Outcome-Based Education

Outcome-based education

- A student-centred learning system focusing on measuring student performance.

- Does not specify any specific style of teaching – just that the student be able to demonstrate they have learned the required content or acquired the appropriate skills

Learning Outcomes

- Ontario Colleges are required to implement outcome-based curricula.

- The standard reference used in Ontario colleges for designing learning outcomes is B. S. Bloom et al.'s taxonomy of learning objectives

- It must be pointed out that this taxonomy is 54 years old and was designed for performance objectives (relatively small units of knowledge) not for learning outcomes (much broader, measurable goals).

Learning Outcomes

- Learning outcomes are statements specifying what learners will know or be able to do as a result of a learning activity

- Describe a desired condition – the knowledge, skills or attitudes required to fulfill a need.

- Provide direction for learning activities and prescribe evaluation techniques that measure attainment levels

Learning Outcomes

- Help to:

  - Identify specifically what needs to be learned

  - Focus on learner's behaviour that needs to be changed

  - Serve as guidelines for content, instructional techniques and evaluation

  - Convey to learners what is to be accomplished

Learning Outcomes

- Drawbacks:
- Only based on what is known
  - whither new knowledge?
- Does not take into account insight and creativity required at advanced levels of learning
- Doesn't foster divergent learning based in curiosity

Characteristics of good learning outcomes

- Specified action must be:
  - Observable
  - Measurable
  - Performed by the learner

- Thus the outcome must specify:
  - Who is to perform
  - What action they are to undertake
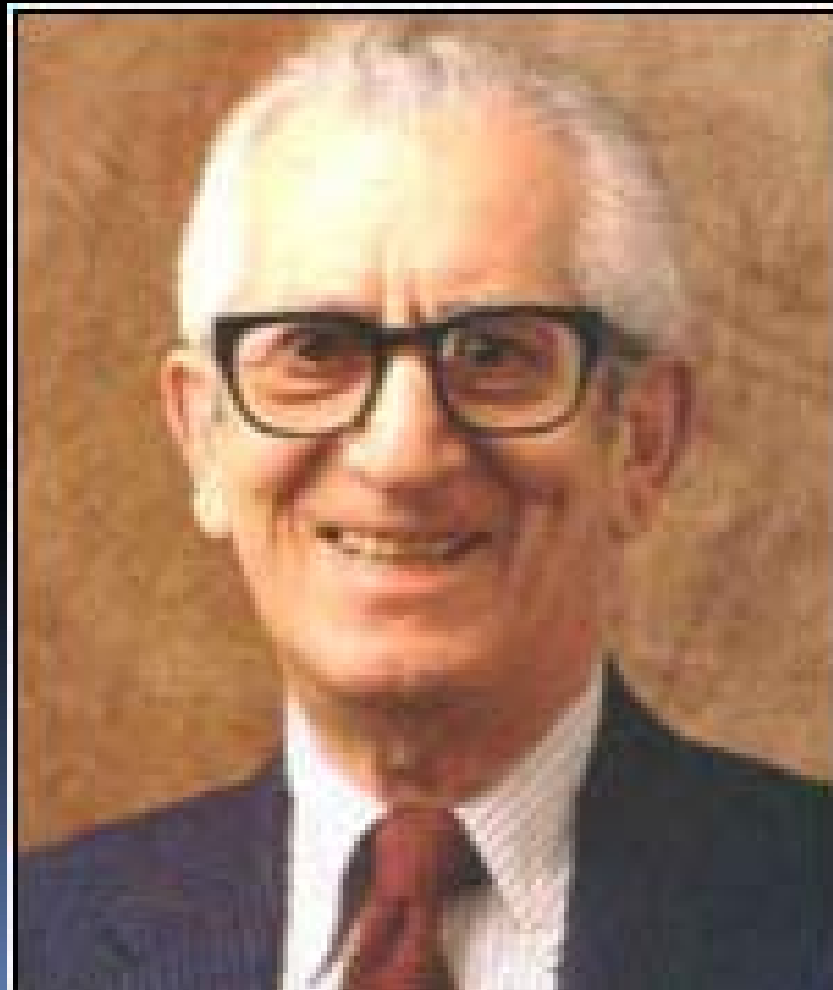 - What result must stem from the action

Learning Outcomes

- As the action has to be measurable and observable the outcome statement has to commence with an ACTION VERB which results in overt behaviour.

