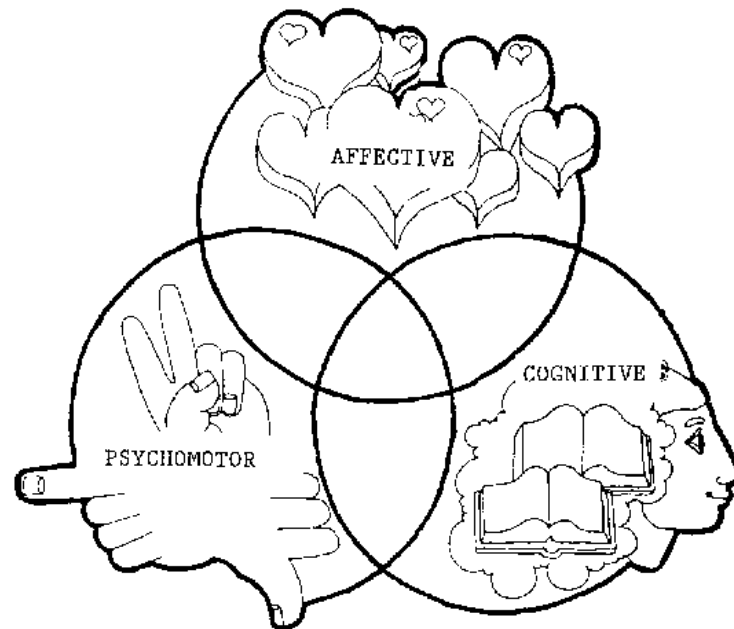# BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

Dr. Ahmad Bilal Cheema
University of Sargodha

BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

- Bloom's Taxonomy is a classification system developed in 1956 by committee of educators chaired by Dr. Benjamin Bloom categorize intellectual skills and behavior important to learning.

Taxonomy and Domains

Bloom's Taxonomy divides educational objectives into three domains

- <u>Cognitive</u> mental skills (*Knowledge), /head*
- <u>Affective</u>, growth in feelings or emotional areas (*Attitude or self*), *feeling/heart*
- <u>Psychomotor</u> manual or physical skills (*Skills*) *doing/hands*

Trainers often refer to these three categories as KSA (Knowledge, Skills, and Attitude)

Purpose and Use

- A goal of Bloom's Taxonomy is to motivate educators to focus on all three domains, creating a more [holistic](#) form of education.

- A revised version of the taxonomy was created in 2000.

- Bloom's Taxonomy is considered to be a foundational and essential element within the education community

Cognitive Domain

- The cognitive domain involves knowledge and the development of intellectual skills

- This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills

- Includes six major categories, starting from the simplest behavior to the most complex. First ones must normally be mastered before the next ones can take place

