# Curriculum designing.
Outcomes,
Methods and Assessment: Concepts and Links

Objectives. Goals. Outcomes

- **Objectives** are specific statements of what is to be accomplished and how well, and are expressed in terms of quantifiable, measurable outcomes.
- **Competency-based objectives** are intended to communicate behaviours believed to be required for successful job performance and to have students demonstrate these behaviours prior to graduation.
- **Taxonomy of educational objectives** is intended to classify all objectives into a hierarchy of categories based on presumed complexity
- **Goals** are global statements of long-term outcomes.
- **Learning outcomes** are statements that describe significant and essential learning that learners have achieved, and can reliably demonstrate at the end of a course or program. In other words, learning outcomes identify what the learner will know and be able to do by the end of a course or program.
- **Evaluation** is the systematic process of collecting and analyzing data in order to make decisions.

- There are four components of an objective: 1) the action verb, 2) conditions, 3) standard, and 4) the intended audience (always the student). The action verb is the most important element of an objective and can never be omitted. The action verb states precisely what the student will do following instruction. Verbs are categorized by domains of learning and various hierarchies.

- Benjamin Bloom and his colleague, David Krathwohl, were pioneers in categorizing the domains and levels.

Bloom's taxonomy
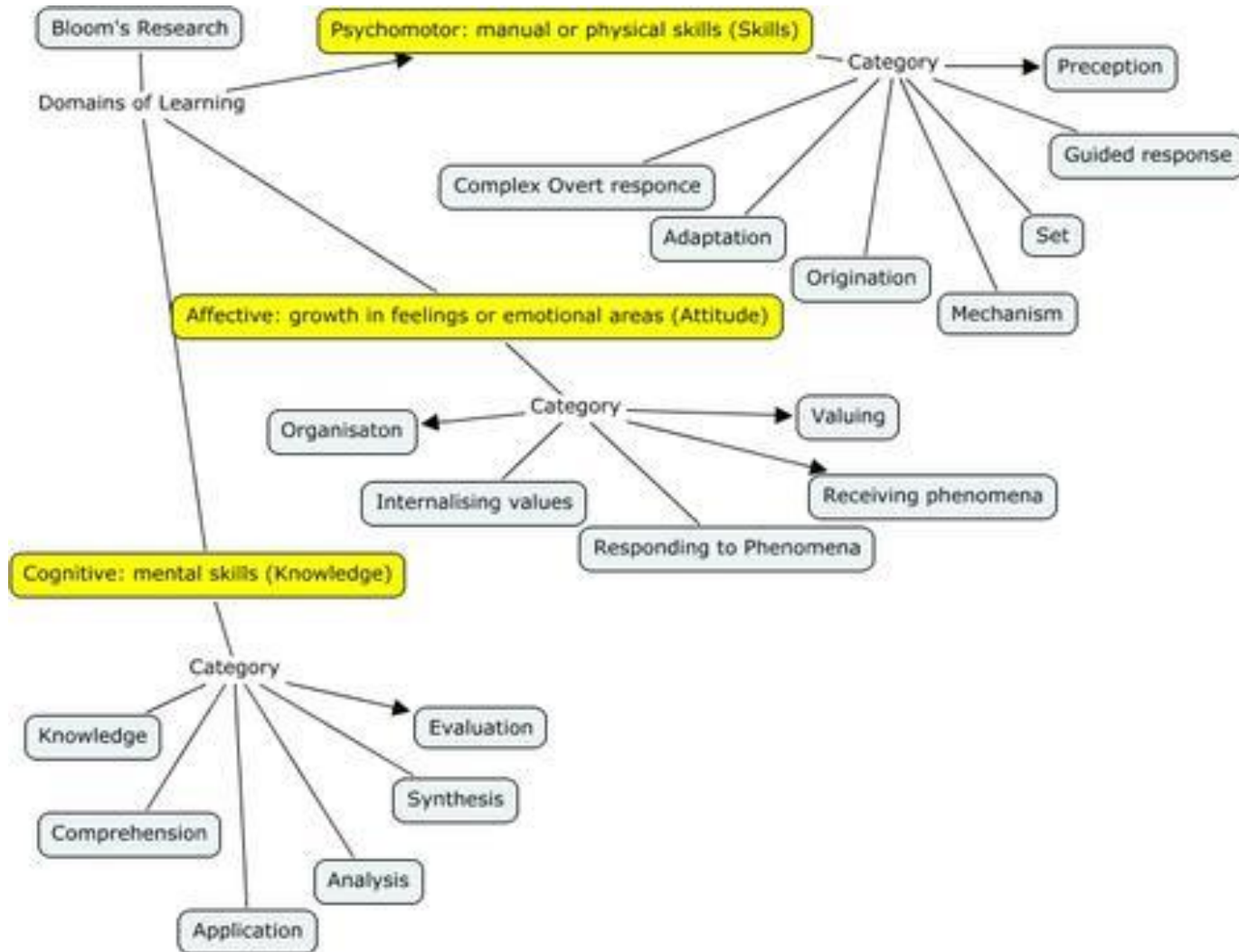
Sometimes the six hierarchies or levels listed above are grouped into three categories:

- Level 1. Recall – Knowledge and Comprehension
- Level 2. Interpretation – Application and Analysis
- Level 3. Problem-Solving – Synthesis and Evaluation

- Recall objectives are at the basic taxonomic level and involve recall or description of information. Interpretation is a higher level of learning and involves application and examination of knowledge. Problem-solving skills test the highest level of learning and involve construction and assessment of knowledge.