- E.g. compile, plan, revise, design, select, apply, prepare, compute, assess, compare, rate, critique

BLOOM'S TAXONOMY
Basis for learning outcomes

Benjamin Bloom

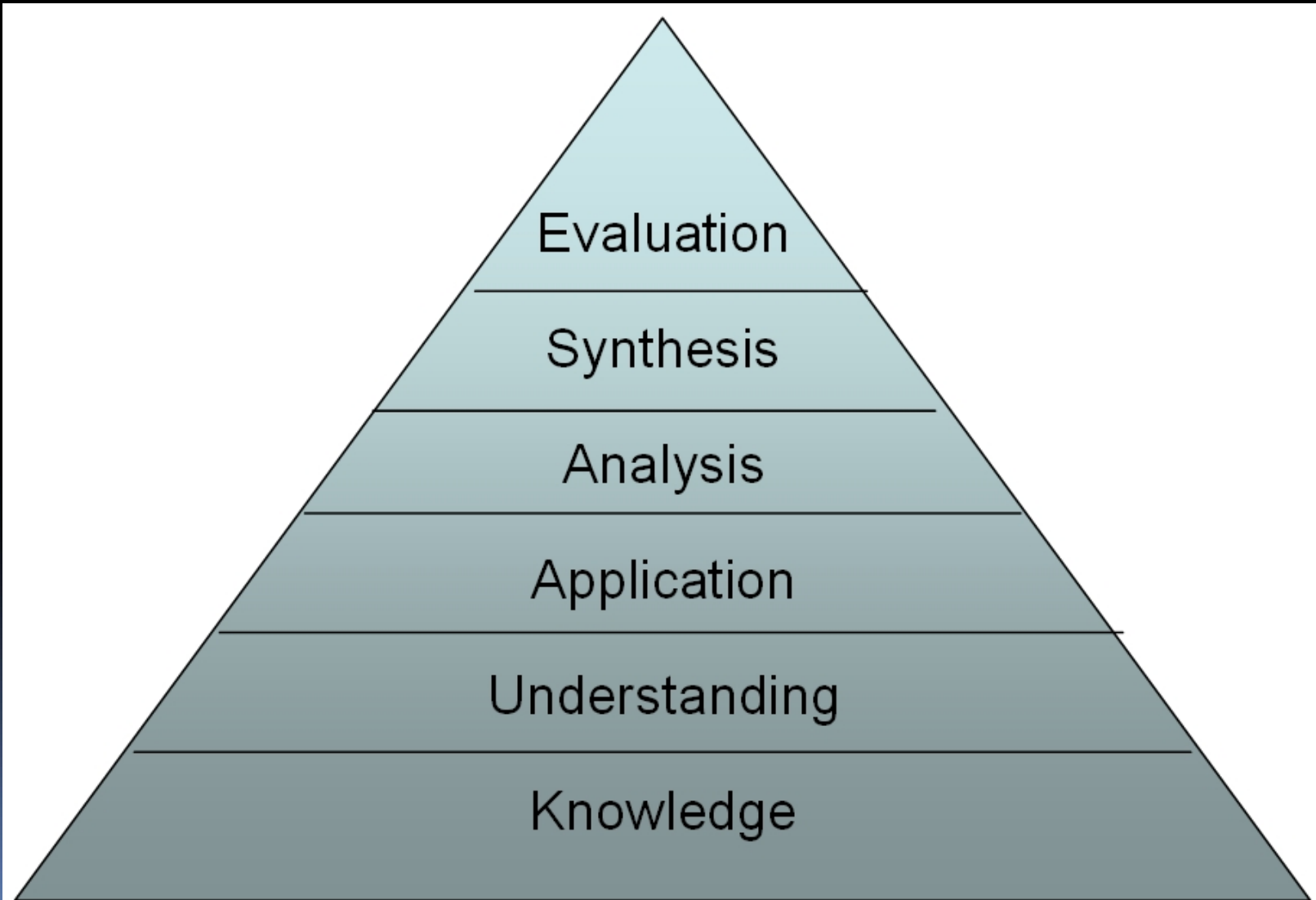# Learning Domains

- This taxonomy first presented in 1956:

  "The Taxonomy of Educational Objectives, the Classification of Educational Goals, Handbok 1: the Cognitive Domain"

