

CFI Lesson

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Stage 1
Lesson 1

Prepared and Taught by:
Frank Fiorillo
- Chief Flight Instructor, Clearwater Aviation

This is a collection of notes and answers prepared by Mark Berry to the first lesson.

Section A - Discovering Learning Theories

Learning Defined (AIH: 3-2)

Learning can be defined in many ways

- The act, process, or experience of gaining knowledge or skill.
- Experience changes permanent behavior
- Gaining skills or behavior through instruction or experience.

Ultimately this will lead to long term changes in behavior potential.

S B T

NOTE

If the person doesn't have the experience, there is no way that the client could of ever learned. Everything we know is a transfer of some experience or knowledge to another.

Knowing how to drive allows you to understand common tasks in an airplane such as how the throttle works increasing output to the engine. These concepts would be hard, if not impossible to learn without having some basis of knowledge.

Cognitive Theory

Learning theory is the body of principles that explain how people acquire skills, knowledge, and attitudes.

The Four Learning Theories - BICC

This answers how people learn: **Behaviorism, Information Processing Theory, Cognitive, Constructivism.**

Behaviorism

The most well known, and interesting common note about this is Pavlov's dog. The dog responds to external stimulus such as a bell, and they salivate accordingly knowing they are about to get a treat.

Information Processing Theory

Uses a computer system as a model for human learning. Information is processed, stored and later retrieved. One way a brain handles the torrent of information is to let the brain handle the routine, and let the conscious focus on issues that are not habitual.

Cognitive

Cognitive theory is what's happening inside the brain. "If you're wondering why we're studying this course", this is cognitive theory.

Constructivism

Learn off of prior experience. Students get better over time, teachers get better over time.

Constructivism Example - Stove Analogy

NOTE

1. Red hot stove, burns hands
2. Stove off, but still hot. still burn hands later.
3. toy oven, red stick , don't burn hands but scared of it and needs to be shown it's safe.

NOTE

In constructivist thinking, the learners are given more latitude to become effective problem solvers, identifying and evaluating problems, as well as deciphering ways in which to transfer their learning to these problems, all of which foster critical thinking skills.

Perceptions and Insight

How we sense the world around us, how we look, see, hear and smell. We draw perceptions based on what we know.

NOTE

Use the example of walking into a home and smelling a familiar smell, such as an assumption of baked pie, to be confused because it was in fact an apple. Our ability to transfer knowledge to the student is based on their ability to associate the senses such as sounds, feelings, smells and touch. These are perceptions, even if the perception is leading to the wrong conclusion. It's perceptions that indicate how we perceive things and what eventually leads to insight.

Perceptions

Things that effect perceptions.

- **Physical organism** - Provides individuals with the perceptual apparatus for sensing the world around them: the ability to see, hear, feel, and respond.
- **Goals and values** - Every experience and sensation that is funneled into a person's central nervous system is colored by the individual's own beliefs and value structures.
- **Self-concept** - a student's self-image, described in such terms as "confident" or "insecure," has a great influence on the total perceptual process.
- **Time and opportunity** - Learning some things depends on other perceptions that have preceded that learning, and on the availability of time to sense and relate those new things to the earlier perceptions.
- **Element of threat** - Confronted with a threat, students tend to limit their attention to the threatening object or condition. Fear adversely affects perception by narrowing the perceptual field.

Insight

Insight involves the grouping of perceptions into meaningful wholes. It is the mental relating and grouping of associated perceptions. Creating insight is one of the instructor's major responsibilities.

Characteristics of Learning (PRMA)

- **Purposeful** - Each student is a unique individual whose past experience affects readiness to learn and understanding of the requirements involved. Students have fairly definite ideas about what they want to do and achieve.
- **Result of Experience** - Learning is an individual process from personal experiences. Previous

experience conditions a person to respond to some things and ignore others. Knowledge cannot be poured into the student's head.

