Classification of Educational Objectives

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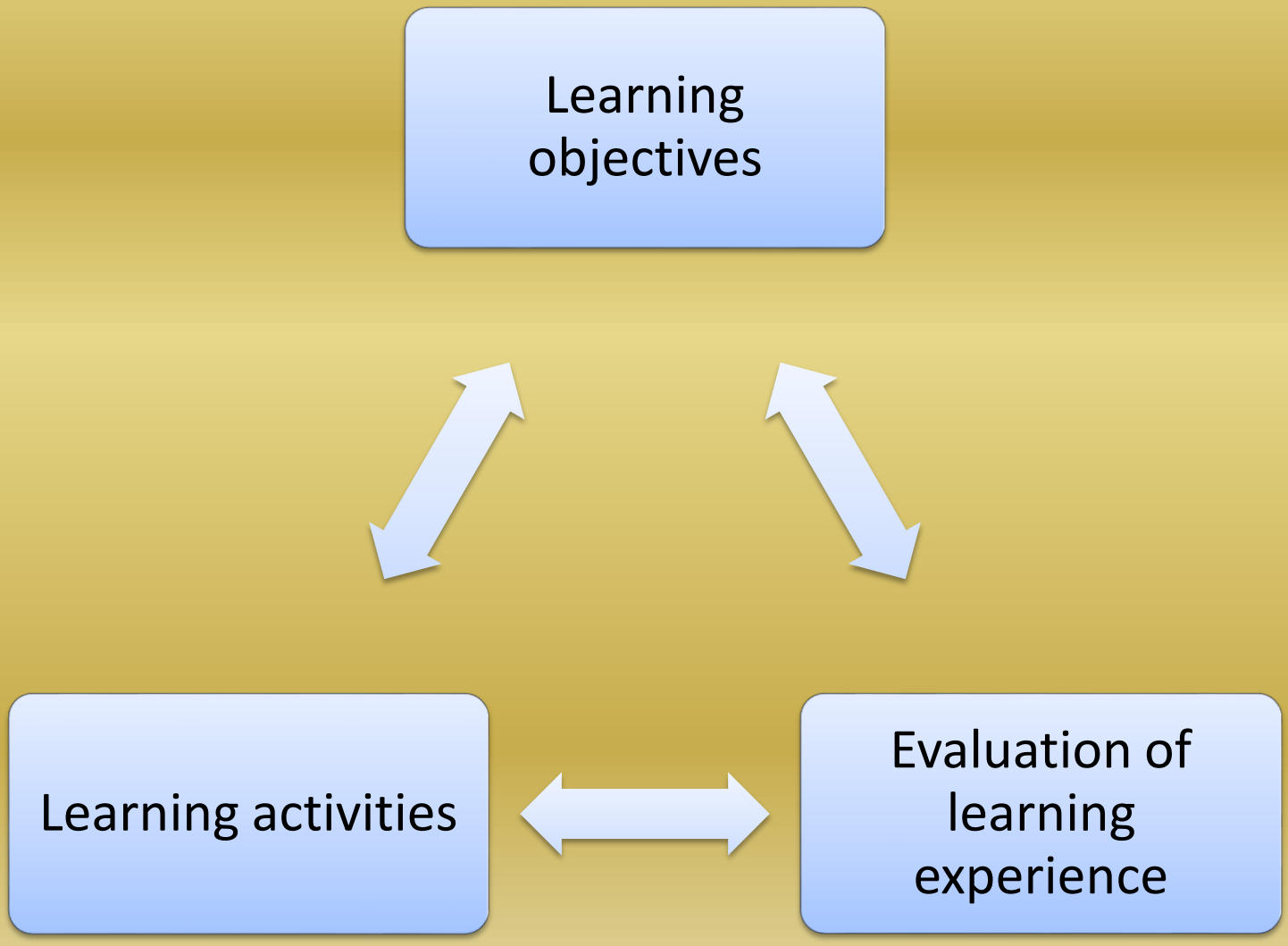
The use of bloom's taxonomy is widespread among educators as it helps them in:

Creating lesson plans, learning activities and instructional strategies based on the complexity of the subject matter

Curriculum mapping and designing courses

Creating assessments to measure the learning outcomes of the students

Constructive Alignment



Educational Objectives (Bloom's taxonomy)

- Three domains as Cognitive , Affective, Psychomotor
  - Cognitive Domain – 1956 – B.S. Bloom
  - Affective domain – 1964 - D.R. Krathwohl
  - Psychomotor domain – 1972 – E.J. simpson

- Cognitive domain
  - Development of the cognitive skills (intellectual abilities)

- Affective domain
  - Skills in the affective domain describe the way people react emotionally & they typically target the awareness & growth in attitudes, emotion & feelings.