EVALUATION

Appraise
Approve
Assess
Choose
Conclude
Confirm
Criticize
Critique
Diagnose
Evaluate
Judge
Justify
Prioritize
Prove
Rank
Rate
Recommend
Research
Resolve
Revise
Rule on
Select
Support
Validate

SYNTHESIS

Arrange
Assemble
Build
Combine
Compile
Compose
Conceive
Construct
Create
Design
Devise
Discover
Draft
Formulate
Generate
Integrate
Make
Manage
Organize
Plan
Predict
Prepare
Propose
Reorder
Reorganize
Set up
Structure
Synthesize

ANALYSIS

Analyze
Appraise
Audit
Break down
Calculate
Categorize
Certify
Compare
Contrast
Correlate
Criticize
Deduce
Defend
Detect
Diagram
Differentiate
Discriminate
Distinguish
Examine
Infer
Inspect
Investigate
Question
Reason
Separate
Solve
Survey
Test
Uncover
Verify

APPLICATION

Adapt
Apply
Catalogue
Chart
Compute
Consolidate
Demonstrate
Develop
Employ
Extend
Extrapolate
Generalize
Illustrate
Infer
Interpolate
Interpret
Manipulate
Modify
Order
Predict
Prepare
Produce
Relate
Sketch
Submit
Tabulate
Transcribe
Use
Utilize

COMPREHENSION

Arrange
Associate
Clarify
Classify
Convert
Describe
Diagram
Draw
Discuss
Estimate
Explain
Express
Identify
Locate
Outline
Paraphrase
Report
Restate
Review
Sort
Summarize
Transfer
Translate

KNOWLEDGE

Cite
Choose
Define
Label
List
Locate
Match
Name
Recall
Recognize
Record
Repeat
Select
State
Write

Level 1: Recall

Level 2: Interpretation

Level 3: Problem-solving

y

Examples

Recall: After attending lecture and reading the assigned materials, the student will state the function of a thermometer.

Interpretation: After attending lecture and studying the assigned materials, the student will demonstrate how a thermometer works.

Problem-Solving: After attending lecture and studying the assigned materials (including problem sets), the student will formulate the degrees in C given the degrees in F, or vice versa.

Bad	Better
To increase the student's ability to visually identify white cells on a differential.	The student will identify correctly all white cells on a differential.
The student will gain knowledge of automated chemistry tests.	The student will state the principle for each automated chemistry test listed.
The student will be familiar with red blood cell maturation in the bone marrow.	The student will diagram the maturation of red blood cells.
The student will understand the interpretation of hemoglobin electrophoresis patterns.	Given several electrophoretic scans, the student will correctly diagnose each normal or abnormal pattern.

Characteristics of Learning Outcomes Statements

- reflect broad conceptual knowledge and adaptive vocational and generic skills

- reflect essential knowledge, skills or attitudes;

- focus on *results* of the learning experiences;

- reflect the desired end of the learning experience, not the means or the process;

- represent the *minimum* performances that must be achieved to successfully complete a course or program;

- answer the question, "Why should a student take this course anyway?"

ACTION WORD (performance)	LEARNING STATEMENT (the learning)	CRITERION (the conditions of the performance demonstration)
Applies	principles of asepsis	when executing psychomotor skills
Produces	documents	using word processing equipment
Analyzes	global and environmental factors	in terms of their effects on people

(Source for categories: Developing Learning Outcomes Self-Study Guide, Humbler College of Applied Arts and Technology, 1996)

Learning outcomes S.M.A.R.T.

- **Specific**: Tells the learner exactly what is expected.
- **Measurable**: How will they and you know when the objective is achieved?
- **Action Oriented**: Use words in your objective that indicate what learners will do.
- **Relevant**: Is the objective relevant to the overall **course goals**? Will it help students get closer to the overall goal?
- **Time-bound**: It is useful to state exactly when students will need to demonstrate that they have achieved this objective.

Classification of teaching/learning methods

- Approaches:
  - Teacher-centered
  - Student-centered

Learning styles

Visual

- Visual learners prefer the use of images, maps, and graphic organizers to access and understand new information.

Auditory

- Auditory learners best understand new content through listening and speaking in situations such as lectures and group discussions. Aural learners use repetition as a study technique and benefit from the use of mnemonic devices.

Read & Write

- Students with a strong reading/writing preference learn best through words. These students may present themselves as copious note takers or avid readers, and are able to translate abstract concepts into words and essays.