- **Multifaceted** - Learning may include verbal elements, conceptual elements, perceptual elements, emotional elements, and problem-solving elements all taking place at once.
- **Active Process**— Students do not soak up knowledge like a sponge absorbs water. For students to learn, they must react and respond—perhaps outwardly, or perhaps only inwardly, emotionally, or intellectually.

Forgetting and Retention

- Sensory Memory - Immediate processing, brain decides what is important.
 - STM: 30 Seconds (IFR/Taxi Clearance for example)
- LTM: Lifetime.

Threats to Memory

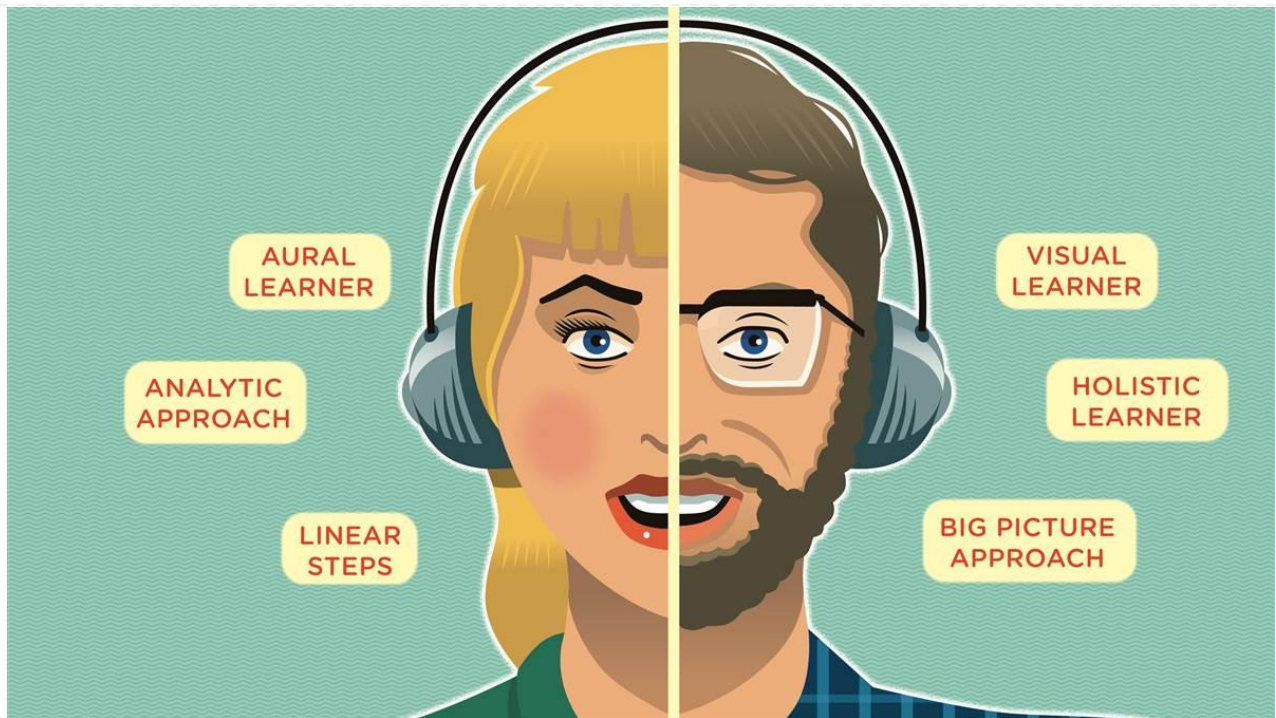
- Lack of Frequent Usage
- Lack of Understanding

Forgetting

- **Retrieval Failure** - Simply unable to recall.
- **Fading** - a person forgets information that is not used for an extended period of time.
- **Interference** - (Trauma) people forget because a certain experience has overshadowed it or the learning of similar things has intervened.
- **Repression** - a memory is pushed out of reach because the individual does not want to remember feelings associated with it.

