

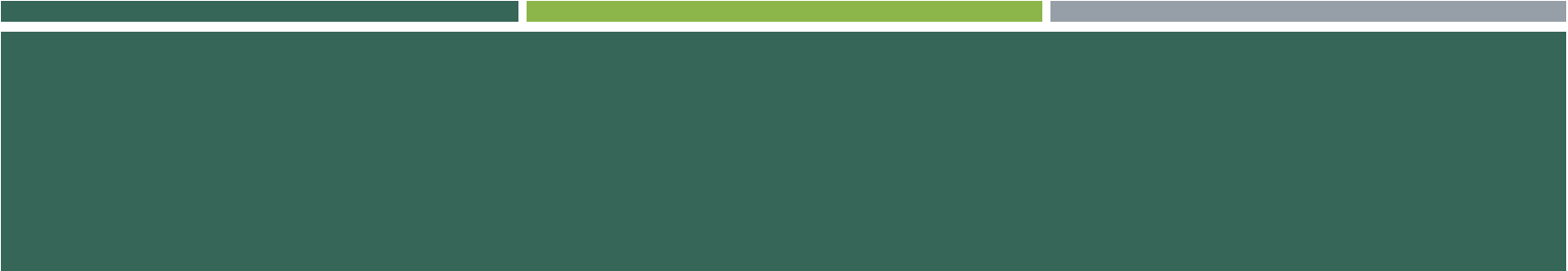


THE DIFFERENT BETWEEN COGNITIF DOMAIN, AFFECTIVE DOMAIN, AND PSYCHOMOTOR DOMAIN

ENDAH RETNOWATI

DASAR-DASAR PENGEMBANGAN STRATEGI PEMBELAJARAN MATEMATIKA

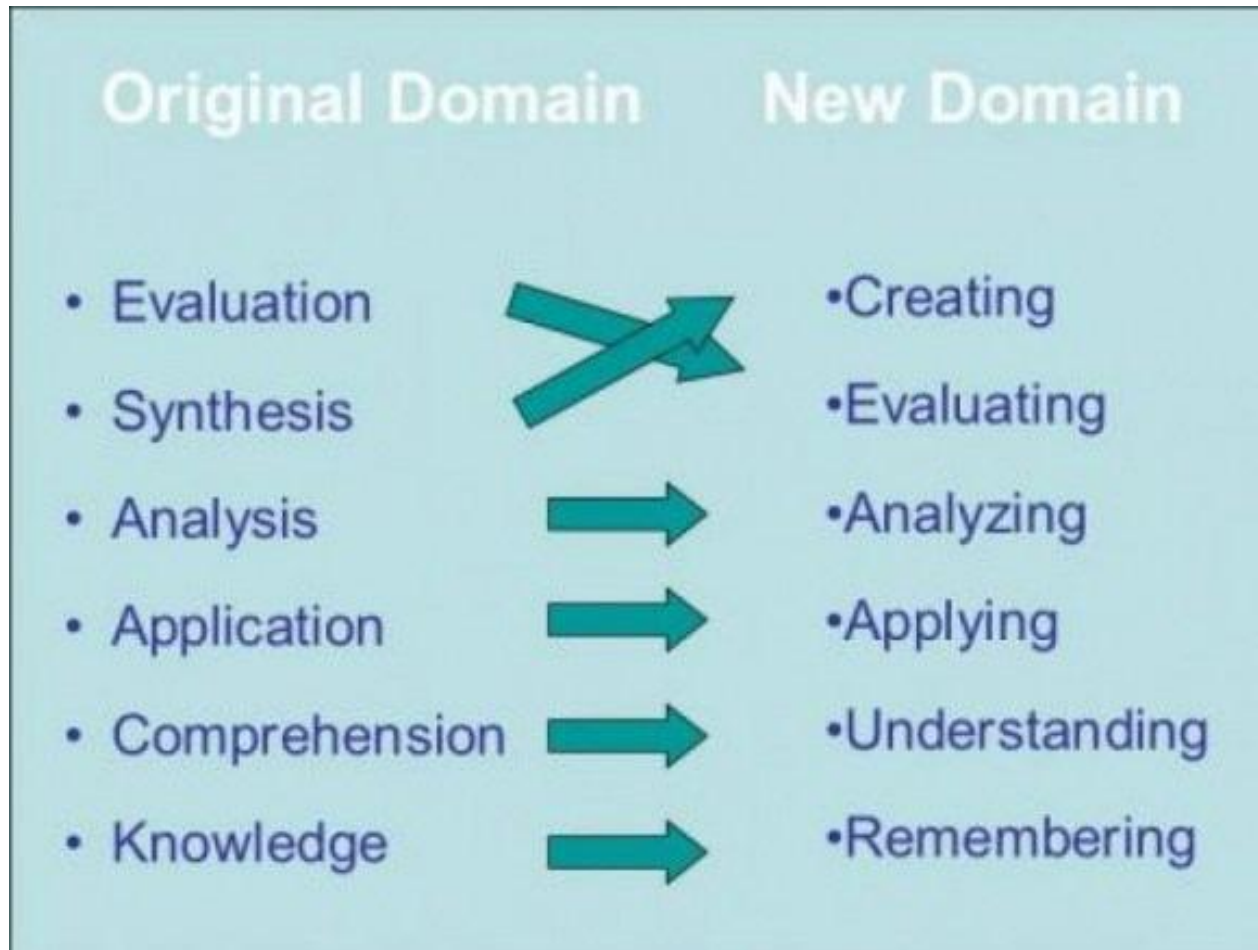


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- **Bloom's Taxonomy**
 - **Cognitive: mental skills (Knowledge)**
 - **Affective: growth in feelings or emotional area (Attitude or Self)**
 - **Psychomotor: manual or physical skills (Skills)**

COGNITIVE DOMAIN

- The Cognitive domain involves knowledge and the development of intellectual skill (Bloom, 1956). This includes the recall or recognition of specific facts, procedural pattern, and concept that serve in the development of intellectual abilities and skill.

LEVEL OF COGNITIVE DOMAIN (KRATHWOHL AND ANDERSON, 2001)



REMEMBERING

Remembering is recall previous learned information.

Example in math learning :

- Remembering the definition of cube
- The student can list some type of solid geometry

UNDERSTANDING

Understanding is comprehending the meaning, translation, interpolation, and interpretation of instruction and problems. State problem in one's own words.

Example in math learning :

- Mention the items in the class that has the shape of a cilinder

APPLYING

Applying is use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situation in the work place.

Example in math learning :

- Solving the problem about area of triangle with the true formula

ANALYZING

Analyzing is separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.

Example :

- The students can analyze the elements to find the volume of sphere

EVALUATING

Evaluating is make judgments about the value of ideas or materials.

Example in math learning :

- The student knowing the reason why 2 is irrational number

CREATING

Creating is builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure. Example :

