CES ED

Writing Learning Objectives
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Bloom's Taxonomy of Learning Domains

When a learning objective is well written and accurately describes what you want the participant to know or what knowledge to be gained then it will guide the instructor to properly developing and structuring the course. To better understand this concept we refer to a primary philosophy shared by many leading educators, Bloom's Taxonomy of Learning Domains.

Bloom's Taxonomy is a model developed by educational expert Dr Benjamin S. Bloom that focuses on the "mastery" of subjects and the promotion of higher forms of thinking, rather than just the simple transferring of facts.

Bloom demonstrated that most teaching focuses on fact-transfer and information recall, which is the lowest level of training, rather than true meaningful personal development. It is a clear and effective model, for the explanation and application of learning objectives, teaching and training methods, and measurement of learning outcomes.

Bloom's Taxonomy provides a structure for planning, designing, assessing and evaluating training and learning effectiveness. The model helps to ensure that training is planned to deliver all the necessary development for learners, and a template by which you can assess the validity and coverage of any existing training, be it a course or a curriculum.

BLOOM'S TAXONOMY SIX LEVELS OF COGNITIVE LEARNING DOMAINS
Arranged in order from the simplest level of learning (i.e. KNOWLEDGE) to the most complex level of learning (i.e. EVALUATION).

KNOWLEDGE is defined as 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.

Verbs: arrange, define, duplicate, label, list, memorize, name, order, recognize, relate, recall, repeat

COMPREHENSION is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating furture trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.

Verbs: classify, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, translate

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.

Verbs: apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write

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 becasue they require an understanding of both the content and the structural form of the material.

Verbs: analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test

SYNTHESIS refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.

Verbs: arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write

EVALUATION is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgements are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they

contain elements of all the other categories, plus conscious value judgements based on clearly defined criteria.

Verbs: appraise, argue, assess, attach, choose compare, defend estimate, judge, predict, rate, core, select, support, value, evaluate

EXAMPLES OF BLOOM'S TAXONOMY LEARNING OBJECTIVES RELATED TO COURSE STRUCTURES

KNOWLEDGE Example: List 5 ways green product ratings may need to evolve in order to truly address a sustaining future. Using an existing project, what would be the difference in high-end building performance of the project in 2025?

Effective Instructional formats: Classroom, web cast, pod cast, site tours and home study.

COMPREHENSION Example: Describe how to bridge the gap between these high-end goals and project realities and limitations of budget, resources, schedule, and technology. Using the budget of an existing project create a new budget using high end performance goals. Match it against the non-high-end performance budget with emphasis on cost over the life of the building.

Effective Instructional formats: Classroom, webinar, case study, and independent study.

APPLICATION Example: Choose which of the various product certifications best applies to your selection and use of sustainable products. Use either first-, second-, or third-party certifying labels.

Effective Instructional formats: Classroom, web cast, pod cast, and home study.

ANALYSIS Example: Calculate the cost differentiation after reviewing at least 5 ways

green product ratings may need to evolve in order to truly address a sustaining future. Using an existing project, what would be the difference in high-end building cost estimates of the project in 2025.

Effective Instructional formats: Classroom, webinar, case study, and independent study.

SYNTHESIS Example: Using a BIM model design a new security entrance for a visitors center that meet Virginia building code standards.

Effective Instructional formats: Classroom, webinar, case study, and independent study.

EVALUATION Example: Using 5 different green product ratings predict how they might evolve in order to truly address a sustaining future. Using an existing project, what would be the difference in high-end building performance of the project in 2025?

Effective Instructional formats: Classroom, webinar, case study, and independent study.

REFERENCES

Most of the content found on this page was taken from the following sources:

Bloom's Taxonomy of Cognitive Domain

Major categories in the cognitive domain of the taxonomy of educational objectives (Bloom, 1956)

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