

2-2: Principles Of Learning

Learning Theories

- Charles Allen: four-step method of instruction
- Malcolm Knowles:
Pedagogy/Andragogy
- Benjamin Bloom - Mastery learning concept

Active Learning Process

- Mental steps to change behavior
- Make each step clear and concise
- Present information in a familiar format and style
- Create interest, stimulate motivation

Pedagogy

- Principle of learning most often associated with children
- Used generically to describe the methods used to deliver instruction

Andragogy

- The art of teaching adults
- 1970s, Dr. Malcolm Knowles, among first theorists to use the term
- Describes the characteristics of adult students

Andragogy Assumptions

- Self-concept
- Experience
- Readiness to learn
- Learning orientation
- Motivation

Cognitive Domain

- All forms of knowing - perceiving, imagining, reasoning, and judging
- Usually presented in a technical or factual presentation
- Audiovisual materials, demos, and student activities are used

Psychomotor Domain

- Skills involving knowledge applied to physical movement
- Success is measured in speed, precision, sequence of execution
- Instructor demonstrates as students watch

Affective Domain

- Individuals deal with issues emotionally
- Approached through the preparation step of the lesson plan
- Desired changes are determined and planned in the lesson
- Learning outcomes take time to achieve

Learning Styles

- Basic categories
 - Heard (audio)
 - Seen (visual)
 - Touched, handled, and performed (kinesthetic)

Learning Methods

- The way you think or process information
- Sequential or linear
- Abstract or symbolic
- Concrete or real items
- Global or holistic

Law of Readiness

Person is prepared to learn,
not just ready and willing,
but also mentally and
physically able to learn
new knowledge or skills

Law of Exercise

Stresses the idea that
the more an act is practiced,
the faster and surer
the learning becomes

Law of Effect

Learning is always more effective when a satisfaction, pleasantness, or reward accompanies or is a result of the learning process

Law of Disuse

Assumes that habits and memories used repeatedly are strengthened and habits not used are weakened through disuse

Law of Association

When the mind compares a new idea with something already known, it is using association, which means that it is easier to learn by relating new information to similar information from past experiences

Law of Recency

The principle of recency simply means that the most recent items or experiences are remembered best

Law of Primacy

The principle that the first of a series of learned acts would be remembered better than others

Law of Intensity

If a stimulus (experience)
is vivid and real,
it will more likely change
or have an effect
on the behavior (learning)

Motivation Techniques

- Provide opportunities
- Share ideas and receive positive comments
- Promote working together
- Use visual aids and demonstrations

Relating Motivation to Learning

- Use teaching styles that match learning styles, abilities, and needs
- Generate interest and confidence
- Offer activities that hold attention and interest, stimulate thinking, and develop relationships with others
- Provide external motivations

Instructor Actions

- Demonstrate enthusiasm
- Require outstanding performance
- Provide relevancy
- Provide positive reinforcement where deserved

Sensory-stimulation Theory

- Developed by Dugan Laird
- For people to change, they must invest their senses in the process
- Stimulate what students see, hear, touch, smell, and taste
- Sense of sight takes in the most information with hearing next

Cone of Learning

- 10% of what they read
- 20% of what they hear
- 30% of what they see
- 50% of what they see and hear together
- 70% of what they say or repeat
- 90% of what they say while doing what they are talking about

Memory Considerations

- What students store in their memory depends on the instructor
- Instructors must make learning vivid and interactive
- Students must relate new information to what they know

Sensory Memory

- The mental storage system for attention-getting sensory stimuli or input
- To aid memory, new information must relate to some other known and understood information

Short-term Memory

- Holds information for about 20 seconds
- Limited to about seven items
- Deals with the present
- 20 seconds to save or forget
- Converting to long-term requires rehearsal

Long-term Memory

- Considered permanent
- Uses past information to understand events in the present
- Capacity is limitless
- Relate knowledge that the students possess in their long-term memory to new information and concepts

Factors that Affect Learning

- Underlying problem with the student
- Concerned with real ***or*** imaginary problems

Obstacles to Learning

- External pressures/concerns
- Fear or worry
- Discomfort of the physical environment or class setting
- Anxiety or boredom

Learning Plateau

- A break in upward progress
- Become discouraged
- Learning plateaus are normal

Traditional Approach

- Content-based
- Time-based
- Group-based
- Instructor-dependent

Mastery Approach

- Competency-based
- Performance-based
- Individual-based
- Modules and multimedia
- Instructor-supported

Advantages

- Students are prepared to advance
- Instructors must perform task analyses
- Instructors must state the learning objectives
- Responsibility for learning is focused on the student

Disadvantages

- Additional time must be available
- Faster students may feel held back
- Several formative exams must be administered during the class

Student Assessment

- May be accomplished two different ways
- Traditional teaching
- Mastery teaching

Norm-referenced

- Rarely used in the fire and emergency services
- Measures the accomplishments of one student against that of another
- Grades based on the distribution of scores within the class on an exam

Criterion-referenced

- Measures student performance by comparing it to the standard or criterion stated in the course objectives
- Compares student's performance with stated criteria, not other students
- Test scores are translated to a pass or no pass/fail grade