Teaching for Effective Learning

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Learning Goals

- Transfer
- Rote Learning and Meaningful Learning
- Bloom's Taxonomy
- Reflective Teaching
- Effective Teaching Methods
- Asking Good Questions

Effective Learning

- There are two conditions for effective learning:
  1. **Retain:** Remember what is learned in the future
  2. **Transfer:** Use what is learned to guide thinking and behavior in a new situation

Transfer

- **Transfer**: Effect of previous learning on new learning.
- Research has found that transfer is very difficult in the traditional classroom situation
  - Learning in a traditional classroom seldom transfers to behavior outside of the classroom.

Promoting Transfer

- Explain how the content relates to everyday experiences in which the learning should transfer
- Give illustrations and examples to help students see how knowledge transfers to everyday experience
- Give learning activities/assignments that are related to how learners will use the content in practice
- Ask application questions to help students transfer (refer to Bloom's Taxonomy)

Meaningful vs. Rote Learning

Meaningful Learning	**Rote Learning**
• Concept is fully understood by student	• Verbatim memorization of new information
• New information is related to what students already know (prior knowledge)	• No connection between new and previous knowledge

Meaningful vs. Rote Learning

- Rote learning (memorization) only achieves *retention* of new information
- Meaningful learning achieves both *retention* and *transfer,* and even achieves *retention* better than rote learning.

Teaching for Meaningful vs. Rote Learning

| **Meaningful**	**Rote**
• Relate information to everyday experiences	• Present definitions, formulas, and new information without explaining relationship with students' experiences
• Deliberate effort to link new knowledge with prior knowledge	• Random presentation of new knowledge into memory with no effort to integrate new knowledge with prior knowledge

Summary: Meaningful vs. Rote

- Very few things need to be learned by rote (Woolfolk, 2007)
- **Point of Meaningful Learning:** Make materials meaningful to the learner
- **To achieve Meaningful Learning:** Organize instruction to make meaningful connections to what learners already know

Teaching for Meaningful Learning

- Use analogies (similarities with ordinary concepts)
- Tell stories to demonstrate concepts
- Ask students for their relevant experiences
- Ask students questions beyond what you have directly taught to test their understanding
- Make students explain their reasons for their answers: *Why?*
- Answer questions with questions

Bloom's Taxonomy

Creating

Evaluating

Analysing

Applying

Understanding
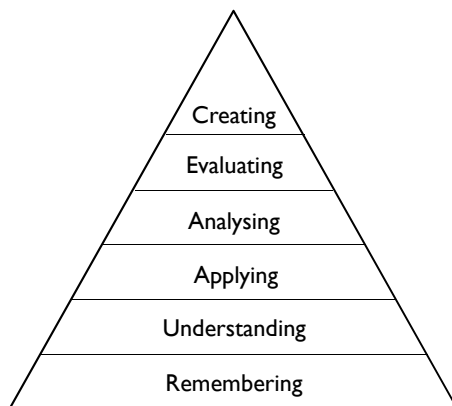
Remembering

Bloom's Taxonomy

Category	Definition	Keywords
Remembering	Recall information.	Recite. Define. Identify. Describe. Recognize. Know. List. Name.
Understanding	Understand the meaning of a concept.	Comprehend. Explain. Summarize. Translate.
Applying	Use a concept in a familiar situation. Use a procedure.	Apply. Compute. Predict. Demonstrate. Implement. Use.
Analysing	Break information into parts to explore relationships and understanding.	Analyse. Compare. Contrast. Differentiate. Distinguish. Diagram.
Evaluating	Make judgment about the value of a concept based on standards.	Criticize. Critique. Evaluate. Justify. Support.
Creating	Generating new ideas, products, or ways of viewing something.	Create. Design. Generate. Plan. Construct. Produce. Invent.

Bloom's Taxonomy

. What is the definition of rote memorization?

. What are the advantages and disadvantages of teaching for meaningful learning?

. Demonstrate how meaningful learning can be used in your classroom.

. Create your own lesson that focuses on meaningful learning.

. Compare similarities and differences between meaningful learning and constructivism.

. Explain why should students engage in meaningful learning.

Creating
Evaluating
Analysing
Applying
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Remembering
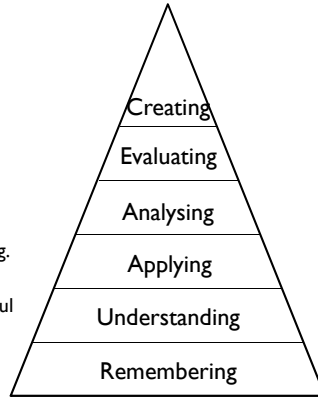
Reflective Teaching

- **Reflective Teacher**: Reflects on teaching practices
  - Why was it done?
  - Was it effective?
- Two aspects of Reflective Teaching
  - Daily Reflection
  - Periodic Reflection

Toolbox of Teaching Methods

- Take a Stand
- Think-Pair-Share
- Thought provoking questions
- Stories
- Jigsaw
- Analogies
- Practical examples
- Compare concepts
- Ask students to explain their answers (e.g., answer a question with a question)

Story Story!

- Stories attract students' attention
- Stories help make abstract principles concrete, meaningful, and relevant
- Stories help students remember a concept

Thought Provoking Questions

- "Effective questioning techniques may be among the most powerful tools that educators employ" (Woolfolk, 2007, p. 493)
- Effective questions require pupils to think deeply about what is being taught and results in meaningful learning

Types of Questions

- Rhetorical question requires no meaningful responses from students
- Yes/no question
- Short-answer question where the answer was previously provided in class
- Though-provoking question that requires students to think beyond information presented in class

Effective Questions

- Use sufficient **wait-time** after asking the question
  - Students give longer and more thoughtful answers when teachers wait at least 5 seconds before calling on a students respond
- Ask guiding questions if students have difficulty responding
- Provide meaningful feedback after the response
- Do not criticize a student for an incorrect answer