- The students can make some box from carton which the shape like cube



AFFECTIVE DOMAIN



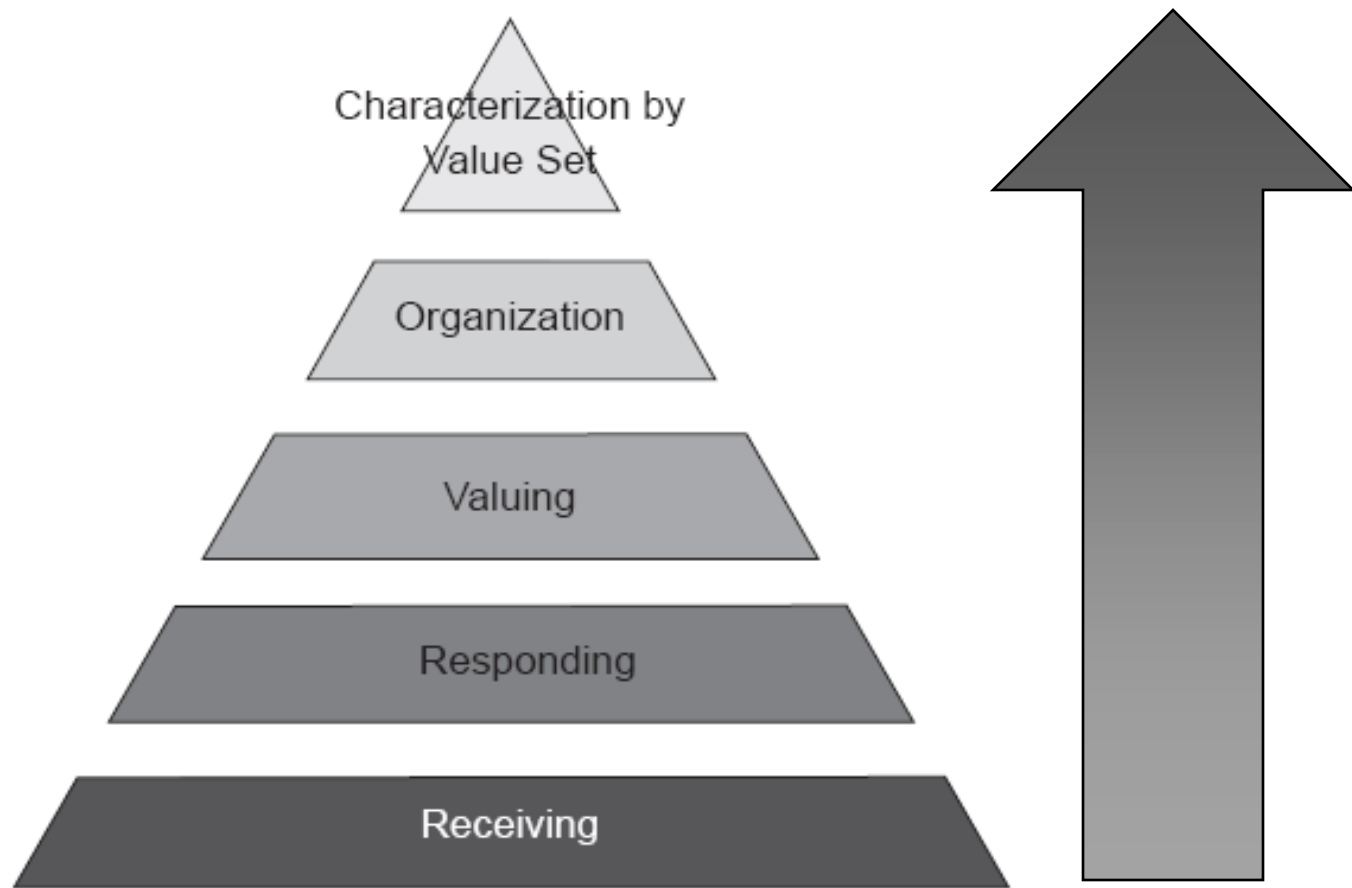


What is the affective domain?



The affective domain (Krathwohl, Bloom, Masia, 1974) includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes.

FIVE MAJOR CATEGORIES

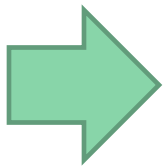




The first level of the affective taxonomy has been labeled “receiving” and refers to a learner’s readiness to focus his or her attention on a particular issue



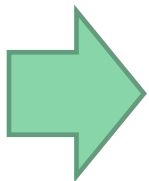
The second level, “responding,” refers to showing a small commitment to an idea by reacting to or actively responding to the information that has been “received”.



At the third level, “valuing,” valuing is based on the *internalization* of a set of specific values or attitudes, where clues to these values are expressed in the learner’s stable overt behavior



The fourth level of the taxonomy, “organization,” reflects the integration of a new value into one’s general set of values



The fifth and highest level in the affective taxonomy is referred to as “characterization by a value or value set” and occurs when a learner’s behavior is “pervasive, consistent, and predictable,” as if it has been adopted as a lifestyle

Category	Example and Key Words (verbs)
Receiving	Examples: Listen to mathematics teachers with respect. Listen for and remember the new material of mathematics. Key Words: acknowledge, asks, attentive, courteous, dutiful, follows, gives, listens, understands
Responds to Phenomena	Examples: Participates in mathematics class discussion. Gives a presentation. Question new ideals, concepts, models, etc. in order to fully understand them. Know the safety rules and practice them Key Words: answer, assists, aids, complies, conform, discusses, greets, helps, labels, performs, present, tells

Valuing	Examples: Appreciate the different opinion about solving mathematics problems. Shows the ability to solve mathematics problems. Propose a plan to social improvement and follows through with commitment. Key Words: appreciates, cherish, treasure, demonstrates, initiates, invites, joins, justifies, proposes, respect, share.
Organization	Examples: Explains the role of systematic planning in solving mathematics problems. Key Words: compares, relates, synthesizes

Internalizes Values (characterization)

Examples: Show self-reliance when working independently. Cooperates in group activities (displays teamwork in mathematics). Uses an objective approach in mathematics problem solving. Displays a professional commitment to ethical practice on a daily basis. Revises judgments and changes behavior in light of new evidence. Values people for what they are, not how they look.

