Scaffolding of Higher Order Thinking Skills in the Classroom

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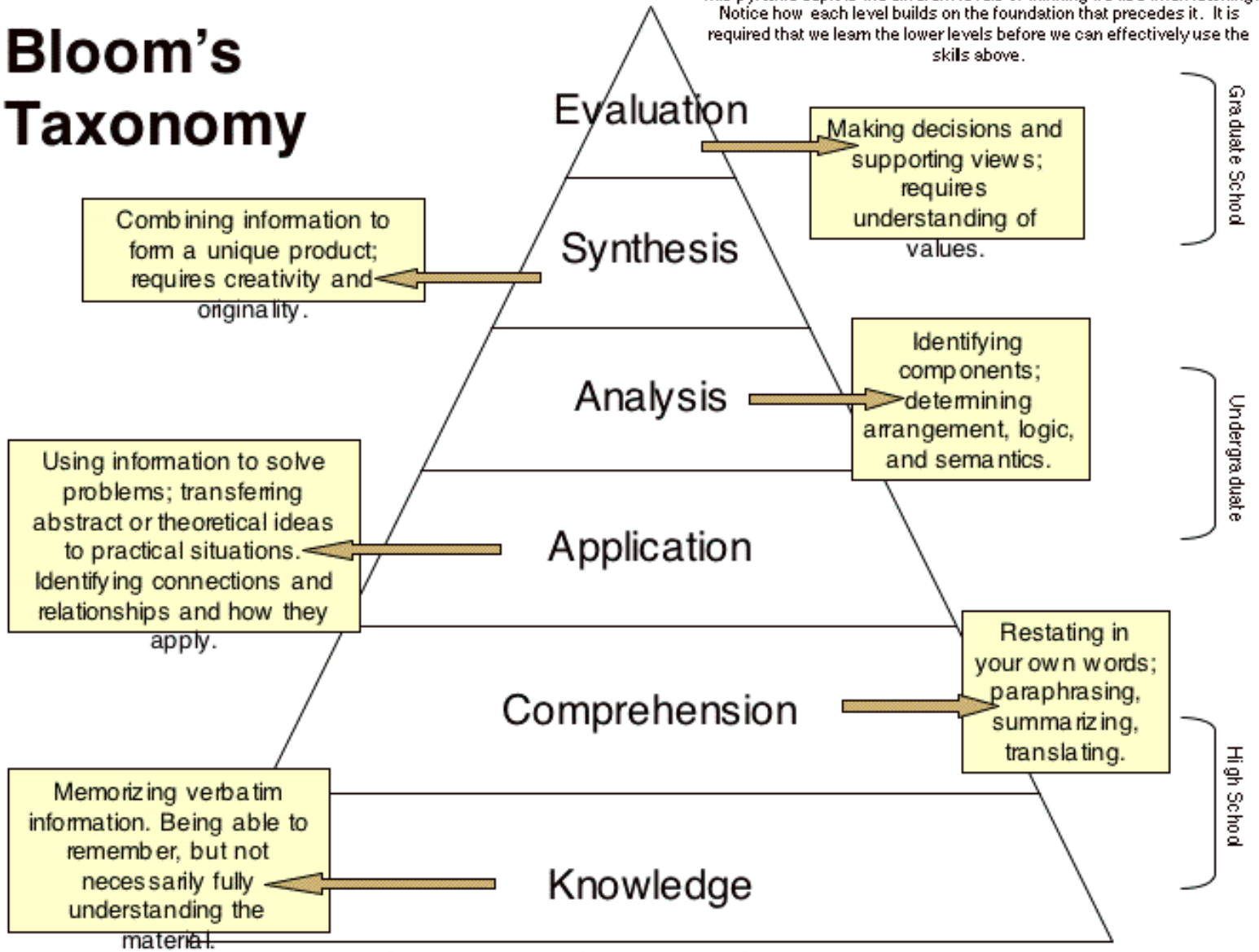
Bloom's Taxonomy

This pyramid depicts the different levels of thinking we use when learning. Notice how each level builds on the foundation that precedes it. It is required that we learn the lower levels before we can effectively use the skills above.



A “synthesis” question: Here it is just the ability to recall multiple things at once.

25. Most of the weight of a large oak or cherry tree is from

A. Vascular tissue

57% B. Dead cells

C. Sporophyte tissue

D. Diploid tissue

30% E. All of the above

A “synthesis” and “application” question:

(6 pts) The unity and diversity of life. **Briefly describe at least TWO ways that the biology of humans and trees is very <u>similar</u>, and at least TWO ways that their biology is very <u>different</u>.**

For full credit, use topics we have covered in this course, such as life cycles, or reproduction, or adaptations, or energy, or nutrition, or growth, or development, etc. Avoid trivial similarities (e.g., "we are both alive") and trivial differences (e.g., "I can walk, a tree can't”).

MTEL02 Open Response - Science

An important learning standard for kindergarten students is to identify objects and materials as being either solids, liquids, or gases. Using your knowledge of physical science and child development, prepare a response in which you:

- describe a physical property of liquids that distinguishes them from solids;
- summarize a learning experience that would help kindergarten students distinguish liquids and gases; and
- explain why this experience fosters learning and development for kindergarten students.