Stages of Cognitive Domain
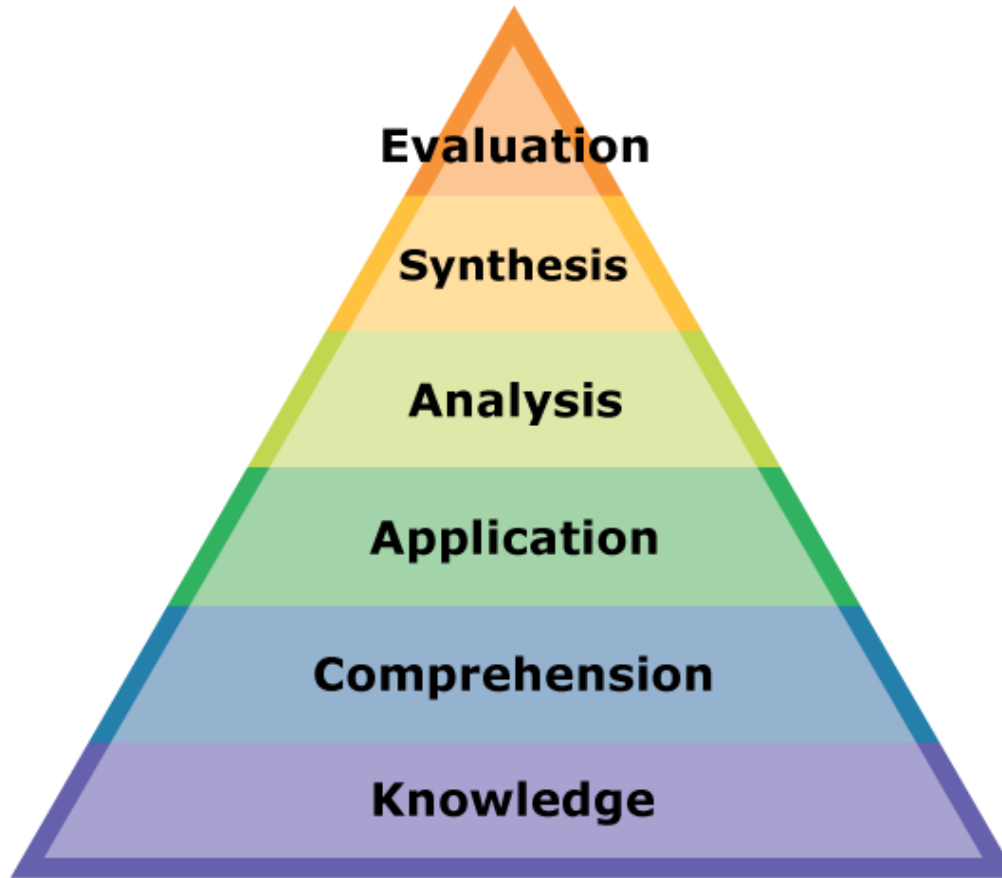
Categories of cognitive domain

Knowledge:	Recall data or information
Comprehension	Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.
Application	Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.
Analysis	Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.
Synthesis	Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.
Evaluation:	Make judgments about the value of ideas or materials.

Bloom's Revised Taxonomy

- Lorin Anderson, a former student of Bloom, revisited the cognitive domain in the learning taxonomy in the mid-nineties and made some changes, with perhaps the two most prominent ones being

- 1) changing the names in the six categories from noun to verb forms

- 2) slightly rearranging them

Revised Blooms Taxonomy
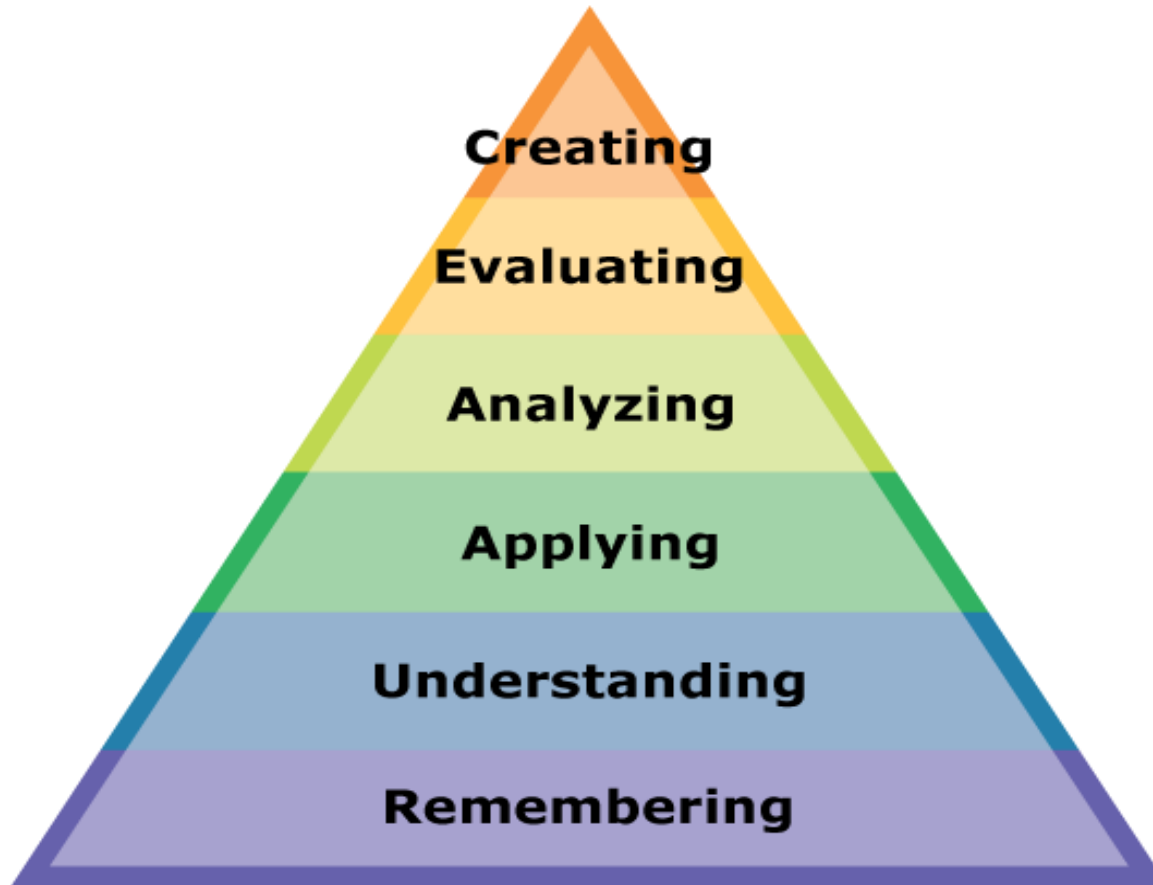
Revised Blooms Taxonomy

