

MAJOR CATEGORIES IN
BLOOM'S TAXONOMY

ASSOCIATED ACTION
VERBS

SOME EXAMPLES OF
GENERAL OBJECTIVES

INTELLECTUAL PROCESSES

6.00 *Evaluation*. This represents the highest level in the taxonomy. It includes a combination of all the previous five categories. Evaluation is concerned with making judgements about *value*. In order to make such an assessment, some yardstick or criterion is necessary as a standard against which things can be measured. The evaluation can be quantitative or qualitative, direct or indirect, subjective or objective. Usually judgements are made in terms of internal evidence; making judgements in terms of external criteria is regarded as the highest level of evaluative activity.

to evaluate
to judge
to decide
to choose
to assess
to contrast
to criticize
to select
to defend
to support
to attack
to avoid
to seek out
to compare
to determine

Compare and contrast two major theories accounting for the formation of volcanoes.
Determine the logical fallacies in the arguments presented by Dupleis.
Make an appropriate decision on the basis of the data presented.
Evaluate a curriculum in terms of its announced aims and agreed objectives.
Criticize the use of imagery in Rod McKuen's poem 'Speak to me in silence'.
Decide the several advantages for using a taxonomy of educational objectives.

5.00 *Synthesis*. Synthesis is the opposite to analysis. It involves combining together a number of elements in order to form a coherent whole. The process involves logical deduction, and in this sense the category is intimately concerned with thinking and creativity. Synthesizing or combining elements involves doing something in a unique or original way. The discovery of pattern or structure is an important part of the activity. The sub-categories of synthesis are: production of a unique combination, production of a plan or proposed set of operations and derivation of a set of abstract relations.

to combine
to restate
to summarize
to precis
to generalize
to conclude
to derive
to organize
to design
to deduce
to classify
to formulate
to propose
to compose

Summarize the normal cycle of erosion for streams and rivers.
Design a module dealing with the concept of the sonnet.
Propose three ways in which a hypothesis might be tested.
Describe a personal experience that has happened to you whilst learning.
Compose a three act play around the theme of self-fulfilment.
Draw a generalization from the data that you have collected in the experiment that you have just performed.

4.00 *Analysis*. Analysis involves the breaking down, or the separation of a whole into its component parts. It is a process of reasoning or thinking. In its simplest form, analysis includes a simple listing of elements. A higher level of analysis involves determining the nature of the relationships between these elements. The highest form of analysis includes identifying the organizing principle or principles behind the actual material or phenomena concerned. At this level, analysis begins to take on many of the features of synthesis.

to analyse
to identify
to separate
to break down
to discriminate
to distinguish
to detect
to categorise

Identify the assumptions that have been made in chapter five.
Analyse this topic into its component parts.
Distinguish the literary and stylistic techniques used in the following poem.
Categorize the relationships between the phenomena listed above.

3.00 *Application*. Application involves using something in a specific manner. As such it includes relevancy, as well as the capacity for close attention to detail. Diligence and effort are also involved. The two lower categories of knowledge and comprehension are prerequisites to application. Interestingly enough, application involves an element of creativity, since it involves seeing how particular phenomena can be used in a new situation to which there is no specified solution. The skill of application underlies a great part of school learning, and is intimately concerned with some of the primary objectives of education.

to apply
to show
to demonstrate
to use
to perform
to relate
to develop
to transfer
to construct
to explain
to infer

Apply the principle of resistance to a novel situation in aerodynamics.
Predict the possible consequences of a continued mixture of recession and inflation.
Explain how Johann's conclusion was reached, when so little information was available.
Infer the appropriate principle behind each of the following reactions.
Transfer the concept of a field of force from physics to human behaviour.