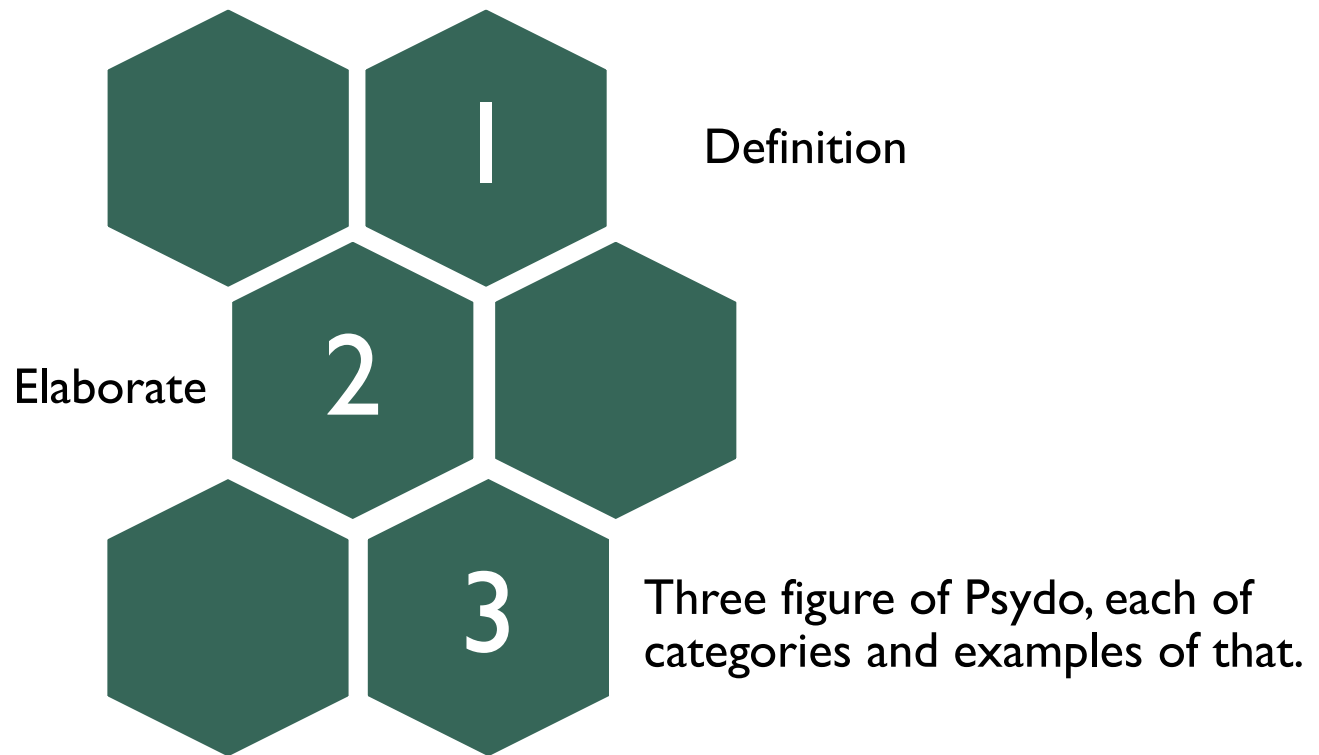
Key Words: acts, discriminates, displays, influences, modifies, performs, qualifies, question, revises, serves, solves, verifies



PSYCHOMOTOR DOMAIN



WHAT WE WILL LEARN ABOUT PSY-DO?