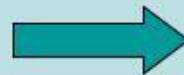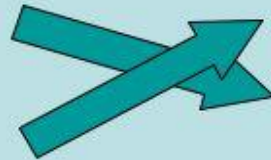| Category	Characteristics
Remembering:	Recall previous learned information.
Understanding:	Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.
Applying	Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.
Analyzing:	Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.
Evaluating:.	Make judgments about the value of ideas or materials
Creating:	Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.

Alternative to Bloom: SOLO Taxonomy

SOLO-Structure of Observed Learning Outcome

- **Pre-structural**

- **Uni-structural**

- **Multi-structural**

- **Relational**

- **Extended abstract**

SOLO Taxonomy

| Prestructural	Unistructural	Multistructural	Relational	Extended Abstract
Incompetence	One independent abstract	Several relevant independent aspects	Integrated into a structure	Generalized to a new domain
•Does not understand •Fail •Misses the point •Not trained	•Comprehends •Follow a procedure •Gives an example •Identify •Infers	•Combine •Describe •Differentiates •Lists •Sorts	•Analyze •Apply •Combine •Compare •Explain causes	•Build •Create •Design •Devises •Reflect

Affective Domain

- The affective domain includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes.

- The five major categories are listed from the simplest behavior to the most complex:
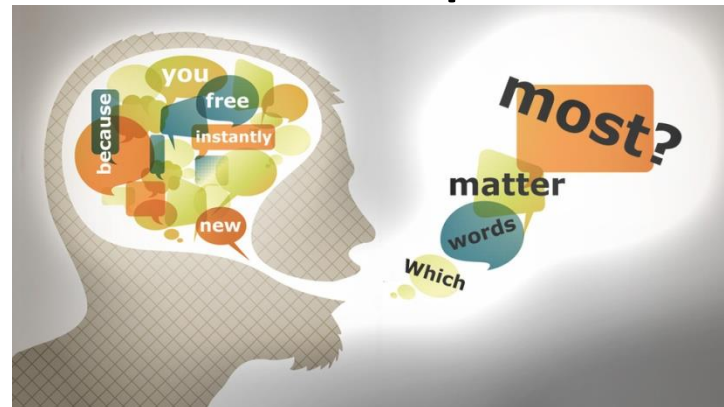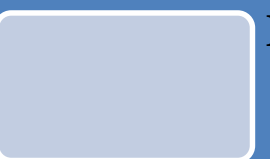
Affective Domain
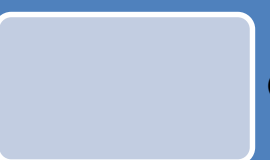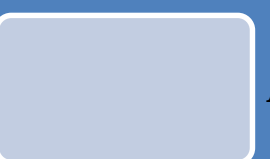
Category	Characteristics
Receiving Phenomena	Awareness, willingness to hear, selected attention
Responding to Phenomena:	Active participation on the part of the learners. Attends and reacts to a particular phenomenon.
Valuing:	The worth or value a person attaches to a particular object, phenomenon, or behavior. This ranges from simple acceptance to the more complex state of commitment.
Organization:	Organizes values into priorities by contrasting different values, resolving conflicts between them, and creating an unique value system.
Internalizing values (characterization)	Has a value system that controls their behavior. The behavior is pervasive, consistent, predictable, and most importantly, characteristic of the learner.

