The Critical Difference Between Complexity and Difficulty

Complexity and difficulty describe different mental operations, but are often used synonymously. This error, resulting in the two factors being treated as one, limits the use of the taxonomy to enhance the thinking of all students. By recognizing how these concepts are different, the teacher can gain valuable insight into the connection between the taxonomy and student ability.

Complexity describes the *thought process* that the brain uses to deal with information. In the revision of Bloom's Taxonomy, it can be described by any of the six words representing the six levels. For example, the question, "What is the capital of Rhode Island?" is at the *Remember* level, while the question "Tell me in your own words what is meant by a state capital" is at the *Understand* level. The second question is more *complex* than the first because it is at a higher level in the taxonomy.

Difficulty, on the other hand, refers to the *amount of effort* that the learner must expend within a level of complexity to accomplish a learning objective. It is possible for a learning activity to become increasingly difficult without becoming more complex. For example, the task "Name the states of the Union" is at the *Remember* level of complexity because it involves simple recall (semantic memory) for most students. Similarly, the task "Name the states of the Union and their capitals" is also at the *Remember* level, but is more difficult than the prior question because it involves more effort to recall additional information. Similarly, the task "Name the states and their capitals in order of their admission to the Union" is still at the *Remember* level, but it is considerably more difficult than the first two. It requires gathering more information and then sequencing it in chronological order.

> *Teachers are more likely to increase difficulty, rather than complexity, when attempting to raise student thinking*.

These are examples of how students can exert great effort to achieve a learning task while processing at the lowest level of thinking. When seeking to challenge students, classroom teachers are more likely (perhaps unwittingly) to increase difficulty rather than complexity as the challenge mode. This may be because they do not recognize the difference between these concepts or that they believe that difficulty is the method for achieving higher-order thinking.

How the Brain Learns, David A. Sousa, 3rd edition, 2006

Bloom's Taxonomy: Increasing Complexity

Examples become more complex from bottom to top, and more difficult from left to right.

BLOOM'S LEVEL		INCREASING LEVEL OF DIFFICULTY →	
↑ I N C R E A S I N G C O M P L E X I Y Y	CREATE	Rewrite the story from the point of view of the dog.	Rewrite the story from the points of view of the dog and of the cat.
	EVALUATE	Compare the *two* main characters in the story. Which would you rather have as a friend and why?	Compare the *four* main characters in the story. Which would you rather have as a friend and why?
	ANALYZE	What were the similarities and differences between this story and the one we read about the Civil War hero?	What were the similarities and differences between the story, the one we read about the Civil War hero, *and the one about the Great Depression?*
	APPLY	Think of another situation that could have caused the main character to behave that way.	Think of at least *three* other situations that could have caused the main character to behave that way.
	UNDERSTAND	Write a paragraph that describes the childhood of any one of the main characters.	Write a paragraph that describes the childhood of each of the *four* main characters.
	REMEMBER	Name the major characters in this story.	Name the major characters and the *four locations* in this story.