

CFI ACS Companion

Area of Operation I | Task B

The Learning Process

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This companion document breaks down every element of the CFI ACS Area of Operation I, Task B: The Learning Process. Each knowledge element, risk management item, and skill demonstration is mapped to the Aviation Instructor's Handbook Chapter 3 with page references.

Primary Sources: Aviation Instructor's Handbook (FAA-H-8083-9B), Chapter 3; Flight Instructor ACS (FAA-S-ACS-25); 8900.1 Volume 5, Chapter 2, Section 1 (Scenario-Based Evaluation); FOI & FIA Written Exams (FAA Testing Matrix)

Testing Rules: At least one knowledge element (plus any missed on the FOI written). At least one risk management element. All skill elements. Scenario-based evaluation to the maximum extent possible (8900.1). The underlying private/commercial ACS questions are also fair game.

AOO I Note: The evaluator must select Task E, Task F, and at least one other task for initial flight instructor applicants. For add-on ratings or reinstatements, FOI coverage is at the evaluator's discretion.

KNOWLEDGE ELEMENTS

K1 — Definitions of Learning

FI.I.B.K1

AIH Chapter 3, pp.3-2

The AIH provides six definitions of learning. The common thread across all of them: every definition includes the word behavior. Learning is a change of behavior as a result of experience. If behavior hasn't changed, learning hasn't occurred — the student is just regurgitating facts.

K2 — Learning Theories

FI.I.B.K2

K2A: Behaviorism

AIH Chapter 3, p.3-2 – 3-3

The stimulus-response approach. Pavlov's dog is the classic example. Positive reinforcement (praise after a good landing) and negative reinforcement (a firm correction after a dangerous action) both fall under behaviorism. Your parents used this on you whether they called it that or not.

K2B: Cognitive Theory

AIH Chapter 3, pp.3-4 to 3-5

Focuses on what happens inside the mind — thinking, perceiving, problem-solving. Key psychologists: Dewey, Piaget, Bloom, Bruner. The core idea is learning from the known to the unknown and from the concrete to the abstract. Students aren't empty vessels; they already have the building blocks. Your job is to connect what they already know to the new aviation concept. If you've ever used an analogy to teach something, you've used cognitive theory.

The Lego Analogy: Your student drove a car to the airport. They've taken sharp corners and felt load factor. Connect that existing knowledge to how an airplane turns. The pieces are already there — you're just assembling them.

K3 — Perceptions and Insights

FI.I.B.K3

AIH Chapter 3, pp.3-7 to 3-9

Most perceptions come through sight and hearing. Five factors affect perception:

- Physical organism — Can the student physically perceive the instruction? Check the basics.
- Goals and values — Ties to Maslow's hierarchy. A learner with unmet needs won't perceive well.
- Self-concept — A negative self-image impairs perception of instruction.
- Time and opportunity — They won't perceive slow flight on the first attempt. Repeat the exposure.
- Element of threat — Critical. If a student feels threatened, their perceptual field narrows. A terrified student won't absorb your instruction. Eliminate the threat first.

K4: Acquiring Knowledge

AIH Chapter 3, pp.3-9 to 3-11

Knowledge acquisition moves through phases that end at application. Like math: memorize 0-9 and the operations, then solve equations you've never seen. Find the core principles, have your student lock those in, then challenge them with new situations through questioning and SBT.

K5 — Laws of Learning

FI.I.B.K5

AIH Chapter 3, pp.3-11 to 3-13 (Thorndike)

- Readiness — Learner must be mentally, physically, emotionally prepared. Ties back to Maslow.
- Effect — Behaviors leading to satisfying outcomes get repeated. Set your student up for success.
- Exercise — Connections strengthen with practice and weaken without it.
- Primacy — First impressions matter. Teach it correctly the first time.
- Intensity — Dramatic, real-world learning sticks. Why SBT works.
- Recency — Things learned most recently are best remembered. End lessons with what you want retained.

Recency in action: A takeoff briefing leverages the law of recency every time — you brief the emergency plan right before takeoff so it is the most recent thing on the pilot's mind.