  Benjamin Bloom (ed.), Englehart, Furst, Hill, and Krathwohl

Learning Outcomes

- Bloom et al. identified 3 learning domains:

- **The Cognitive Domain** – the development of intellectual skills

- **The Affective Domain** – dealing with things emotionally

- **The Psychomotor Domain** – use of motor skills

- Each domain was divided into levels
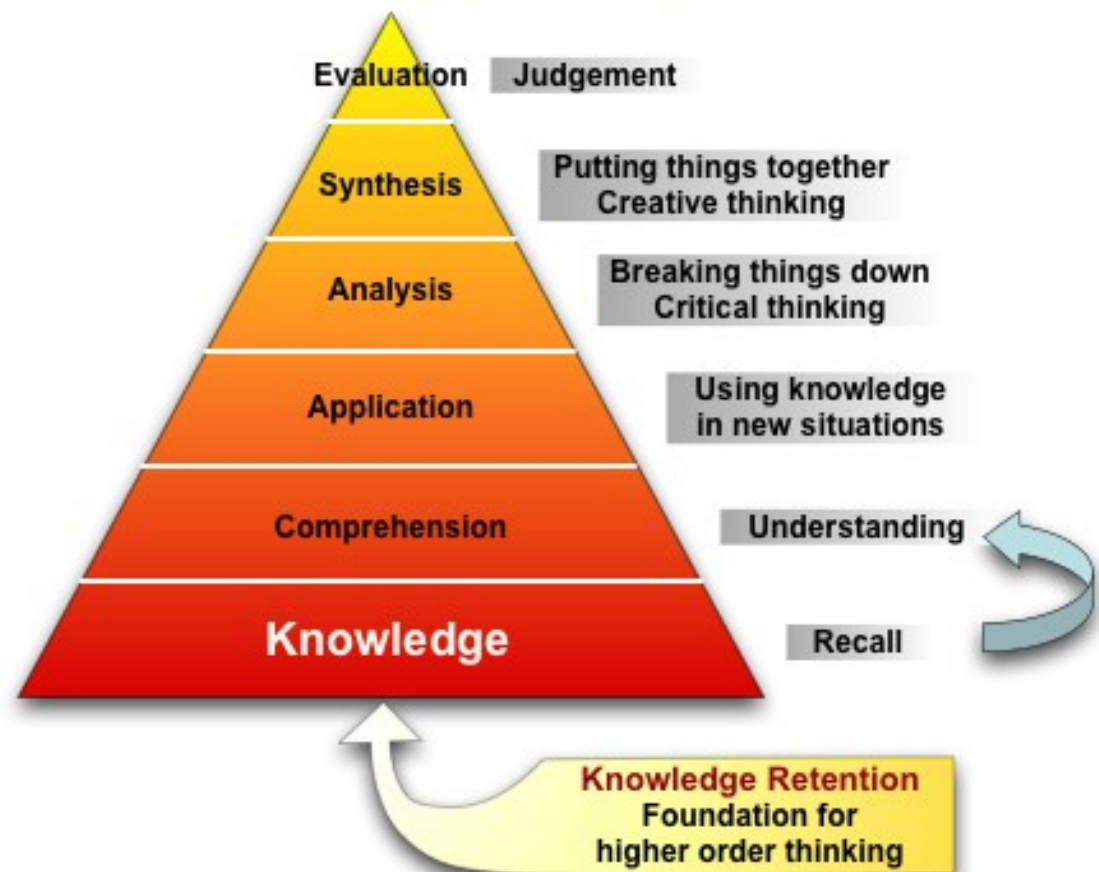
Cognitive Domain