Section B - Exploring Learning Styles and Domains

Learning Styles



Start by simply asking questions. 'How do you study? Do you like to read or would you rather watch a video?'

There are six principles of learning; REEPIR

Domains of learning - Cognitive Domain

Cognitive learning has a basis in factual knowledge; since the student has no prior knowledge of flying, the instructor first introduces him or her to a basic skill. The student then memorizes the steps required to perform the skill.

- Thinking domain
- One of the best known cognitive domains - It includes memorization of facts.
 1. Four practical learning Levels
 - a. Rote - repeat something back, simply memorized but not necessarily understood.
 - b. Understanding - To comprehend or grasp the nature or meaning of something.
 - c. Application - The act of putting something to use that has been learned.
 - d. Correlation - Associate what has been learned, and applied with previous of subsequent learning. (Able to use information as a building block)

Domains of learning - Affective Domain

Addresses the client's emotions toward the education experience. And how the instructor will approach the learning process.

What motivates the student's learning process

1. Receiving — willingness to pay attention; least complex level.
2. Responding — reacts voluntarily or complies.
3. Valuing — acceptance.
4. Organization — rearrangement of value system.
5. Characterization — incorporates value into life; most complex level.

Domains of learning - Psychomotor Domain

Seven educational objective levels of the psychomotor domain

1. Perception — awareness of sensory stimulus.
2. Set — relates cues/knows.
3. Guided Response — performs as demonstrated.
4. Mechanism — performs simple acts well.
5. Complex Overt Response — skillful performance of complex acts.
6. Adaptation — modifies for special problems.
7. Origination — new movement patterns, creativity.

Transfer of Learning

During a learning experience, the student may be aided by things learned previously. Sometimes, previous learning interferes with the current learning task. If the learning of skill A helps to learn skill B, positive transfer occurs. If learning A hinders learning B, negative transfer occurs.

Due to the high level of knowledge and skill required in aviation, training traditionally has followed a building block concept. This means new learning and habit patterns are based on a solid foundation of experience and/or old learning. Instruction has taken place when the instructor has explained a particular procedure and subsequently determined that the desired student response has occurred.

Memory Sheet

1. Learning Theory (BC)
 - a. Behaviorism
 - b. Cognitive theory
2. Characteristics of Learning (PRMA)
 - a. Purposeful
 - b. Result of experience
 - c. Multifaceted

- d. Active process
- 3. Principles of Learning (Remember REEPIR)
 - a. Readiness
 - b. Exercise
 - c. Emotion
 - d. Primacy
 - e. Intensity
 - f. Recency
- 4. How people learn (PIM)
 - a. Perception
 - b. Insight
 - c. Motivation
- 5. Domains of Learning (CAP)
 - a. Cognitive
 - b. Affective
 - c. Psychomotor
- 6. Memory (SSL)
 - a. Sensory register
 - b. Short-term memory
 - c. Long-term memory
- 7. Retention of Learning (PRFLM):
 - a. Praise Stimulates Learning
 - b. Recall is Promoted by Association
 - c. Favorable Attitudes Aid Retention
 - d. Learning with All our Senses is most Effective
 - e. Meaningful Repetition Aids Recall
- 8. Levels of Learning (RUAC) (Not In PTS) - Least to Most
 - a. Rote
 - b. Understanding
 - c. Application
 - d. Correlation
- 9. Learning Physical Skills
 - a. Physical Skills Involve More Than Muscles
 - b. Desire to Learn
 - c. Patterns to Follow

- d. Perform the Skill
 - e. Knowledge of Results
 - f. Progress Follows a Pattern
 - g. Duration and Organization of a Lesson
 - h. Evaluation vs. Critique
 - i. Application of Skill
10. Theories of Forgetting (DIR)
- a. Disuse
 - b. Interference
 - c. Repression