Psychomotor Domain

- The psychomotor domain includes physical movement, coordination, and use of the motor-skill areas.

- Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution.

Psychomotor Domain

Category	
Perception (awareness)	Perception (awareness)
Set:	Set:
Guided Response:	Guided Response
Mechanism (basic proficiency):	Mechanism (basic proficiency):
Complex Overt Response (Expert):	Complex Overt Response (Expert):
Adaptation	Adaptation
Origination	

Psychomotor Domain

Category	Characteristics
Perception (awareness)	The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation
Set:	Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's response to different situations
Guided Response:	The early stages in learning a complex skill that includes imitation and trial and error. Adequacy of performance is achieved by practicing.
Mechanism (basic proficiency):	This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency.
Complex Overt Response (Expert):	The skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinated performance, requiring a minimum of energy.
Adaptation	Skills are well developed and the individual can modify movement patterns to fit special requirements..
Origination	Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills.

Key Verbs

Using verbs such as these is beneficial to writing effective learning objectives

- Bend   grasp
- Handle   operate
- Reach   relax
- Shorten   stretch
- write
- differentiate (by touch)
- perform (skillfully)

Instructional Strategy Selection Chart

Instructional Strategy	Cognitive Domain	Affective Domain	Psychomotor Domain
Lecture, reading, audio/visual, demonstration, or guided observations, question and answer period	1. Knowledge	1. Receiving phenomena	1. Perception 2. Set
Discussions, multimedia CBT, Socratic didactic method, reflection. I.e. surveys, role playing, case studies, fishbowls, etc	2. Comprehension 3. Application	2. Responding to phenomena	3. Guided response 4. Mechanism

Instructional Strategy Selection Chart

Instructional Strategy	Cognitive Domain	Affective Domain	Psychomotor Domain
On-the-Job-Training , practice by doing ,simulated job settings	4. Analysis	3. Valuing	5. Complex response
Use in real situations. Also may be trained by using several high level activities coupled with OJT.	5. Synthesis	4. Organize values into priorities	6. Adaptation
Normally developed on own through self-study ,but mentoring and coaching can speed the process.	6. Evaluation	5. Internalizing values	7. Origination

Assessing the Psychomotor Domain

Tools for measuring acquisition of skills

For measuring student's acquisition of motor and oral skills there can be two tools

1. Observation of student performance
2. Evaluation of the student products

Observation of Performance

- **Holistic** observation is used when teacher gives a score or feedback based on pre established criteria of outstanding, average, deficient

- **Atomistic or Analytic** observation requires that a task analysis be conducted in order to identify the major subtasks in students performance

Evaluating student's Product

- Product and projects in different learning areas can be utilized in assessing students progress. For example drawing, models, construction paper product , designing

- Assessing students performance through portfolios

- Tools
  - I. Rating scale
  - II. Checklist

Rating Scales

- Rating scales: a series of categories that is arranged in order of quality

- It can be helpful in judging skills products and procedures

- Steps to follow in constructing a rating scale

  I.   Identify the quality of the product

  II. Arrange the scale

  III. Write

Example

Student Teacher _____ **Date** ____

Subject _____

Rate the student teacher on each of the skill areas specified below. Use the following code:

5 = Outstanding

4 = very satisfactory

3 = satisfactory

2 = fair

1 = Needs improvement

RUBRICS

Audience contact

Enthusiasm

Speech quality and delivery

Involvement of the audience

Use-non verbal communication

Use of questions

Directions of reinforcement

Use of teaching aids and instructional materials

Checklist

Differs from a rating as it indicates the presences or absence of specified characters.

It is basically a list of criteria upon which a students performance or end product is to be judged

Checklist is used by simply checking off the criteria items that have been met.

_____ Displays interest in the experiment

_____ Helps in setting up the experiment

_____ Participates in the actual conduct of the experiment.

_____ Makes worthwhile suggestions