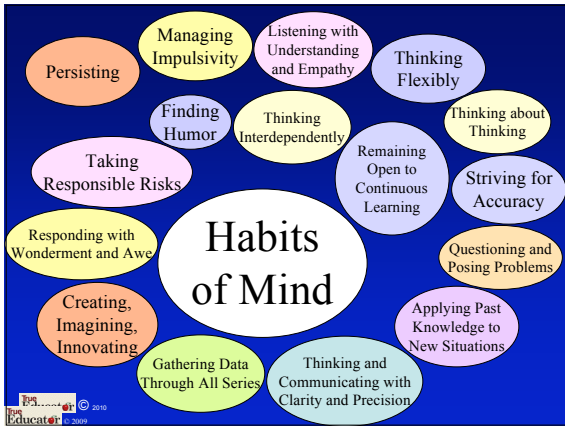
In what ways does this situation remind you of the way your students and your organization deals with problem solving?

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TONY WAGNER'S SEVEN SKILLS THAT STUDENTS DESPERATELY NEED	16 HABITS OF MIND
1. Problem-solving and critical thinking;	Persisting ; Gathering data through all Senses; questioning and problem posing
2. Collaboration across networks and leading by influence	Thinking interdependently; managing impulsivity; finding humor
3. Agility and adaptability;	Thinking flexibly; remaining open to continuous learning
4. Initiative and entrepreneurship;	Taking responsible risks; thinking about thinking (metacognition)
5. Effective written and oral communication;	Communicating with clarity and precision; listening with understanding and empathy
6. Accessing and analyzing information;	Applying past knowledge to new situations; striving for accuracy
7. Curiosity and imagination.	Creating, imagining, innovating; responding with wonderment and awe

Wagner, Tony. *The Global Achievement Gap: Why Even Our Best Schools Don't Teach the New Survival Skills Our Children Need--And What We Can Do About It*. New York: Basic Books, 2008.



Visible Thinking Tools



David N. Perkins, Harvard Graduate School of Education

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Evidence of Thinking

- Do students know how to perform the thinking skills?
- Can students describe the steps in the thinking process?
- Can they correctly label the skills when they use them?
- Do they apply the skills spontaneously when solving problems?

Reciprocal Teaching

- Predicting
- Questioning
- Clarifying
- Summarizing

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- S**ilence
- P**araphrasing
- A**ccepting nonjudgmentally
- C**larifying
- E**xtending

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- S**ubstitute
- C**ombine
- A**dapt, adopt
- M**odify, maximize, minimize
- P**ut to other uses
- E**liminate
- R**everse order

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Reflection

- I am currently fostering deep conceptual understanding when I . . .

Reflection

- Some additional ways I can foster deep conceptual understanding include . . .

Notes, Ideas, Reactions, and Pictures



Professional Development for True Success in Education

Fran Prolman, Ed.D

President

Senior Consultant

Phone: 703.759.1059

FAX: 703.759.1060

P.O Box 563, Great Falls, VA 22066

fran@trueeducator.com