2.00 *Comprehension*. Comprehension involves understanding or perceiving. It includes taking in, grasping, insight, and as such is highly stressed in school learning. In many ways, comprehension necessitates the processing of information, which may include changing that information into some parallel form more meaningful to the learner. Three sub-categories of comprehension are recognized: translation (changing something into another form), interpretation (elucidate or clarify meaning), and extrapolation (going beyond the information given).

to comprehend
to understand
to have insight into
to predict
to interpolate
to extrapolate
to interpret
to translate
to illustrate
to draw

Translate the following passage from Latin to English.
Give two examples of the above rule.
Draw a graph illustrating the relationships between the following two sets of data.
Interpret the following situation.
Illustrate what is meant by a warranted and an unwarranted conclusion.

KNOWLEDGE AS A PRODUCT

1.00 *Knowledge*. Knowledge involves the rather elementary skill of recalling, or remembering specific information or experiences. The information recalled may include specific pieces of information terminology and facts. A higher level form of knowledge involves knowing the ways or means of dealing with information. This includes conventions, as well as trends and sequences, classifications and categories, criteria and methodology. The highest level of all involves a knowledge of universals and abstractions. This includes a knowledge of principles and generalizations, as well as theories and structures. The organizing principle behind these three broad sub-categories of knowledge is from highly specific and concrete knowledge to more complex and abstract ideas.

to describe
to recall
to define
to state
to identify
to recognize
to name
to list
to underline
to reproduce
to measure
to label
to write
to acquire

Define the term 'light'.
State what is meant by the expression 'there's no fool like an old fool'.
Describe the stages in the so-called 'scientific method'.
Recognize the correct generalization that can be drawn about the behaviour of metal when heated.
State the relationship between temperature and pressure.
Label the enclosed map of the major climatic regions of the world.
Measure the distance between London and Birmingham.

Fig. 8.5. A table for writing objectives in the cognitive domain (Based upon Bloom, (1956) *Taxonomy of educational objectives Handbook of cognitive domain*. New York: McKay)