MTEL02 Open Response - Math

An important learning standard for pre-kindergarten children is to sort and classify objects by properties such as color, size, and shape. Using your knowledge of classification and child development, prepare a response in which you:

- describe how sorting and classifying objects is related to a fundamental concept in mathematics;
- summarize a learning experience that would help pre-kindergarten children learn to sort and classify objects based upon their properties and characteristics; and
- explain why this experience fosters learning and development for pre-kindergarten students.

Organizing Question

- How can we support our students in moving from simple knowledge acquisition and regurgitation to applying higher-order thinking skills?

LAS OBJECTIVE: PROBLEM SOLVING AND SYNTHESIS

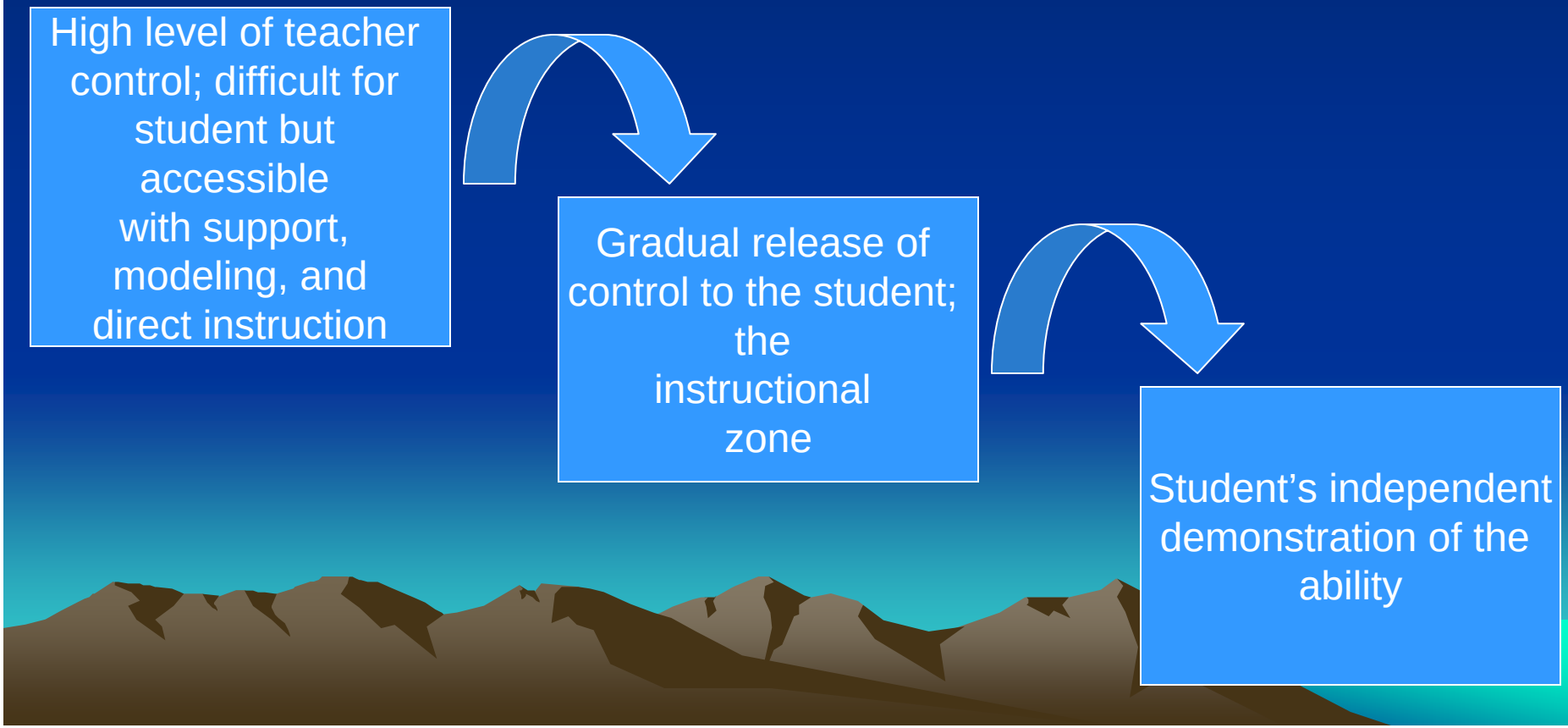
Students will:

1. **Identify problems, carry out analyses and interpret data** in a cohesive manner
2. Integrate **multiple inquiry methods** to identify and solve problems
3. Recognize, develop, defend, and criticize **arguments**
4. **Apply** problem-solving skills learned in the classroom to **practical issues**
5. Use **collaborative** problem-solving skills

Group Work

What is Scaffolding?

- Gradual release of control model
- “Me – Us – You”



Your Turn!

- Discuss ways that you might be able to scaffold student learning and their development of higher-order thinking skills.
  - What kinds of modeling will it take?
  - How long will you spend doing it?
  - How might you integrate these methods into your courses?
  - How will it impact your assessment of students?

Questions and Discussion