- Psychomotor domain
  - Skills in the psychomotor domain describe motor activities that can be controlled, managed, trained & developed by the mental ability.

Classification of Objectives

Cognitive Domain

[Developing the skills of brain /

Intellectual abilities]

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation

Affective Domain

[Developing Attitudes and understanding values]

Receiving

Responding

Valuing

Organization

Characterization

Psychomotor Domain

[Developing the psychomotor abilities which are controlled by the brain]

Perception

Set

Guided Response

Mechanism

Complex overt Response

Adaptation

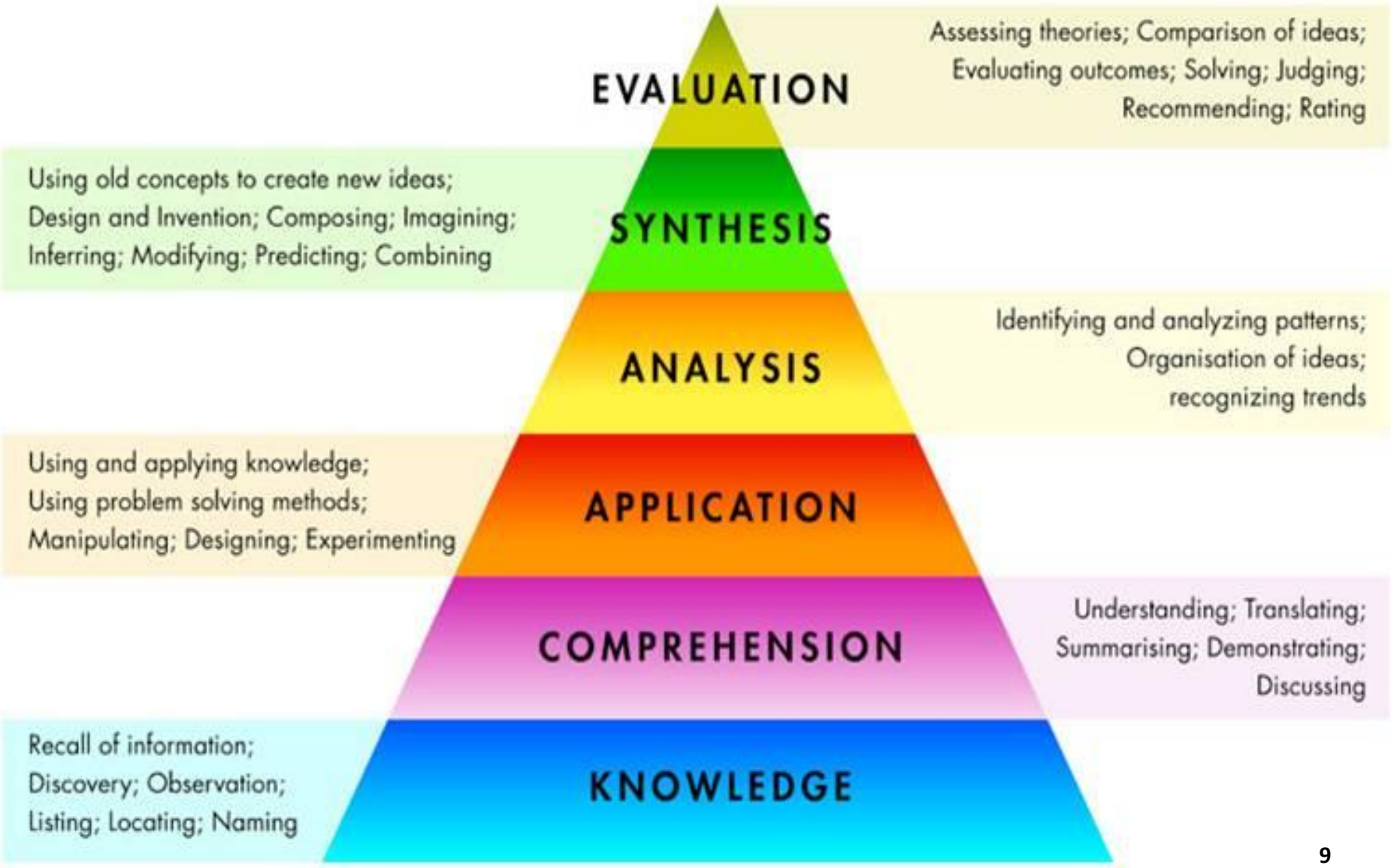
Origination

Gruop Activity

Cognitive Domain

- (Knowledge)
- (Comprehension)
- (Application)
- (Analysis)
- (Synthesis)
- (Evaluation)

BLOOMS TAXONOMY



1.Knowledge

- **Exhibit memory of previous learned materials by recalling facts, terms, basic concepts & answers.**
- It is the lowest level of bloom's taxonomy hierarchical model which encompasses the ability to recall the learned information. Before a student can understand a concept, he must be able to recall the information.

2. Comprehension

The ability of describing things related to what he learnt previously

Student translates, comprehends, or interprets information based on prior learning.

At this stage, students are able to understand, interpret and summarize the concepts learned in the knowledge phase in their own words

(Translation)
(Interpretation)

(Extrapolation)

- 2.1.Translation - Ability to translate the given form into another form
  - Translate language to another language
  - Writing the meaning of a poem
  - Translate language into picture / graph / table (concept map)
  - Translate picture into language
- 2.2 Interpretation –
- Ability to interpret patterns , trends
  - Complete number / picture pattern
  - - providing a paragraph & ask questions

2.3 (Extrapolation)

- Predication -
- Predicating facts using given information

3. **Application**

- Ability to apply learned theories, principles, concept in new situation.
- At this stage, students are able to apply facts, ideas, and concepts into another context.
- using new knowledge solve problems in new situations.
- Application refers to the ability to use learned material in new & concrete situation.

Analysis

The ability of analyzing the elements and relationships of a learnt context.

At this stage, students are finally able to break down the concepts into individual parts, think critically to draw a connection between the broken parts, analyze, draw inferences and make attributions.