Kinesthetic

- Students who are kinesthetic learners best understand information through tactile representations of information. These students are hands-on learners and learn best through figureing things out by hand (i.e. understanding how a clock works by putting one together.)
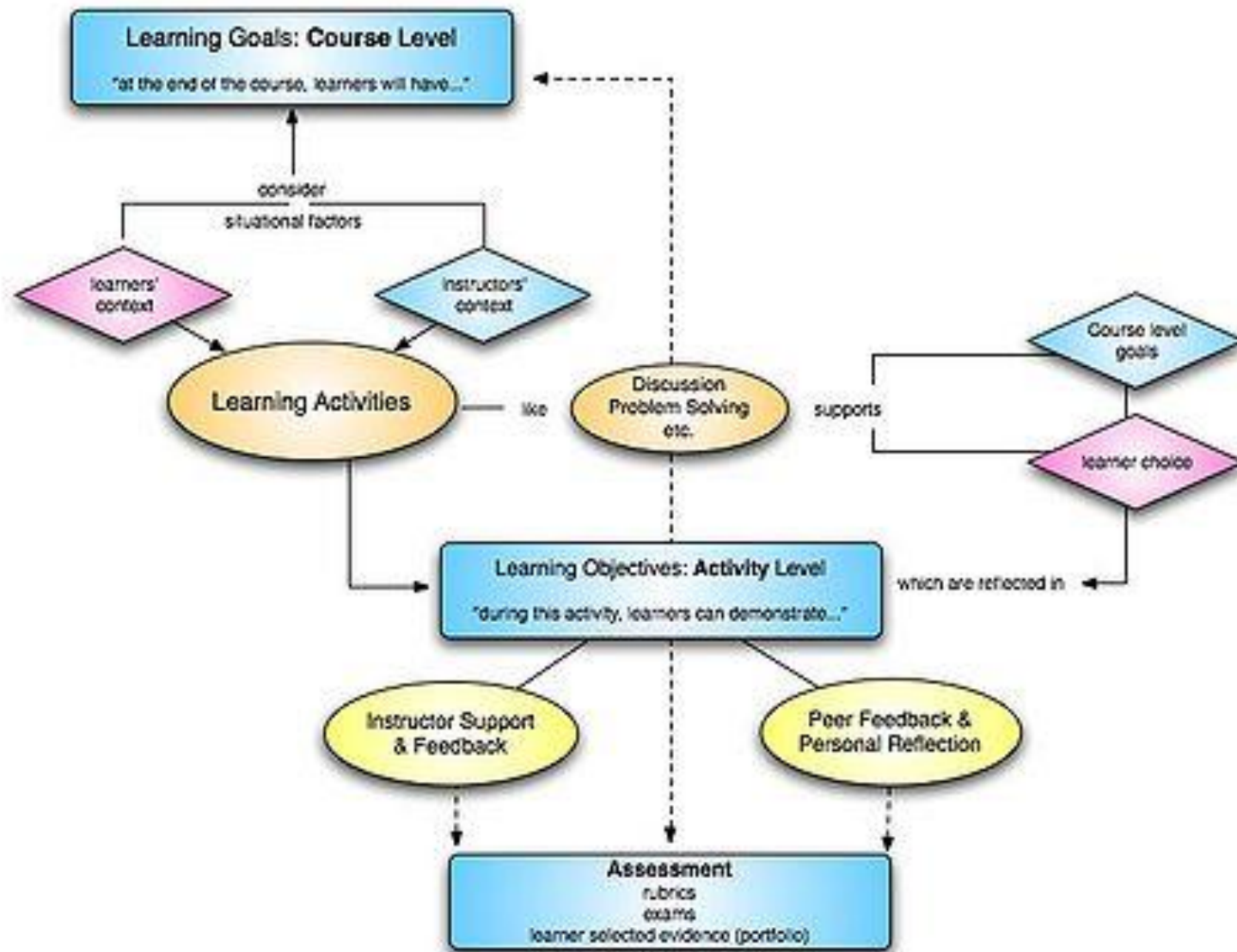
The function or purpose of evaluation is to

- determine the current status of the object of evaluation

- compare the status with a set of standards or criteria

- select an alternative in order to make decision

- The process of evaluation involves determination of the types of data which needs to be collected, determination of the individual, group or groups from which data will be obtained, collection of data, analysis of data, interpretation of the data and decision-making.

- Readings: OER: Evaluation and Testing African Virtual university Université Virtuelle Africaine Universidade Virtual Africana Educational by Ridwan Mohamed OSMAN p.p. 24-33

Measurement and testing

- Readings: OER: Evaluation and Testing African Virtual university Université Virtuelle Africaine Universidade Virtual Africana Educational by Ridwan Mohamed OSMAN p.p. 44-60

Competency Level	Learning Objective	Activity	Assessment	Supporting Tools
luate Organize/Post/ Collaborate Application	*Learners will analyze a case study, identify the relevant social psychology theories at play,draw out examples from the study to support their answers and present their study to the class during the third week of the course.*	Group case study selection, discussion, identify relevant theories from course readings. Document their findings in a project wiki.	Peer Review / [Rubric builder]	UBC Wiki - [Example of group work using a wiki]