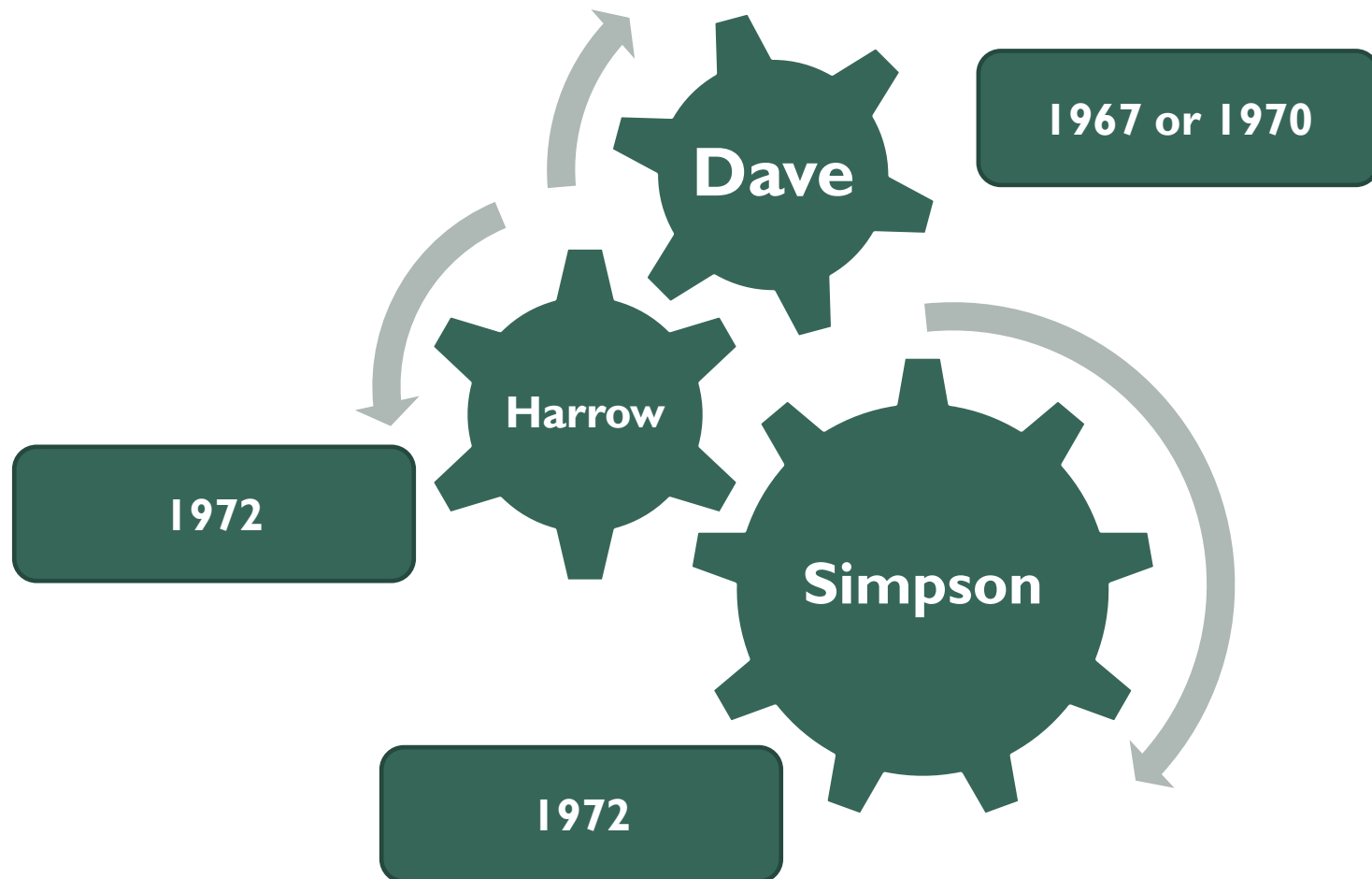
I. DEFINITION

- Part of Bloom's Taxonomy of Learning
- focuses on teaching skills related to motor tasks, including physical and manual activities, or other tasks

2. ELABORATE

- all about "doing"
- Through imitation, practicing and habituating new skills

3.THREE POPULAR FIGURE AND EACH OF CATEGORIES





I) DAVE (1967 OR 1970)



1. Imitation (*make a copy of something or activities*)

I.V : Attempt, copy, duplicate, imitate, mimic.