MAJOR CATEGORIES IN KRATHWOHL'S TAXONOMY	ASSOCIATED ACTION VERBS	SOME EXAMPLES OF GENERAL OBJECTIVES
<p>5.00 <i>Characterization by a Value or Value Complex.</i> This represents the highest level in the taxonomy. Characterization, as the name implies, is concerned with a person's character; with his or her uniqueness as an individual. At this high level, values have been placed within a coherent framework, which lends consistency to what a person does or believes. This characterization is seen in the philosophy of life of a person, in their fundamental rules of conduct. Beliefs, ideas and attitudes are all fused together into an overall view of life. The subcategories are generalized set (this gives internal consistency to a system of values), and characterization (which is the peak of internalization).</p>	<p>to revise to change to face to accept to judge to develop to require to resolve to resist to reject to identify with to believe</p>	<p>Develops an internally consistent value system. Revises philosophy of life. Develops a sense of respect for human life. Believes in the worth and dignity of the person. Accepts the necessity for changing opinions in the light of new information. Develops a well organized set of values. Organizes the value structure implicit in Welsh education into a coherent system reflecting children's needs in an industrial and multi-racial environment.</p>
<p>4.00 <i>Organization.</i> Organization is involved when situations are encountered which involve more than one value or attitude. Under these circumstances some sort of organization or patterning is called for, otherwise behaviour becomes inconsistent and unpredictable. Organization, however, implies only the beginning of a value system, that is carried to its most developed form in characterization. In both cases, something more than an ability to put the value into words is called for, and some kind of ability to defend one's values is implied. Two sub-categories are included: conceptualization of a value (the value is abstract or symbolic), and organization of a value system (an ordered set of relationships is beginning to occur).</p>	<p>to discuss to organize to judge to relate to correlate to determine to associate to form to select to balance to define to formulate to weigh</p>	<p>Determines the features in an admired public figure. Relates own code of conduct to that of school. Forms own rationale as a prefect. Weighs the pros and cons for a course of action against the needs of friends. Develops a plan for identifying the rules for a new ecology club.</p>
<p>3.00 <i>Valuing.</i> Valuing implies that the attitude is regarded as having merit or intrinsic worth to the person concerned. It is worth while, useful, desirable; it is esteemed, appreciated, and important. At this level, the thing that is valued has taken on the characteristics of a belief, and as such has great motivating force upon the person concerned. Enthusiasm and interest are all involved. Three subcategories are identified: acceptance of a value (is seen to have worth), preference for a value (there is a sense of commitment, and commitment itself (this involves quite a high degree of certainty about the value). Initiation into a set of personally developed values is the very essence of what education is all about.</p>	<p>to accept to recognize to participate to increase to develop to attain to indicate to decide to influence to support to debate to argue to appreciate</p>	<p>Recognizes the value of the Zen philosophy. Becomes actively involved in Save the Children Fund. Accepts the importance of understanding other people's point of view. Indicates a preference for a particular type of literature. Appreciates the role of democracy in school governance. Accepts the place of the church in the village way of life. Supports the aims of the Humanities Project.</p>
<p>2.00 <i>Responding.</i> Responding implies that something more than merely attending is involved. Some sort of reply or answer occurs, and this suggests that a level of interest and motivation have been tapped as a resource. The level of commitment is low, but a degree of curiosity, or arousal has occurred. The subcategories of this level are: acquiescence in responding (learner reacts), willingness to respond, and satisfaction in response (sense of pleasure is evoked). Whatever the subcategory involved, however, the important thing to remember is the sense of willingness and pleasure involved in responding.</p>	<p>to state to answer to complete to select to list to record to develop to comply to follow to acclaim to applaud</p>	<p>Willingly states opinion. Does what is told. States the underlying assumptions. Voluntary agrees to save. Assumes responsibility when asked. Enjoys classical music. Finds satisfaction in Chaucer's poetry.</p>
<p>1.00 <i>Receiving (Attending).</i> Receiving or attending is the lowest level in the taxonomy. It implies only that the communication will be listened to or heeded, that the person involved is aware of message or stimulus. The subcategories are: awareness (conscious of what is happening), willingness to receive (will tolerate what is happening and will not seek to avoid it), and controlled or selected attention (will attend carefully to what is going on).</p>	<p>to listen to attend to receive to control to select to accumulate to be aware to perceive to favour to accept</p>	<p>Listens to what is said. Aware of the need for reconciliation. Sensitive to the situation. Conscious of the structure of a sonnet. Accepts differences in viewpoint. Alert to changes in pace. Studies newspapers.</p>

Fig. 8.6. A table for writing objectives in the affective domain (Based upon Krathwohl, D. R., Bloom, B. S. and Masia, B. B. (1964) *Taxonomy of educational objectives. Handbook II: Affective Domain.* New York: McKay)