K6 — Domains of Learning

FI.I.B.K6

K6A: Cognitive Domain (Bloom's Taxonomy)

AIH Chapter 3, pp.3-13 to 3-17

Six categories: knowledge, comprehension, application, analysis, synthesis, evaluation. The four levels of learning are what you'll use most: Rote (repeat it back), Understanding (comprehend it), Application (put it to use), and Correlation (apply it to new situations). Correlation is the goal — when the student can connect steep turn skills to unfamiliar maneuvers, they're at correlation level.

K6B: Affective Domain

AIH Chapter 3, pp.3-16 to 3-17

How learning gets internalized: receiving, responding, valuing, organizing, and characterization. Motivation and enthusiasm are central. You want students to internalize knowledge until it becomes part of who they are as pilots, not just something crammed for a test.

K6C: Psychomotor Domain

AIH Chapter 3, pp.3-17

Physical skills: observation, imitation, practice, and habit. Think learning to ride a bike — watch someone do it, try with training wheels, practice until one day you just ride without thinking about it. The three stages of skill acquisition (cognitive, associative, automatic response) map directly to this domain.

K7 — Characteristics of Learning

FI.I.B.K7

AIH Chapter 3, pp.3-19 to 3-20

- Purposeful — Give a reason why. "Because I said so" doesn't work.
- Result of experience — You can't learn to fly by reading about it.
- Multifaceted — Teaching slow flight also teaches lift, load factor, and how to learn itself.
- Active process — Repeating it back doesn't mean they understand it.

K8: Scenario-Based Training

AIH Chapter 3, pp.3-30 to 3-32

Research shows SBT is the most effective way to learn. Think D&D: the dungeon master has a scenario with trigger points and branching paths, and the players make decisions that lead to different outcomes. Your job is similar —

develop realistic scenarios and let the student make their own decisions. Tabletop scenarios are underutilized in GA. The primary objective might be the emergency procedure; the secondary objective is teaching ADM.

Key Insight: You don't have to be airborne to do effective SBT. Give your student a situation on the ground and have them talk through it. Learning is multifaceted — the emergency procedure is the obvious lesson, but decision-making is the real one.

K9 — Acquiring Skill Knowledge

FI.I.B.K9

K9A: Stages of Skill Acquisition

AIH Chapter 3, pp.3-23 to 3-26

Three stages: cognitive (reading and thinking about it), associative (connecting what happened last time to what's happening now), and automatic response (doing it smoothly while carrying on a conversation about lunch).

K9B: Knowledge of Results

AIH Chapter 3, p.3-25

Your student probably already knows something went wrong. Your job is to explain why: "That landing was great because you had a stable approach, and a good landing starts in the pattern." Root-cause feedback turns an observation into learning.

K9C: How to Develop Skills

AIH Chapter 3, pp.3-25 to 3-26

Skill development requires practice and time. An experienced pilot may struggle to articulate exactly how they do what they do — some things can only be learned by doing.

K9D: Learning Plateaus

AIH Chapter 3, p.3-26

Plateaus are natural. Recognize them early and manage them before they crush confidence. If slow flight has plateaued, switch to something they're good at. Build confidence back up, then circle back.

K10 — Types of Practice

FI.I.B.K10

AIH Chapter 3, pp.3-26 to 3-28

- Deliberate practice — Hyper-focused on one thing in a distraction-free environment.
- Blocked practice — Same thing over and over (20 touch-and-goes). Can create false sense of mastery.
- Random practice — Mixing skills: a landing, then a chandelle, then an emergency descent. Research shows this is the most effective type and fits naturally into SBT.

K11: Evaluation vs. Critique

AIH Chapter 3, pp.3-28 to 3-29

Iterative process: teach, practice, critique, repeat. Eventually graduate to pure evaluation — let them fly an entire flight and assess at the end without coaching along the way. That's what the DPE does on checkride day. Chapter 6 / AOO I Task D covers this in full.

K12: Distractions, Interruptions, Fixation, and Inattention

AIH Chapter 3, pp.3-30 to 3-31

Distractions divert attention; interruptions break task flow and create error pathways. The classic example: getting a radio call mid-checklist and then skipping a step. Train students to handle these strategically, not randomly. In the airline world, check airmen intentionally insert radio calls during checklists to evaluate prioritization.