2. Manipulation (*produce the product in a recognizable fashion by following general instructions*)

I.V : Complete, follow, play, perform, produce, implement, build, re-create, execute

3. Precision (*produce the product, with accuracy, proportion, and exactness*)

I.V : Achieve automatically, easily, excel expertly, perform masterfully, calibrate, demonstrate, master, perfectionism, show

4. Articulation (*modify the skill or product the product to fit new situations*)

I.V :
Adapt, alter, customize, originate, construct, combine, creates, customize, modifies, formulate.

5. Naturalization (*completion of one or more skills with ease and making the skill automatic with limited physical or mental exertion*)

I.V : Naturally, perfectly

Example of each categories :

1. Imitation

Example : imitating the ways which teachers used to solve mathematics problems like calculate the area of triangle.

2. Manipulation

Example : student make/produce a right - trapezoid from two rectangle paper.

3. Precision

Example : students could multiply the two numbers that are great value exactly.

4. Articulation

Example : students can make a pencil case which have cylinder shape use their knowledge about radius, circle, rectangle.

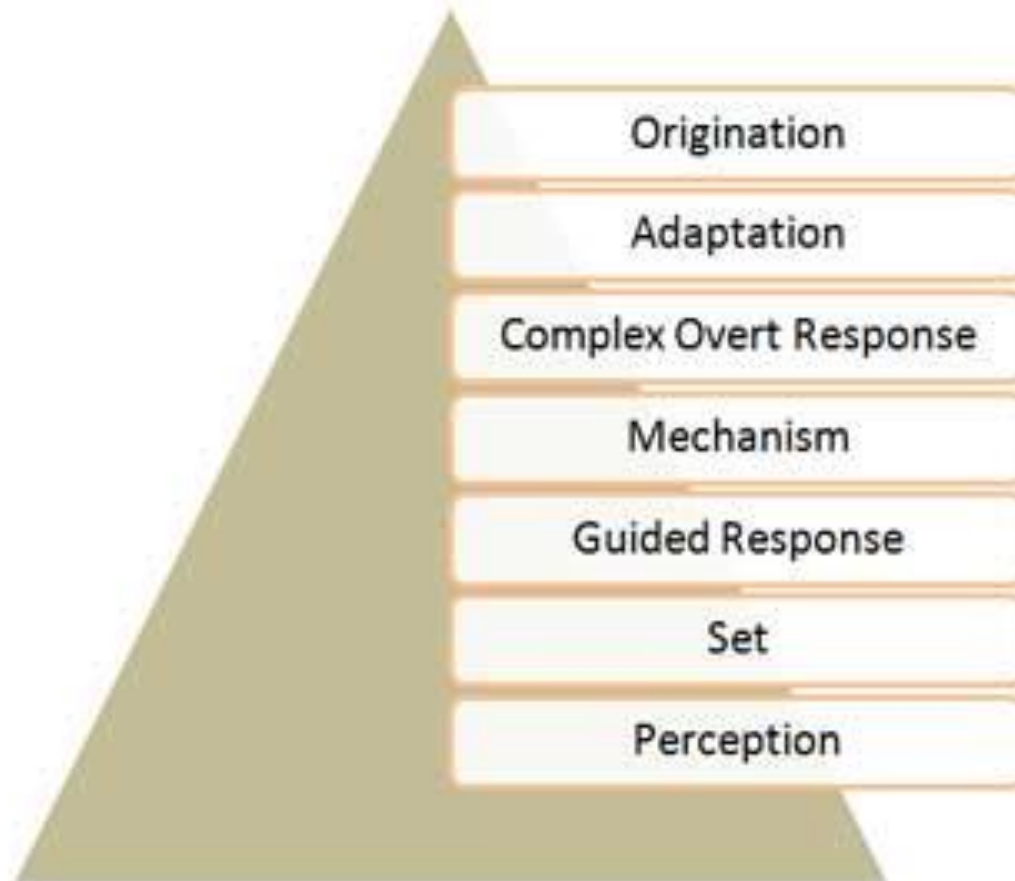
5. Naturalization

Example : students can solve arithmetic operations of integers fastly and correctly.



2) SIMPSON (1972)





Categories	Definition	Example
1) Perception Possible verbs : describes, detects, Identifies, relates	The ability to use sensory cues to guide motor activity	 Students know that the shape of the pencil case is a cylinder by identifying and matching its characteristics to a cylinder.
2) Set Possible verbs : describes, detects, identifies, relates, demonstrate, show, reacts, responds, volunteers.	The readiness to act	Students can explain her/his homework about geometry in front of class or to her/his friends and teachers with confidence.
3) Guided response Possible verbs : attempt, imitate, try, copies, traces, follows, react, reproduce.	The early stage of learning a complex skill	Students can calculate the surface area of a cylinder by following the instructions of her/his teachers.