Evaluation

Synthesis

Analysis

Application

Understanding

Knowledge

Cognitive Domain

Learning at the higher level is dependent on attaining knowledge and skills at the lower levels

Bloom's Taxonomy for Thinking

Cognitive Domain

Knowledge (now referred to as remembering)

- observation and recall of information
- knowledge of dates, events, places
- knowledge of major ideas
- mastery of subject matter

- Action Verbs / Question Cues:

  list, define, tell, describe, identify,
  show, label, collect, examine, tabulate,
  quote, name, who, when, where, etc.

Cognitive Domain

Comprehension

- understanding information
- grasp meaning
- translate knowledge into new context
- interpret facts, compare, contrast
- order, group, infer causes
- predict consequences

- Action Verbs / Question Cues:

  summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend

Cognitive Domain

Application

- use information

- use methods, concepts, theories in new situations

- solve problems using required skills or knowledge

- Action Verbs / Questions Cues:

  apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover

Cognitive Domain

Analysis

- seeing patterns
- organization of parts
- recognition of hidden meanings
- identification of components

- Action Verbs / Question Cues:

    analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer

Cognitive Domain

- Synthesis
- use old ideas to create new ones
- generalize from given facts
- relate knowledge from several areas
- predict, draw conclusions

- Action Verbs / Question Cues:
    combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if, compose, formulate, prepare, generalize, rewrite
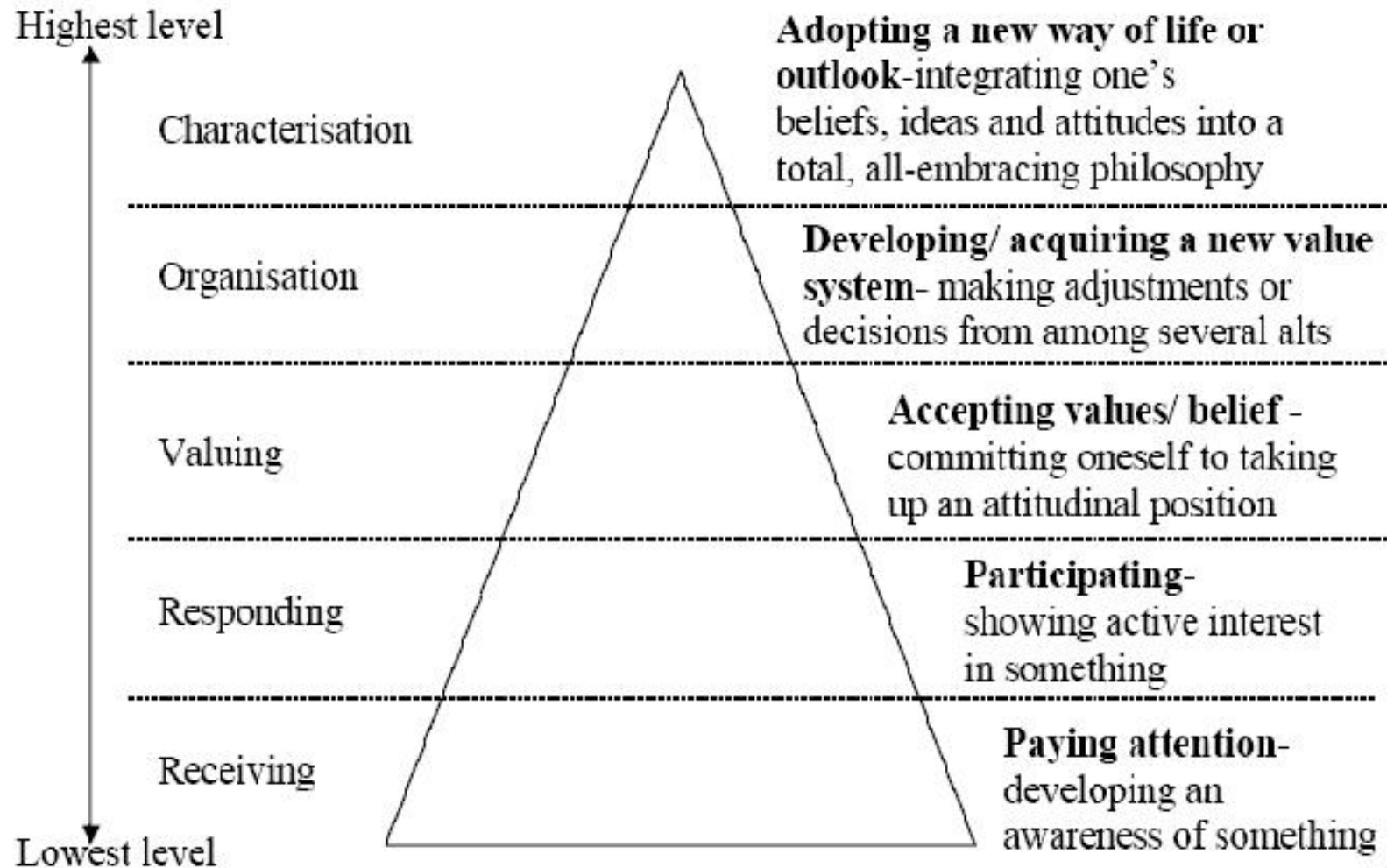
Cognitive Domain