The Cognitive Domain
Analysis

4. **Analysis -**

- Examine & break information into parts & show relationships among parts.

- Learning outcomes here represent a higher intellectual level than comprehension & application

Synthesis

Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.

5. Synthesis

- At this stage, students can demonstrate their knowledge by applying the learned concepts to create something meaningful. It could involve developing an application or part of a machine, designing a website, creating a report or a video.

- Making a new whole adding learned elements.
- This is a mental product not a physical product

Eg: create a poem

create a handicraft

composing, proposing hypotheses, planning , tool designing, writes a research proposal, plans solutions, imagination abilities

Evaluation

At this stage, students make judgments about the concepts, defend or criticize them based on certain criteria and standards.

Requires the formation of judgments and decisions about the value of methods, ideas, people, products. Must be able to state the bases for judgments (e.g., external criteria or principles used to reach conclusions.)

-The ability of criticizing the good and bad or advantages or disadvantages etc..of a learnt fact.

1. Student applies the given format of the official letter to make a request from the Ministry of education.
2. Student differentiates the key features of each type of letter
3. Student states the subject, verb, & object of a given sentence.
4. Student calculates an area using the given length & width
5. Student changes the given active voice sentences into passive

6. The student derives a set of formula to represent the grammatical relation of the given sentences in active voice
7. Student creates a poem about the motherland.
8. Student names the parts of a tree.
9. When provided a picture pattern the student draws the next picture pattern.
10. When provided the grammatically incorrect sentences, the student rewrites them correctly.
11. Student states the father of counseling.
12. students will be able to **define** acceleration.

13. students will be able to **label** different parts of the human brain.

14. student **writes** different types of number sequences.

15. students **forecast** the annual revenue of any company using its past data.

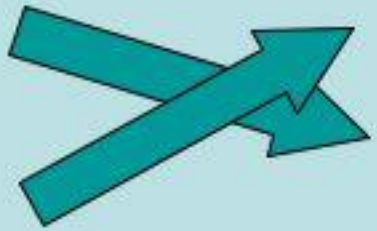
16. students will be able to **assess** the environmental impact of coal mining.