K13 — Errors

FI.I.B.K13

AIH Chapter 3, pp.3-33 to 3-35

Two types: Slips (plan to do the right thing but accidentally do the wrong thing) and Mistakes (plan to do the wrong thing and successfully do it). They can compound — misreading 2,000 feet for 3,000 feet is a slip; descending to the wrong altitude is a mistake built on that slip.

DPE Perspective: Perfection is not the standard. If you fly a perfect checkride with zero errors, the DPE can't evaluate how you recover from mistakes — and that's arguably the most critical component of ADM. Errors are learning opportunities.

K14 — Memory

FI.I.B.K14

K14A: Sensory Memory

AIH Chapter 3, p.3-35

Information retained for only seconds — the fire alarm that immediately focuses attention. Relevant data gets passed to short-term memory; the rest disappears.

K14B: Short-Term Memory

AIH Chapter 3, pp.3-36

The scratchpad. Working memory of short duration and limited capacity — roughly 30 seconds. Every ATC frequency you've ever tuned in used your short-term memory.

K14C: Long-Term Memory

AIH Chapter 3, pp.3-36 to 3-37

Relatively permanent storage of unlimited information. Think of penguins on an iceberg: new knowledge pushes older knowledge to the edges. That old knowledge doesn't die — it gets archived. When you relearn it, it comes back quickly. This is why recurrent training exists.

K14D: How Usage Affects Memory / Forgetting

AIH Chapter 3, pp.3-37

Retrieval depends on how often and how recently knowledge has been used. The core reason for recurrent training — the FAA's baseline flight review every 24 calendar months, and the professional standard of annual recurrent training.

K15 — Retention of Learning

FI.I.B.K15

AIH Chapter 3, pp.3-38 to 3-39

- Praise stimulates remembering — Positive feedback strengthens memory retention.
- Recall by association — Tie new knowledge to existing knowledge for stronger retention.
- Favorable attitudes aid retention — Without motivation, recall suffers.
- All senses improve learning — Associate a taste or smell with a lesson (the peppermint experiment).
- Meaningful repetition — Deliberate, purposeful repetition — not mindless blocked practice.

Key insight: after the first 10-15 minutes of a lecture, retention drops significantly until the last 5-10 minutes. Passive listening has only a 5% retention rate over 24 hours. Break up ground lessons and use active learning techniques.

K16: Transfer of Learning

AIH Chapter 3, pp.3-39 to 3-41

The ability to apply knowledge from one context to a new context. Essentially cognitive theory in action. Your student already knows how load factor feels in a car — connect that to how it works in a turn. Use analogies. The connections are already there; your job is to find them.

RISK MANAGEMENT ELEMENTS

You must demonstrate at least one of the three risk management elements below. A well-designed scenario naturally addresses all of them.

R1: Inadequate or Incomplete Instruction

FI.I.B.R1 | AIH Chapter 3

Failing to teach foundational concepts before building on them. Teaching landings before straight-and-level flight. Skipping the "why" and jumping straight to the "how."

R2: Lack of Learner Motivation

FI.I.B.R2 | AIH Chapter 3

A learner who doesn't see the purpose behind a lesson won't engage. Connect every lesson to their goals. Manage plateaus before they erode motivation. Tie back to Maslow's hierarchy.

R3: Recognizing and Correcting Learner Errors

FI.I.B.R3 | AIH Chapter 3

Errors are learning opportunities, not failures. Distinguish slips from mistakes. Provide root-cause feedback, not just "you did that wrong." Teach error recovery as a core skill.

SKILL ELEMENTS

You must demonstrate all of the following skill elements.

S1: Apply Educational Theories to Ground and Flight Instruction

FI.I.B.S1

Use behaviorism and cognitive theory appropriately. Build on existing knowledge with analogies. Structure building-block lessons that move from rote to correlation.

S2: Recognize and Correct Conditions That Undermine the Learning Process

FI.I.B.S2

Identify fear, distraction, poor self-image, fatigue, or lack of readiness. Address the element of threat. Manage learning plateaus before they damage confidence.

S3: Plan for and Use Techniques Including Realistic Distractions

FI.I.B.S3

Strategically introduce distractions — don't just throw them in randomly. Build complexity progressively. Use scenario-based training to stress-test knowledge in realistic environments.