MAJOR CATEGORIES IN HARROW'S TAXONOMY	ASSOCIATED ACTION VERBS	SOME EXAMPLES OF GENERAL OBJECTIVES
<p>6.00 <i>Non-Discursive Communication.</i> Non-discursive communication can be defined as comprising those behaviours which are involved in movement communication. They can range from facial expressions to highly sophisticated dance choreographies as in classical ballet. Generally speaking, such non-discursive activities involve expressive communication forms like gestures and posture, as well as interpretative movements which can be either aesthetic or creative in form. The essential element in such psychomotor movements is that the response comes more from intuition and the tacit dimension than from reason or explicitness. This is why the term 'non-discursive' is employed.</p>	<p>to gesture to carry oneself to stand to sit to express facially to dance skilfully to perform skilfully to paint skilfully to play skilfully to smile knowingly</p>	<p>Moves expressively so as to communicate emotions. Moves interpretatively so as to communicate, aesthetically or creatively, inner feelings. Communicate self-fulfilment through the use of dance movements in a ballet. Uses movement to express joy and contentment in a pastoral idiom.</p>
<p>5.00 <i>Skilled Movements.</i> Skilled movements are defined as any efficiently performed complex movement. They require learning, and should be based upon some adaptation of the inherent patterns of movement described in level number two below. Skilled movements involve simple adaptive skills, compound adaptive skills incorporating the management of a tool or implement, and complex adaptive skills requiring a greater mastery of body mechanics. The important thing about skilled movements is that they are performed with ease and grace, almost as if no effort or thought were involved. In every case, however, they have been consciously acquired and practised over a period of time until the present level of skill was acquired.</p>	<p>to waltz to saw to type to play the piano to plane to file to skate to somersault to juggle to punt to twist-dive to fence to change</p>	<p>Changes or modifies basic movement patterns. Changes or modifies basic movement patterns using an implement or tool. Changes or modifies basic movement patterns, with total body involvement, often without a basis of support so that delicate adjustments are constantly necessary.</p>
<p>4.00 <i>Physical Abilities.</i> Physical abilities are essential to efficient motor activity. They are concerned with the vigour of the person, and allow the individual to meet the demands placed upon him or her in and by the environment. Physical abilities are an essential foundation for the development of skilled movements. Prominent amongst physical abilities are speed, endurance, exertion, and flexibility.</p>	<p>to endure strenuous activity to endure for long periods of time to improve to increase to stop and start to move precisely to touch toes</p>	<p>Exerts tension against resistance. Moves quickly. Stops immediately. Endures long periods of fatigue.</p>
<p>3.00 <i>Perceptual Abilities.</i> Perceptual abilities are really inseparable from motor movements. They help learners to interpret stimuli so that they can adjust to their environment. Superior motor activities depend upon the development of perception. They involve kinesthetic discrimination, visual discrimination, auditory discrimination and coordinated abilities of eye and hand, eye and foot. The skill of discrimination underlies all these abilities, whether they are gross in character or fine in quality. This skill has to be deliberately learned and practised over a wide range of conditions.</p>	<p>to catch to bounce to eat to write to balance to bend to bounce to draw from memory to distinguish by touching to explore</p>	<p>Discriminates kinesthetically. Discriminates visually. Discriminates auditory-wise. Discriminates tactily. Coordinates two or more perceptual abilities and movement patterns.</p>
<p>2.00 <i>Basic Fundamental Movements.</i> Basic fundamental movements are defined as those inherent body movement patterns, which build upon the foundation laid by reflex movements. They usually occur during the first year of life, and unfold rather than are taught or consciously acquired. These movements involve movement patterns which change a child from a stationary to an ambulatory learner. They also involve non-locomotor movements of the limbs and portions of the trunk, as well as manipulative movements of the extremities. The movements involved in this category are fundamental to all normal, everyday human activity, and any deficiency is usually quite serious in terms of day to day psychomotor activities.</p>	<p>to crawl to creep to slide to walk to run to jump to grasp to reach to righten to support to handle</p>	<p>Changes location. Creates dynamic movement patterns in space, but remains in one place. Moves extremities in coordinated fashion. (Note: there is usually little need to write objectives for this classification level, unless learner is having difficulties and needs to be placed in a remedial programme.)</p>
<p>1.00 <i>Reflex Movements.</i> reflex movements are defined as involuntary motor responses to stimuli. They form the basis for all behaviour involving movement of any kind. Reflex movements are functional at birth, and develop throughout life. They involve one or more spinal segments, and sometimes the participation of the brain centres. Reflex movements represent the lowest level in the psychomotor domain, but without them life, at least as we know it, is impossible.</p>	<p>to flex to stretch to straighten to extend to inhibit to lengthen to shorten to tense to stiffen to relax</p>	<p>Responds with segmental reflexes. Responds with intersegmental reflexes. Responds with suprasedgmental reflexes. (Note: there is no need to write objectives for this classification level. Movements are not learned, but are reflex to stimuli.)</p>

Fig. 8.9. A table for writing objectives in the psychomotor domain. (Based upon Harrow, A. J. (1972) *A Taxonomy of the psychomotor domain* New York: McKay)