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Behavioral Verbs for Writing Objectives in the Cognitive, Affective and Psychomotor Domains

Some Verbs for Use In Stating **Cognitive** Outcomes

<u>Knowledge</u>	Comprehension	Application	<u>Analysis</u>	<u>Synthesis</u>	Evaluation
define	discuss	compute	distinguish	diagnose	evaluate
list	describe	demonstrate	analyze	propose	compare
recall	explain	illustrate	differentiate	design	assess
name	identify	operate	compare	manage	justify
recognize	translate	perform	contrast	hypothesize	judge
state	restate	interpret	categorize	summarize	appraise
repeat	express	apply	appraise	plan	rate
record	convert	use	classify	formulate	choose
label	estimate	practice	outline	arrange	decide

Some Verbs for Use In Stating Affective Outcomes

Receiving sit erect	Responding answer	<u>Valuing</u> join	Organization adhere	Value Complex act
reply	greet	share	integrate	practice
accept	read	complete	organize	discriminate
show	report	follow	ç	influence

Some Verbs	for Use In St	ating Psycho	motor Outcon	nes		
Perception	<u>Set</u>	<u>Guided</u> Response	<u>Mechanism</u>	<u>Complex</u>	<u>Adaptation</u>	Origination
identify detect differentiate	react respond start	display manipulate work	display manipulate work	display manipulate work	adapt revise change	create compose arrange
		perform	write	operate		

Bad words that s	should not be used a	as cognitive objectives!		
know learn	really know thinks critically	understand approach	appreciate improve	become grow
increase	expand horizons	grasp the significance of		



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Table 1 a. Major Categories in the Cognitive Domain of the Taxonomy of Educational Objectives (Bloom, 1956; from Gronlund)

Descriptions of the Major Categories in the Cognitive Domain

- 1. **Knowledge**. Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.
- 2. **Comprehension**. Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one fom1 to another (words, to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.
- 3. **Application**. Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.
- 4. **Analysis**. Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural fom1 of the material.
- 5. **Synthesis**. Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (report or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying infom1ation). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.
- 6. **Evaluation**. Evaluation is concerned with the ability to judge the value of material (statements, lab results, teaching materials, journal articles) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose); the learner may either determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious judgments based on clearly defined criteria.



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TABLE 1 b. Examples of General Goals and Behavioral Verbs for the Cognitive Domain of the Taxonomy (Gronlund)

Illustrative General Goals	Illustrative Behavioral Verbs
Knowledge Knows common terms or specific facts Knows methods and procedures Knows basic concepts Knows principles	Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states
Comprehension Understands facts and principles Interprets verbal material Interprets charts and graphs Translates verbal material to math formulas Estimates future consequences implied in data	Converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, paraphrases, predicts, rewrites, summarizes
Application Applies concepts and principles to new situations Applies laws and theories to real situations Solves mathematical problems Constructs charts and graphs Demonstrates use of a procedure	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses
Analysis Recognizes unstated assumptions Recognizes logical fallacies in reasoning Distinguishes between facts and inferences Evaluates the relevancy of data Analyzes the organizational structure of a work	Breaks down, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, points out, relates, selects, separates, and subdivides.
Synthesis Writes a well-organized theme Gives a well-organized speech/presentation Proposes a plan for an experiment Integrates learning from different areas into a plan for solving a problem Formulates a new scheme for classifying facts	Categorizes. combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes
Evaluation Judges the logical consistency of material Judges the adequacy with which conclusions are supported by data Judges the value of a work using internal criteria Judges the value of a work using external standards of excellence	Appraises, compares, concludes, contrasts, criticizes, describes, discriminates, explains, justifies, interprets, relates, summarizes, supports