

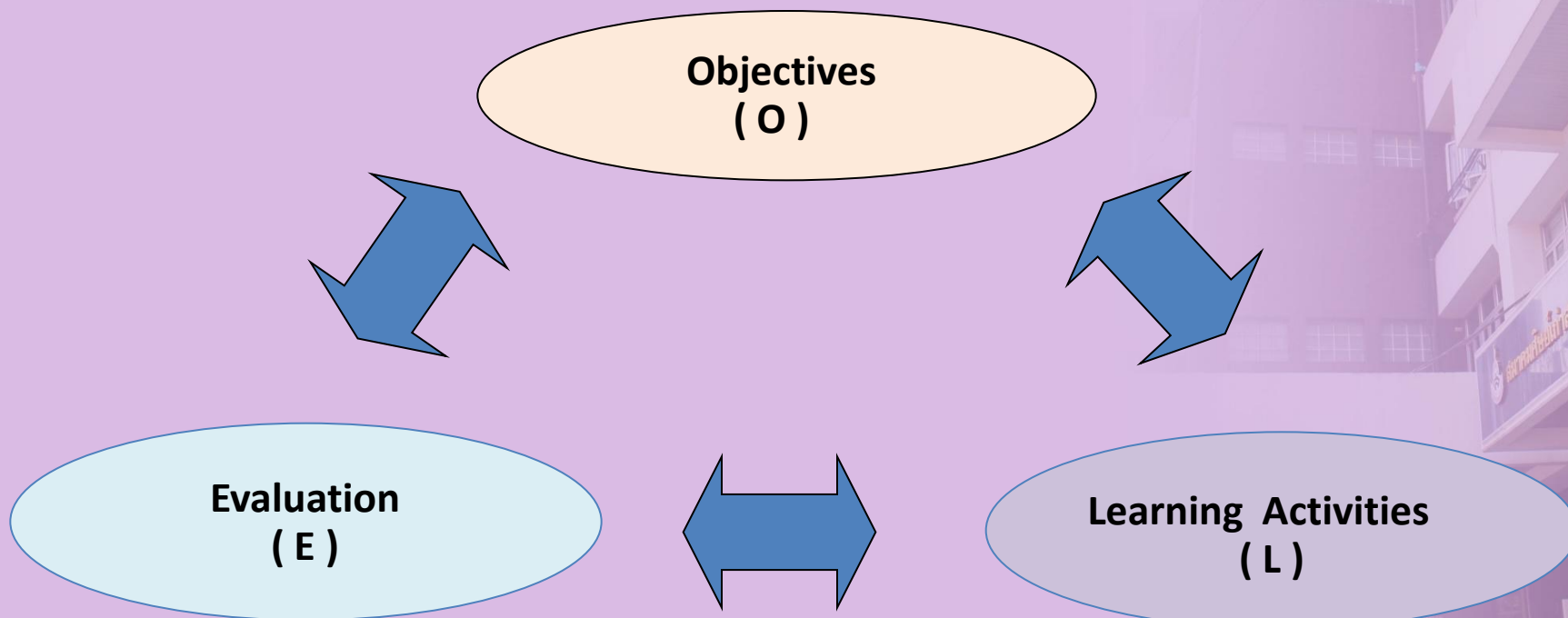


Assessment and Evaluation

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OLE Model

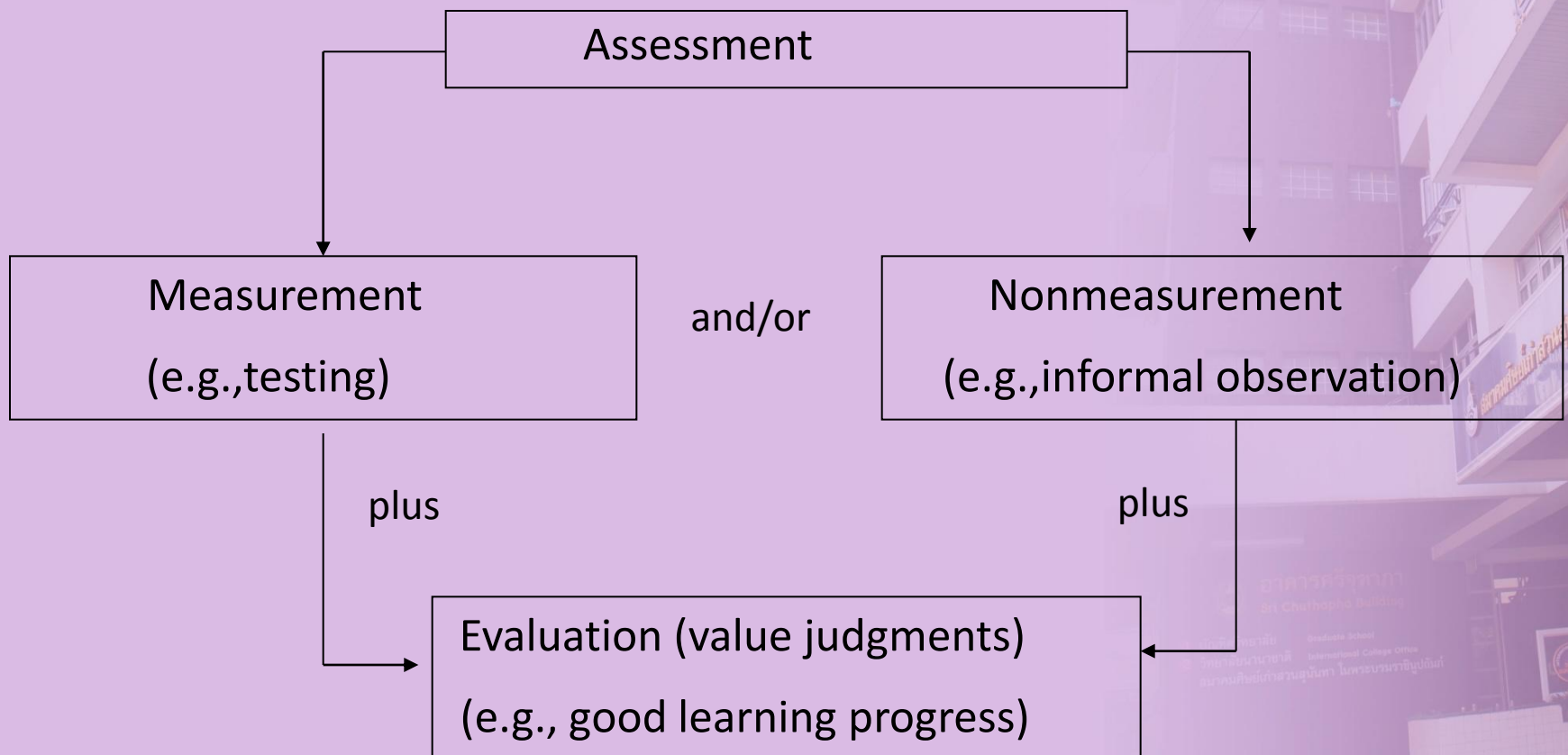


Process for the Development of Higher Level Thinking Skills





The Assessment-Evaluation Process





Assessment

Assessment is a variety of procedures used to obtain information about **student learning**.

Includes: measurement and non-measurement

- paper-and-pencil tests
- authentic task
- teacher observations
- student self-report



Measurement & Non-measurement

Measurement is the assigning of numbers to the results of a test or other type of assessment according to specific rule (e.g., counting correct answer).

Non-measurement is the assigning of value of performance (e.g., rating scale).



Test

A **test** means a **process** or **device** that yields information about a sample of behavior or cognitive process in a quantified manner.

Process: Pretest – Posttest , Formative Test – Summative Test, etc.

Device: Multiple Choice, True – False, Matching, Short Answer, Essay, etc.



Evaluation

Evaluation is a process of integrating information from many sources and using it to make judgments about students at a particular point based on a set of **criteria**.

Student's Score (%)	Grade	Result/Remark
86.00 – 100	A	4.00
82.00 – 85.00	A-	3.75
...
46.00 – 49.00	D-	0.75
0.00 – 45.00	F	0
-	I	Incomplete
-	W	Withdraw



Questions to Ask in Designing Assessment

- What learning outcomes/ objectives will be assessed?
- What types of assessment will be used to evaluate students' learning?
- How long will the test be in terms of time and number of items?
- How much will each objective be worth in terms of weighting and number of items?



First Question

What learning outcomes/ objectives will be assessed?





Learning Objectives

- Learning outcomes are designed for the course and using broad goals based on students' needs, society needs, and disciplines of the subject.
- Learning objectives are designed for the topic and using action words based on Bloom's Taxonomy.