- Evaluation
- compare and discriminate between ideas
- assess value of theories, presentations
- make choices based on reasoned argument
- verify value of evidence
- recognize subjectivity

- Action Verbs / Question Cues:
  assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize

Cognitive Domain

- Can compress this into 3 levels:
- **The Recall of Facts** (Bloom's Knowledge and Comprehension domains)
- What do we expect the learner to know?
- How will they convey what they understand?

- **The Interpretation of Data** (Application and Analysis)
- How can they apply their knowledge?
- In what ways can they analyze their findings?

- **Problem Solving** (Synthesis and Evaluation)
- How can they synthesize their learning?
- Can they make judgments about their learning?

Affective Domain

Highest level	**Characterisation**	**Adopting a new way of life or outlook**-integrating one's beliefs, ideas and attitudes into a total, all-embracing philosophy
	Organisation	**Developing/ acquiring a new value system**- making adjustments or decisions from among several alts
	Valuing	**Accepting values/ belief** - committing oneself to taking up an attitudinal position
	Responding	**Participating**- showing active interest in something
Lowest level	**Receiving**	**Paying attention**- developing an awareness of something

Source: Rothwell, W. and Kazanas, H. Human Resource Development: A Strategic Approach

Affective Domain

- **Receiving Phenomena**
- Awareness, willingness to hear, selected attention.
- E.g.Listen with respect, remember names

- Action Verbs / Question Cues:

  Asks, chooses, follows, identifies, locates, names, points to, selects, replies

Affective Domain

- **Responding to Phenomena**
- Learner's active participation, willingness to respond.
- E.g. Participates in discussions, gives a presentation, practices safety rules

- Action Verbs / Question Cues:

    answers, assists, conforms, discusses, labels, practices, presents, recites, reports

Affective Domain

- Valuing
- The worth the learner attaches to an object, phenomena or behaviour.
- Acceptance of others, commitment
- E.g. Cultural sensitivity

- Action Verbs / Question Cues:
  demonstrates, differentiates, invites, initiates, justifies, proposes, shares.

Affective Domain

- Organization

- Prioritizes, contrasts different values, resolves conflicts.

- E.g. Accepting responsibility. Accepts professional, ethical standards, time management.