17. students will be able to **measure** the effectiveness of project-based learning.

18. students will be able to **compose** the scientific name of an organism.

19. students will be able to **come up** with the innovative ideas to tackle climate change.

20. Student **criticizes** the novel Gamperaliya.

Original Domain		New Domain
• Evaluation		•Creating
• Synthesis		•Evaluating
• Analysis		•Analyzing
• Application		•Applying
• Comprehension		•Understanding
• Knowledge		•Remembering

Five levels of Affective Domain

- The Affective domain addresses interests, attitudes, opinions, appreciations, values, & emotional sets.
- This domain includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes.

1. Receiving – willing to attend
2. Responding – willing to participate
3. Valuing– willing to be involved
4. Organizing - willing to be an advocate
5. Characterization by a value or value complex –

willing to change one's behavior, life style or way of life

The affective domain describes learning objectives that emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. Affective objectives vary from simple attention to selected phenomena to complex but internally consistent qualities of character and conscience. We found a large number of such objectives in the literature expressed as interests, attitudes, appreciations, values, and emotional sets or biases. [from Krathwohl et al, 1964]

Internalization refers to **the process whereby your affect toward something goes from a general awareness level to a point where the affect is internalized and consistently guides or controls your behavior**.

Therefore, with movement to more complexity, you become more involved, committed, and internally motivated.

1. **Receiving**

Receiving is being aware of or sensitive to the existence of certain ideas, material, or phenomena and being willing to attend them.

One is expect to be aware of or to passively attend to certain stimuli or phenomena. Simply listening and being attentive are the expectations.

- The lowest level
- The st passively pays attention
- Without this level no learning can occur
- Passively attend to certain stimuli or phenomena
- Simply listening & being attentive
- No responses

2. **Responding**

One is required to comply with given expectations by **reacting** to certain stimuli. One is expected to obey, participate, or respond willingly when asked or directed to do something.

Responding is committed in some small measure to the ideas, materials, or phenomena involved by actively responding to them.

- Responding refers to active participation on the part of the ss.
- At this levels not only attends to a particular phenomenon.

But also reacts to it in some way.

3. **Valuing**

Display behavior consistent with a single belief or attitude in situations where one is neither forced or asked to comply. One is **expected to demonstrate a preference or display a high degree of certainty and conviction.**

Valuing is willing to be perceived by others as valuing certain ideas, materials, or phenomena.

- Valuing is based on the internalization of a set of specified values.

4. Organization

Organization is to relate the value to those already held and bring it into a harmonious and internally consistent philosophy.

One is expected to organize likes and preferences into a value system and then to decide which ones will be dominant.

- The student can put together different values, information & ideas & accommodate them within his / her own schema; comparing relating & elaborating on what has been learned.

- Integrating a new value into one's general set of values. Giving it some ranking among one's general priorities.

Characterizing

Characterization by value or value set is to act consistently in accordance with the values he or she has internalized.

All behavior displayed is consistent with one's value system. Values are integrated into a pervasive philosophy that never allows expressions that are out of character with those values. Evaluation at this level involves the extent to which one has developed a consistent philosophy of life (e.g., exhibits respect for the worth and dignity of human beings in all situations).

- In this stage ss have some value system which control their behavior. The behavior is pervasive, consistent & predictable.
- At this level, the person has held a value system that has controlled his behavior for a sufficiently long time that characteristic " life style" has been developed.

- values the importance computer networking
- Motivates to find the facts related to the National heros in Sri Lanka
- Accepts the use of information communication technology in the world of work and in other fields.
- Student expresses willingness to observe his / her environment accurately
- Student follows the security precautions related to the instruments in getting accurate observations
- Student values the importance of decision taking on accurate observations

4. Student compares & contrasts the official letters with other two types of letter
5. Students translates given pali paragraph into sinhala
6. Student states the next number of a given series of numbers

7. Student applies the given format of the official letter to make a request from the Ministry of education.
8. Student calculates an area from a given length & width
9. Student changes given active voice sentences into passive

10. Student differentiates the key features of each type of letter
11. Student states the subject, verb, & object of a given sentence.