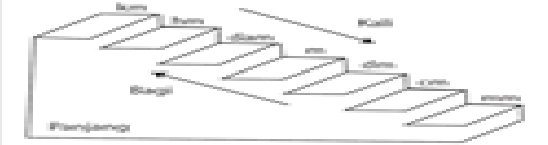
Categories	Definition	Example
4) Mechanism Possible verbs :Assembles, calibrates, construct, dismantles, displays, fasten, fixes, grinds, heat, manipulates, measures, mends, mixes, organizes, sketches.	The ability to perform a complex motor skill	Students can make a cube and pyramid.
5) Complex overt response / expert Possible verbs :Assembles, calibrates, construct, dismantles, displays, fasten, fixes, grinds, heat, manipulates, measures, mends, mixes, organizes, sketches.	The ability to perform the complete psychomotor skill correctly	Students can make a house miniature from pyramid and cube.
6) Adaption Possible verbs : adapt, change, modify, revise, alters, rearranges, reorganizes.	Can modify motor skills to fit a new situation	Using skills which developed from learning how to draw a cosinus graph manually to draw using geogebra.

Categories	Definition	Example
7) Origination	Creating new movement patterns to fit a particular situation or specific problem	Students can create mathematical modeling to avoid congestion in Yogyakarta.



2) HARROW (1972)



Categories	Definition	Example
1) Reflex movements Possible verbs : Respond, react	Reactions that are not learned such as an involuntary reaction	Teachers ask students about arithmetic operation. When students believe that they can answer it, they raise their hand first, then answer it.
2) Fundamental movements Possible verbs : Grasp, throw, walk	Basic movements like as walking or grasping	Students will learn about distance. So, when they move from one seat to the another seat, they can find the distance between two seats.
3) Perceptual abilities Possible verbs : Draw, write, catch	Response to sensory stimuli such as visual, auditory, kinesthetic, or tactile discrimination	Draw a geometry objects like triangle, cube, circle, prism, etc.
4) Physical abilities Possible verbs : Agility, endurance, strength	Stamina needs to be developed to advance such as strength and agility	 Students can learn about ladder unit of lengths in mathematics learning using stair in their home or schools (outdoor learning that needs a strength).

Categories	Definition	Example
5) Skilled movements	Advanced learned movements such as sport or acting	Students do a role playing to learn about social arithmetics such as sell – buy. There are some students can play as buyers and the others can play as sellers.
6) Non-discursive communication	Effective body language as one would find in gesture and facial expressions	Students bravely come forward to the class to answer and explain about trigonometry task when her/his teachers ask.

REFERENCES

- Citation: Huitt, W. (2011). Bloom et al.'s taxonomy of the cognitive domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved [date], from <http://www.edpsycinteractive.org/topics/cognition/bloom.html> [pdf]
- Krathwohl, D.R., Bloom, B.S., Masia, B.B. (1974). *Taxonomy of Educational Objectives, The Classification of Educational Goals. Handbook II: Affective Domain*. New York: McKay Company, Inc.
- A Big Dog, Little Dog and Knowledge Jump Production. (2015). *Bloom's Taxonomy: The Affective Domain*. Retrieved September 16, 2015, from http://www.nwlink.com/~donclark/hrd/Bloom/affective_domain.html
- Susan, Phillips. *Affective Learning in General Education*. University of Michigan – Flint.
- A Big Dog, Little Dog and Knowledge Jump Production. (2015). *Bloom's Taxonomy: The Psychomotor Domain*. Retrieved September 16, 2015, from http://www.nwlink.com/~donclark/hrd/Bloom/affective_domain.html
- Citation: Huitt, W. (2003). The psychomotor domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved September 16, 2015, from <http://www.edpsycinteractive.org/topics/behavior/psymtr.html>
- Learning Taxonomy Psychomotor. Retrieved September 16, 2015, from http://assessment.uconn.edu/docs/LearningTaxonomy_Psychomotor.pdf at 12.54 p.m



THANK YOU 😊