Bloom's Taxonomy

Three major areas of objectives

1. **Cognitive Domain** : Knowledge outcomes and intellectual abilities and skills
2. **Affective Domain** : Attitudes, interests, appreciation, and modes of adjustment
3. **Psychomotor Domain** : Perceptual and motor skills



Hierarchy of Cognitive Domain

- knowledge
- Comprehension
- application
- analysis
- synthesis
- evaluation

Lower- Order Thinking Skills

Higher- Order Thinking Skills



Lower-Order Thinking Skills

- **knowledge** : recall information, define, repeat, list, name, label, memorize
- **comprehension** : understand information, discuss, explain, restate, report, tell, locate, express, recognize
- **application** : use methods, concepts, principles, apply, practice, demonstrate, illustrate, operate



Higher-Order Thinking Skills

- **analysis** : dissect parts, detect relationships, diagram, compare, differentiate, criticize, debate
- **synthesis** : put together parts, compose, construct, formulate, manage, prepare, design, plan
- **evaluation** : judge value of ideas, appraise, predict, assess, select, rate, choose



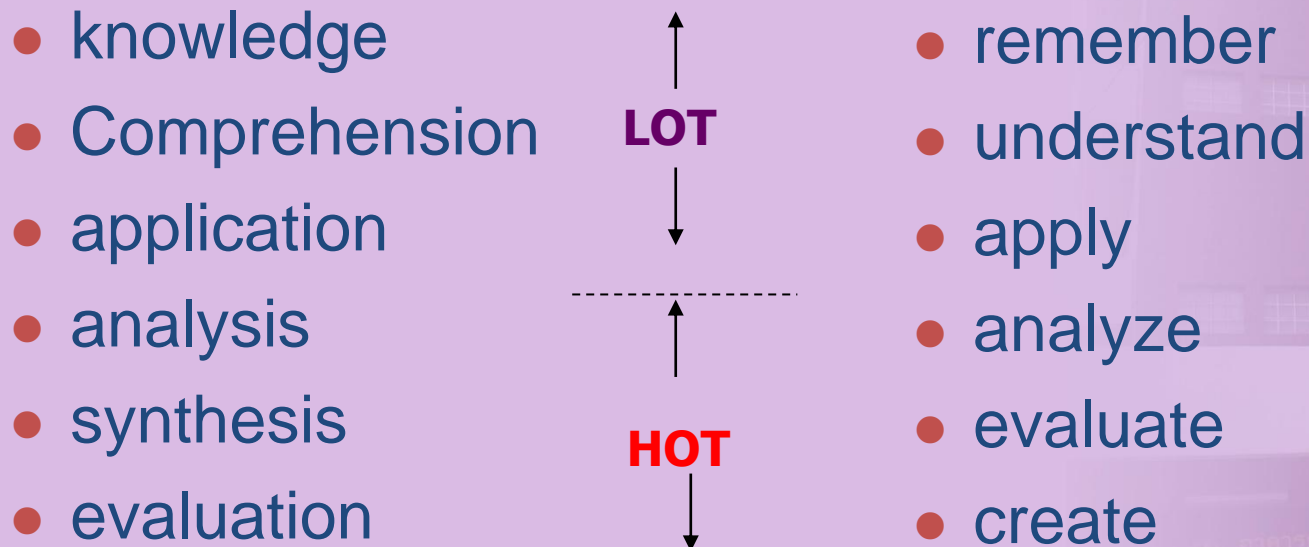
Revised Bloom's Taxonomy

- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Addison Wesley Longman.



Revised Bloom's Taxonomy

- Gives slightly different names to the six levels of the hierarchy

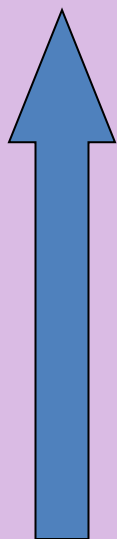


- The last two categories have been reversed, putting create as the most complex level.