WALKTHROUGH SCENARIO

This is the same returning pilot from Episode 1. The scenario continues to demonstrate how the learning process concepts apply in a practical evaluation context.

The Setup: A private pilot with an instrument rating contacts you. They haven't flown in 15 years. They had a landing accident at a Class B airport at night — gear collapsed, airplane totaled. They recently purchased a Beechcraft A36 Bonanza because of fond childhood memories of flying one with their father. They want to get checked out and back into flying.

Skill 1 — Apply Educational Theories

This student already has knowledge that just needs reconnecting. Use cognitive theory: draw connections between what they already know (Private Pilot skills, the instrument scan, how an airplane flies) and the new material (Bonanza systems, retractable gear, higher performance). Their accident history creates a self-esteem issue — address it early by referencing Maslow's Hierarchy and the element of threat.

Skill 2 — Recognize and Correct Undermining Conditions

The accident created fear around night landings and big runways. That element of threat must be removed before productive learning can happen. Plan a progression: day landings at familiar airports first, then gradually work toward the scenario that caused the accident — a night landing at a busy Class B. Check their timeline and availability; if they can't commit adequate time, that condition will undermine the learning process.

Skill 3 — Plan for Realistic Distractions

Once foundational skills are rebuilt and confidence restored, strategically add complexity. Start with the Class B during a quiet period in daylight. Progress to busier times. The final stress test: a night arrival at the busiest reasonable time — busy ATC, multiple frequencies, traffic. If they handle that, you've met all three skills through one well-designed training arc.

QUICK REFERENCE — AOO I, TASK B

Code	Element	Source
K1	Definitions of learning	AIH Ch 3, pp.3-2
K2A	Behaviorism	AIH Ch 3, p.3-2 to 3-3
K2B	Cognitive theory	AIH Ch 3, pp.3-4 to 3-5
K3	Perceptions and insights	AIH Ch 3, pp.3-7 to 3-9
K4	Acquiring knowledge	AIH Ch 3, pp.3-9 to 3-11
K5	Laws of learning (Thorndike)	AIH Ch 3, pp.3-1 to 3-13
K6A	Cognitive domain (Bloom)	AIH Ch 3, pp.3-13 to 3-17
K6B	Affective domain	AIH Ch 3, pp.3-16 to 3-17
K6C	Psychomotor domain	AIH Ch 3, pp.3-17
K7	Characteristics of learning	AIH Ch 3, pp.3-19 to 3-20
K8	Scenario-based training	AIH Ch 3, pp.3-30 to 3-32
K9A	Stages of skill acquisition	AIH Ch 3, pp.3-23 to 3-26
K9B	Knowledge of results	AIH Ch 3, p.3-25
K9C	How to develop skills	AIH Ch 3, pp.3-25 to 3-26
K9D	Learning plateaus	AIH Ch 3, p.3-26
K10	Types of practice	AIH Ch 3, pp.3-26 to 3-28
K11	Evaluation vs. critique	AIH Ch 3, pp.3-28 to 3-29
K12	Distractions / interruptions	AIH Ch 3, pp.3-30 to 3-31
K13	Errors (slips vs. mistakes)	AIH Ch 3, pp.3-33 to 3-35
K14A	Sensory memory	AIH Ch 3, p.3-35
K14B	Short-term memory	AIH Ch 3, pp.3-36
K14C	Long-term memory	AIH Ch 3, pp.3-36 to 3-37
K14D	Usage affects memory / forgetting	AIH Ch 3, pp.3-37
K15	Retention of learning	AIH Ch 3, pp.3-38 to 3-39
K16	Transfer of learning	AIH Ch 3, pp.3-39 to 3-41
R1	Inadequate / incomplete instruction	AIH Ch 3
R2	Lack of learner motivation	AIH Ch 3
R3	Recognizing / correcting errors	AIH Ch 3
S1	Apply educational theories	—
S2	Correct undermining conditions	—
S3	Realistic distractions / workload	—

VSL ACE Guide: Every ACS element links directly to the source material. Green buttons take you straight to the right page in the AIH, AFH, and dozens of other FAA documents. Get the ACE Guide at vslaviation.myshopify.com