

MAJOR CATEGORIES OF CONCEPTUAL LEARNING
(Adapted from Bloom, 1956)

Description of Major Categories of Conceptual Learning

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 form 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 form 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 (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.

6. Evaluation. Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) 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) and the student may determine the criteria or be given them. Learning outcomes in this area are higher in the cognitive hierarchy because they contain elements of all of the lower categories, plus conscious value judgments based on clearly defined criteria.

7. Spiritual Discernment. Spiritual discernment is the ability to discern the moral implications of knowledge and the use of that knowledge; the ability to recognize God's perspective on the subject. This level of wisdom is achieved only by the aid of the Holy Spirit and is reserved for those who are new creatures in Christ Jesus. This is the highest level of wisdom and is described in the Scripture as the wisdom from above in contrast to the wisdom of this world. Spiritual discernment may be a part of any or all of the above levels of learning.

The question asks students to

Evaluation	make a moral or ethical or aesthetic judgment. (Establish criteria of value and measure against them.)
Synthesis	create or invent something. (Divergent thinking)
Analysis	use formal logical processes which they have been taught to solve a new problem (e.g., induction, classification, analogy, metaphor, definition, controlled experiment, etc.).
Application	use a functional idea to solve a new problem (e.g., principle, generalization, formula, axiom, skill, definition, theory, concept, etc.). The question does not tell which functional idea to use. (Transfer of training)
Interpretation	use a functional idea to solve a new problem (e.g., principle, generalization, formula, axiom, skill, definition, theory, concept, etc.). The question reveals which functional idea to use. (This category includes "comparison questions" and "find an example questions.")
Translation	return an idea in a different symbolic form.
Memory	recall or recognize an idea presented earlier.

BLOOM'S TAXONOMY IN THE READING PROCESS

1. Knowledge
Is defined as the remembering of previously learned material. In this level the student knows the common terms, specific facts, methods and procedures, basic concepts and principles. To begin statements and questions to students on this level of learning, words such as: define, describe, identify, match, name, select, state are used.
2. Comprehension
Is defined as the ability to grasp the meaning of the material, translating it from one form to another (words to numbers), by explaining or summarizing, and by predicting future consequences or effects. Comprehension skills translate or reproduce in oral language ideas that are written. Some of the words used to begin statements and questions are: tell, describe, make a list of, identify, memorize, recall, repeat, reproduce, convert, distinguish, estimate, explain, give examples, generalize, infer, paraphrase, predict, rewrite, summarize, show relationship, compare. In this level, students understand the facts and principles, interpret verbal material, charts and graphs, translate verbal material to mathematical form, and justify methods and procedures.
3. Application
Is defined as the skills that facilitate transfer, or the application of experiences already acquired to new situations or new relationships. This includes such things as rules, methods, concepts, principles, laws and theories. In this level the student applies concepts and principles, laws and theories to new and practical situations, solves math problems, constructs charts and graphs and demonstrates correct useage of a method or procedure. Words such as: apply, experiment, exercise, organize, systematize, practice, utilize, compute, demonstrate, modify, discover, relate, show, solve, use, prepare are used.
4. Analysis
Is defined as the ability to break down material into its component parts so that its organizational structure may be understood. It represents a more complex form of judging or valuing a point of view. It includes the identification of the parts, analysis of relationships between parts, and recogniton of organizational structures involved. Understanding of the content and the structural form of the material is required. Words such as: analyse, discover, determine, observe, examine, inverstigate, diagram, differentiate, distinguish, discriminate, identify, illustrate, point out, select, subdivide are used. In this level, the student recognizes unstated assumptions, and logical falacies in reasoning, distinguishes between facts and inferences, evaluates relevancy of data.
5. Synthesis
Is defined as the ability to create new and personal forms of expression and reasoning, or putting parts together to form a new whole. Originality and creativity are part of synthesis. It may involve the productions of a unique communication, a plan of operations, research proposal, or a scheme of classifying information. In this level the student writes a well organized paper or speech, proposes experiment plan, integrates learning from different

areas into a plan for solving a problem. Words like: synthesize , conceive, conclude, create, construct, imagine, ideate, summarize, invent, theorize, combine, compile, compose, devise, design, explain, plan, rearrange, reconstruct, revise, reorganize, rewrite, write are used.

6. Evaluation

Is defined as the ability to judge the value of material for a given purpose, based on definite criteria. This represents the highest level next to spiritual discernment. Methods, materials, values and techniques for learning how to learn are used. Conclusions are drawn based on the ability to utilize these skills. In this level the student judges the logical consistency of material, the adequacy with which conclusions are drawn based on data, and the value of the work. Words such as: calculate, criticize, consult, decide, discuss, estimate, judge, measure, accept, reject, evaluate, appraise, compare, conclude, contrast, justify, interpret, summarize and support are used.

7. Spiritual Discernment

Is defined as the ability to discern material and values, statements and conclusions of the previous six levels, based on the principles and teachings of the Word of God, and the guidance and teaching of the Holy Spirit. This "ability" is the highest form of learning, and can be utilized in all the previous six forms. It is however, dependant upon one's relationship with God, and one's openness and acceptance of the things of God.

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CLASSICAL INVENTION QUESTIONS

Definition

1. How does the dictionary define _____?
2. What earlier words did _____ come from?
3. What do I mean by _____?
4. What group of things does _____ seem to belong to? How is _____ different from other things in this group?
5. What parts can _____ be divided into?
6. Does _____ mean something now that it didn't years ago? If so, what?
7. What other words mean approximately the same as _____?
8. What are some concrete examples of _____?
9. When is the meaning of _____ misunderstood?

Comparison

1. What is _____ similar to? In what ways?
2. What is _____ different from? In what ways?
3. _____ is superior to what? In what ways?
4. _____ is inferior to what? In what ways?
5. _____ is most unlike what? (What is it opposite to?) In what ways?
6. _____ is most like what? In what ways?

Relationship

1. What causes _____?
2. What are the effects of _____?
3. What is the purpose of _____?
4. Why does _____ happen?
5. What is the consequence of _____?
6. What comes before _____?
7. What comes after _____?

Testimony

1. What have I heard people say about _____?
2. Do I know any facts or statistics about _____? If so, what?
3. Have I talked with anyone about _____?
4. Can I quote any proverbs or any poems about _____?
5. Are there any laws about _____?
6. Should I do more research on _____?

Circumstance

1. Is _____ possible or impossible?
2. What qualities, conditions, or circumstances make _____ possible or impossible?
3. Supposing that _____ is possible, is it also feasible? Why?
4. When did _____ happen previously?
5. Who has done or experienced _____?
6. Who can do _____?
7. If _____ starts, what makes it end?
8. What would it take for _____ to happen now?
9. What would prevent _____ from happening?