Krathwohl's Affective Taxonomy

HIGH



LOW

- characterizing
- organizing
- valuing
- responding
- receiving



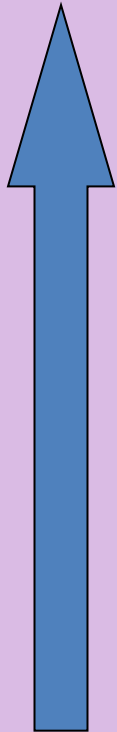
Krathwohl's Affective Taxonomy

- (1) **receiving** : listens to ideas, willingness to pay attention
- (2) **responding** : answers questions about ideas, reacts voluntarily or complies
- (3) **valuing** : thinks about how to take advantage of ideas, able to explain them well , acceptance
- (4) **organizing** : commits to using ideas, incorporates them into activity, rearrangement of value system
- (5) **characterizing** : incorporate ideas completely into practice, recognized by the use of them , incorporate value into life



Psychomotor Taxonomy

HIGH



LOW

- Origination
- Adaptation
- Complex overt response
- Mechanism
- Guided Response
- Set
- Perception





Psychomotor Taxonomy

- (1) **Perception** : Awareness of sensory stimulus
- (2) **Set** : Readiness to take a particular type of action
- (3) **Guided Response** : Perform simple act as demonstrate , attempted copying of a physical behavior
- (4) **Mechanism** : Perform habitual act



Psychomotor Taxonomy (cont.)

- (5) **Complex overt response** : Skillful performance of complex acts
- (6) **Adaptation** : Modifies for special problems, making minor adjustments in the physical activity in order to perfect it
- (7) **Origination** : New movement patterns / creativity



Second Question

What types of assessment will be used to evaluate students' learning?





Modes of Assessment

- **Formative Assessment:** Formative assessments occur during the learning process, often while students are engaged in other activities.
- **Summative Assessment:** Summative assessment occurs at the end of a unit of study in order to measure the amount of information the students have learned



Types of Assessment

- Observational assessment
- Selected response assessments
- Constructed response assessments
- Performance assessments
- Portfolio assessments





Assessment Tools

Types	Tools
Observable Assessment	Checklist, rating form, etc.
Selected Response Assessment	Multiple choice, fill-in-the-blank(completion), matching and true-false questions
Constructed Response Assessment	Short essay, Extended essay



Assessment Tools (cont.)

Types	Tools
Performance Assessment	Research/Term Papers Research Reviews Reports Case Studies
Portfolios Assessment	Authentic Task



Scoring

Assessment Tools	Scoring
Checklist, rating form, etc.	Rating score 1 to 5 or other scales
Selected Response	One correct answer for 1 score
Constructed Response	Rubric scores
Performance Assessment	Rubric scores
Portfolios	Rubric scores



Third Question

- How long will the test be in terms of time and number of items?





Estimate the Times Needed

- **Multiple choice** (recall questions that are brief)
: 30 - 60 seconds
- **More complex multiple choice questions**
: 60 - 90 seconds
- **Multiple choice problems with calculations**
: 2 - 5 minutes
- **True-False questions** :15 - 30 seconds per question



Estimate the Times Needed (Cont.)

- **Matching (5 premises, 6 responses)**
: 2 - 4 minutes
- **Short answer (one word)** : 30 - 60 seconds
- **Short answer (longer than one word)**
: 1 - 4 minutes
- **Short essays** : 15 - 20 minutes



Estimate the Times Needed (Cont.)

- **Data analyses/graphing** : 15 - 25 minutes
- **Drawing models/labeling** : 20 - 30 minutes
- **Extended essays** : 35 - 50 minutes

Source:

<http://web.utk.edu/%7Emccay/apdm/plan/credits.htm>



Fourth Question

- How much will each objective be worth in terms of weighting and number of items?





Developing Specifications for Tests and Assessments

Components of test specification :

- Test description
- Test blueprint





Test Description

- The test description will usually include elements such as the overall test length, the test administration time limit, and the item types that are expected to be used (e.g., multiple choice, essay). In some cases the test description may also specify a test administration mode (e.g., paper-and-pencil, performance-based, computer-based).



Test Blueprint

- The content areas listed in the test blueprint comprise the **learning objectives** and **content areas** to be assessed. . In addition, the test blueprint specifies the number or proportion of items that are planned to be included on each test form for each content area.



Example

Content	Knowledge	Comprehen- sion	Application	Total Items	Percentage of Items
Fractions	5	5	5	15	30
Decimals	5	5	5	15	30
Decimal- fraction relationship	6	7	7	20	40
Total Items	16	17	17	50	100



Cheating

- Preventing Cheating
 - Reduce the pressure (multiple evaluations)
 - Make reasonable demands (length/content of exam)
 - Use alternative seating
 - Use alternative forms
 - Be cautious with extra copies





END..