- Action Verbs / Question Cues:

    adheres, alters, compares, combines, defends, formulates, integrates, modifies,

Affective Domain

- Internalizing (characterization)
- Behavior consistent with coherent value system
- E.g. shows self-reliance in work, cooperative in group activities, problem solves, accepts info. contrary to beliefs

- Action Verbs / Question Cues:

    discriminates, influences, modifies, qualifies, questions, revises, verifies

Psychomotor Domain

Generally we can think of acquiring skill competence in levels:

Unconscious Incompetence

Conscious Incompetence

Conscious Competence

Unconscious Competence

Psychomotor Domain

- Imitation

- Observe a skill and attempt to repeat it
- See a finished product and try to replicate it.

- Action Verbs / Question Cues:

    Attempt, copy, duplicate, imitate, mimic, trace

Psychomotor Domain

- Manipulation

- Perform the skill or produce the product in a recognizable fashion following general instructions.

- Action Verbs / Question Cues

  complete, follow, perform, produce, operate, carry out

Psychomotor Domain

- Precision

- Independently perform the skill with accuracy at an expert level

- Action Verbs / Question Cues
  Achieve automatically, excel, master

Psychomotor Domain

- Articulation

- Modify the skill to fit new situations
- Combine more than one skill

- Action Verbs / Question Cues
  Adapt, alter, customize

Psychomotor Domain

- Naturalization

- Completion of combined skills with ease
- Making the skill automatic

- Action Verbs / Question Cues

    perfect, create, design

Bloom's Taxonomy & Evaluation

- The taxonomy provides a useful structure in which to create test questions.

- Write questions within particular levels.

- Decide what proportion of questions should be at what level.

- E.g. The top 2 levels maybe should only constitute 20% of your questions – If you can answer them you deserve an "A"

Expressive Outcomes

- Elliot. W. Eisner (1969)

Introduced the idea
of Expressive Outcomes
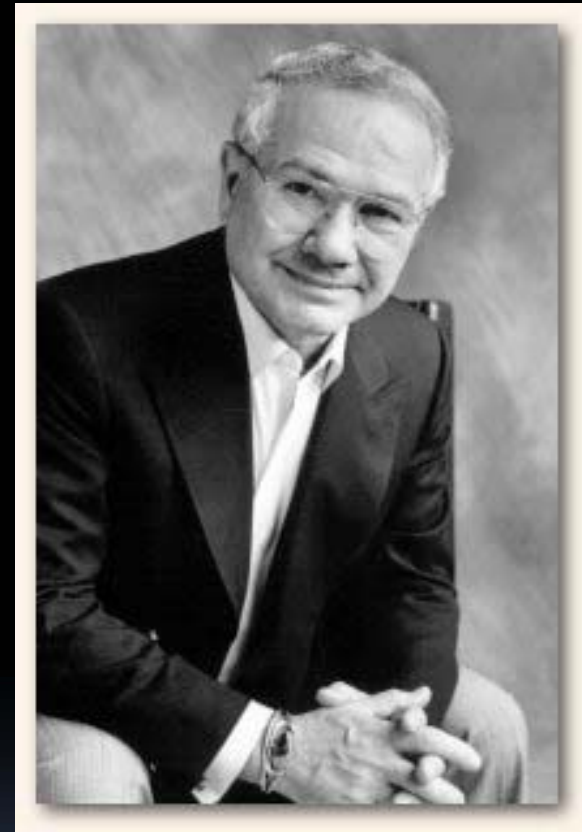
Alternatively explorative, experiential or
exposure outcomes

Expressive outcomes

- Focus on the learning process not the outcome.
- May just want to turn the student on to the field.
- Sometimes want a hidden agenda (outcomes tend to tip your hand)
- May want the student to experience being in the situation.
- Expected to result in diverse student responses

Expressive outcomes

- Examples:
- The student will attend a live theatre performance
- The student will read the following writings
- The student will interpret the meaning of the following lyrics