

Climbing the Ladder to Bloom's Taxonomy

Benjamin Bloom (1956), an influential educational researcher, identified six levels of cognitive complexity for learning: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. These six learning objectives are known as Bloom's Taxonomy. At Northcentral, the six levels of Bloom's Taxonomy are used to help measure how well each writer develops higher-order thinking skills:

1. **Knowledge** requires the writer to observe and recall information, such as facts, dates, definitions, descriptions, or ideas.
2. **Comprehension** requires more understanding than knowledge; the writer must grasp the meaning of a subject and be able to transfer knowledge of a subject into a new context. At this level, the writer interprets facts, organizes ideas, groups ideas logically, infers causes, and predicts consequences.
3. **Application** requires that the writer to use the information in a new situation. At this level, the writer solves problems using the knowledge gained previously and solves problems using required skills or knowledge.
4. **Analysis** requires the writer to see patterns, identify parts or components, organize the information, and recognize hidden or underlying meaning. At this level, the writer identifies individual components of the information.
5. **Synthesis** requires the writer to create new ideas out of those she or he already knows. At this level, the writer generalizes ideas based on known facts and relates knowledge from various areas to predict outcomes and draw conclusions.
6. **Evaluation** requires the writer to compare and discriminate between ideas. At this level, the writer assesses the value of theories and ideas, chooses between them based on logical arguments, and verifies whether a fact is valid or not. The writer recognizes subjectivity in facts and ideas and is capable of grasping the fact itself apart from that subjectivity.

Bloom B. S. (1956). *Taxonomy of educational objectives, Handbook I: The cognitive domain*. New York: David McKay.

Each level in Bloom's Taxonomy builds on the previous level and deepens in complexity. For example, as the writer learns to master the thinking skills required for *Analysis* (to see patterns, identify components, recognize hidden meaning), the writer may then begin to master the thinking skills required for *Synthesis* (to create new ideas out of the patterns, parts, and meanings observed). *Evaluation*, therefore, would require the writer to master and incorporate all of the previous higher thinking skills in Bloom's Taxonomy. The vertical progression from the first educational objective (*Knowledge*) to the final educational objective (*Evaluation*) is known as the writer's climb *up* the ladder to Bloom's Taxonomy.

In the writing process, Bloom's Taxonomy may be viewed at two levels: Evidence and Argument. The first three objectives (*Knowledge*, *Comprehension*, and *Application*) correlate to evidence, while the last three educational objectives (*Analysis*, *Synthesis*, and *Evaluation*) correlate to argument. As the writer approaches each writing assignment at Northcentral, the importance of the higher-order thinking skills required for the last three educational objectives – *Analysis*, *Synthesis* and *Evaluation* – will become more prevalent. Therefore, the writer should be careful to pay attention to the action verbs in an assignment that signal each of the higher thinking skills associated with Bloom's Taxonomy:

- *Analysis*: analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer.
- *Synthesis*: combine, integrate, modify, rearrange, substitute, plan, create, design, invent, compose, formulate, prepare, generalize, rewrite
- *Evaluation*: assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize

The writer should note that a single writing assignment might require Analysis, Synthesis, and Evaluation to be considered complete. For example, a single assignment may ask the writer (a) to *divide* a problem into separate parts (*Analysis*), (b) to *rearrange* the parts into a new order (*Synthesis*), and finally (c) to *judge* which parts are most important (*Evaluation*). The writer should also consider how Bloom's Taxonomy correlates to the evidence and analysis required for cohesive paragraph structure (see Crafting the Evidence, Analysis, and Transition for Each Paragraph and MEAL Plan in the Writing Handbook).