12. Student derives a set of formula to represent the grammatical relation of sentences in three tenses in active voice
13. Student creates a poem about the mother land

14. Student criticizes the novel Gamperaliya

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, procedures, or techniques in execution.

- Psychomotor learning is the relationship between cognitive functions & physical movement.

- Psychomotor learning is demonstrated by physical skills such as movement, coordination, manipulation.

The **psychomotor domain**, which links mental activity with physical movements, skills, and reactions to environmental stimuli,

Several models of the psychomotor domain have been proposed over the years. This lesson describes the widely recognized model set forth by educational researcher **Elizabeth J. Simpson**.

The psychomotor domain of learning helps our brains to coordinate physical tasks

Seven levels of Psychomotor Domain

1. Perception - Sensory cues guide motor activity.

2. Set - Mental, physical, and emotional dispositions that make one respond in a certain way to a situation.

3. Guided Response - First attempts at a physical skill. Trial and error coupled with practice lead to better performance.

4. Mechanism - The intermediate stage in learning a physical skill. Responses are habitual with a medium level of assurance and proficiency.

5. Complex Overt Response - Complex movements are possible with a minimum of wasted effort and a high level of assurance they will be successful.

6. Adaptation - Movements can be modified for special situations.

7. Origination - New movements can be created for special situations.

1. **Perception**

- The ability to use sensory cues to guide motor activity.

- This ranges
  - from sensory stimulation
  - Through cue selection
  - To translation

Perception is the most basic level of being able to process sensory information (i.e., things we see, hear, smell, etc.) and respond accordingly.

- Eg: listening to the sounds made by violin strings before tuning them.

2. **Set**

Set is about how we are ready for something to happen, or knowing beforehand what to do in a given situation.

- Readiness to act. It includes mental, physical & emotional set.

3. Guided response

- Guided response is concerned with the early stages in learning a complex skill. It includes imitation & trial & error
- **Guided response** describes an early stage of learning when complex tasks are first attempted or mimicked with the guidance of an expert. This commonly involves trial and error and the process of incremental improvement.

- Two ways to guide --- 1.telling ----- 2. doing (demonstrate)

4. Mechanism

- This is the intermediate stage in learning a complex skill.

- **Mechanism** is when we use preliminary or pre-existing skills to perform a task.

- Learned responses have become habitual & the movements can be performed with some confidence & accuracy (proficiency).
  - Use a personal computer
  - Repair a leaking tap
  - Drive a car

5. Complex overt Response

- Simply, the ability to perform the complete psychomotor skills correctly.
- In other words, complex movement are possible with a minimum of wasted effort & a high level of assurance.
- Proficiency is indicated by a quick, smooth, accurate performance, requiring a minimum of energy.

- Eg:
  - Operates a computer quickly & accurately
  - Displays competence while playing the piano
  - Operates a computer skillfully
  - Demonstrates correct form in swimming
  - Repairs electronic equipment quickly & accurately

6. Adaptation

- In simply, adaptation is that movements can be modified for special situations

- In more detail, skills are well developed & the individual can modify movement patterns to fit special requirements

7. Origination

- **Creating new movement patterns** to fit a particular situation or specific problem.

- Learning out comes emphasize creativity based upon highly developed skills.

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- Student draws diagrams of instruments used to get accurate observations
- Operates a computer skillfully
- Demonstrates correct form in swimming
- Performs skillfully on the violin
- Repairs electronic equipment quickly & accurately

Writing specific objectives

- The Specific objectives should be
  - Observable
  - Measurable
  - Specific behavior

- The following are the features of specific objectives

1. **Doer -** Doer is normally the student
2. **Observable behavior**

   - There should be observable behavior as proof of learning.
3. **The output of the behavior**

   - There should be some outcome or product of the behavior that should be observable.
4. **On which condition the behavior is performed**

   -sometimes the behavior is expected to be performed under certain conditions.
5. **Criteria under which the behavior is achieved –**

- When provided with a list of names of novels / the students /select /the name of the novel written by Martin Wicramasinghe / accurately.

- When provided with a name list of crops,/ students /select /the main export crop in Sri Lanka /correctly.

- The student writes two methods of water pollution.

- A more and more specific objective can contain all the five features. However, 2nd and 3rd features are essential.