


Course Development, Lesson Plans, and Classroom Training Techniques

Objective	
<p>To ensure the applicant learns the elements and techniques involved in course development, the development of lesson plans, and classroom training techniques.</p>	
Purpose <p>The primary job of every flight instructor is teaching. This lesson introduces aspiring CFIs to the elements of the teaching process and provides tools that can be used to create and deliver effective lessons and courses of instruction.</p>	
Schedule	Equipment
<ul style="list-style-type: none"> ● Ground Lesson: 25 minutes ● Student Q&A: 10 minutes 	<ul style="list-style-type: none"> ● Whiteboard / Markers (optional)
Student Actions	Instructor Actions
<ul style="list-style-type: none"> ● Ask any questions, receive study material for the next lesson. ● Watch linked video. ● Review listed references. 	<ul style="list-style-type: none"> ● Deliver the ground lesson (below). ● Answer student questions.
Completion Standards	
<ul style="list-style-type: none"> ● Student can explain the following concepts: <ul style="list-style-type: none"> ● Performance and Decision-Based Objectives ● Organization of a Lesson, Content ● Training Delivery Methods ● Demonstration and Performance Method ● Problem-Based Learning ● Instructional Aids 	

References

- FLY8MA.com Flight Training - “CFI ORAL EXAM: Part 1 | FOI”
 - YouTube - <https://www.youtube.com/watch?v=4lxiQeh0FFI>
- FAA-H-8083-9B (Aviation Instructor’s Handbook) - Chapter 5 [The Teaching Process], Chapter 7 [Planning Instructional Activity], Chapter 9 [Techniques of Flight Instruction]
- FAA-S-ACS-25 (CFI ACS) - Area I Task C
- FAA-S-8081-9D (CFII PTS) - Area I Task C, Area I Task D

Ground Lesson Outline

- Teaching - Process (Preparation, Presentation, Application, Assessment), Essential skills (People Skills, etc)
- Planning Instructional Activity - Course of Training, Blocks of learning, Training Syllabus, Lesson Plans
- Preparation of a Lesson
 - Performance-Based Objectives - Description, Conditions, Criteria
 - Decision-Based Objectives - Critical thinking skills, higher level of learning
 - Training Objectives and Completion Standards
 - What specific items or skills do you want the student to learn or understand/perform
- Organization of Material
 - Introduction
 - Attention, Motivation, Overview
 - Development - Main Body of Lesson
 - Past to Present, Simple to Complex, Known to Unknown, Frequently Used to Infrequently Used
- Training delivery methods
 - Lecture Method
 - General understanding, efficient use of time, teaching lecture allows student participation
 - Preparing - Establish objectives, Research, Organize, Plan Classroom Activity
 - Delivery - Read from script, Recite from memory, Extemporaneously from Outline, No Preparation
 - Discussion Method
 - Short intro lecture followed by instructor-student and student-student questions
 - Guided Discussion Method
 - Same as above but relies on students possessing some level of knowledge
 - Relies on skillful use of questions by instructor
 - Lead off question, Follow up questions, Rhetorical questions, Direct/Reverse/Relay questions
 - Electronic Learning
 - Simulation (BATDs, AATDs), Role-playing, Video Games
 - Demonstration-Performance Method - Best used for skills requiring practice
 - Explanation, Instructor Demonstration, Student Performance, Instructor Supervision, Evaluation
 - Drill and Practice Method
 - Promotes learning through repetition
 - Integrated Flight Instruction - Introduce Maneuvers with External and Internal References
- Problem Based Learning - Real-world situations
 - Methods - Scenario-Based Training, Collaborative Problem Solving, Case Study
 - Promotes deeper student understanding
- Instruction Aids and Training Technologies
 - Aids - Devices that assist instructor
 - Training Media - Physical means; Photos, Videos, Models, etc.
 - Should cover key points and concepts, do not use as a crutch
 - Examples - Whiteboard+Markers, Printed Materials, Enhanced Training Materials (app, video, etc)

Ground Lesson Content

- **Teaching** - Teaching is to instruct or train. As flight instructor candidates, we have all been instructed by probably several flight instructors over the course of our aviation studies. Flight instructors are expected to have a wealth of aviation-related knowledge, as well as the skills to properly guide their students through this knowledge.
 - **The Teaching Process** - The teaching process organizes the material that is to be taught in a way that the student can understand. It consists of four discrete steps:
 - Preparation/Planning
 - Presentation
 - Application
 - Assessment
 - **Essential skills** - It is not enough for an instructor to simply have a large amount of aviation-related knowledge or skills. A great pilot may not be a great instructor. The main task of an instructor is to understand both their students and the material to be taught sufficiently that they can assist their students with learning. All good teachers have these four essential skills:
 - **People skills** - Instructors must first and foremost understand their students as people, including their emotional needs. Additionally, instructors must be effective communicators.
 - **Subject matter expertise** - Instructors must possess a large amount of aviation-related knowledge, as the typical flight training curriculum is vast.
 - **Assessment skills** - Instructors must evaluate their students during training to ensure that information and skills are being retained and developed, as well as to uphold the required standards.
 - **Management skills** - Instructors must also be effective managers. They need to plan, lead, organize, and supervise all aspects of their students' flight training, such as airplane scheduling, time management during lessons, etc.

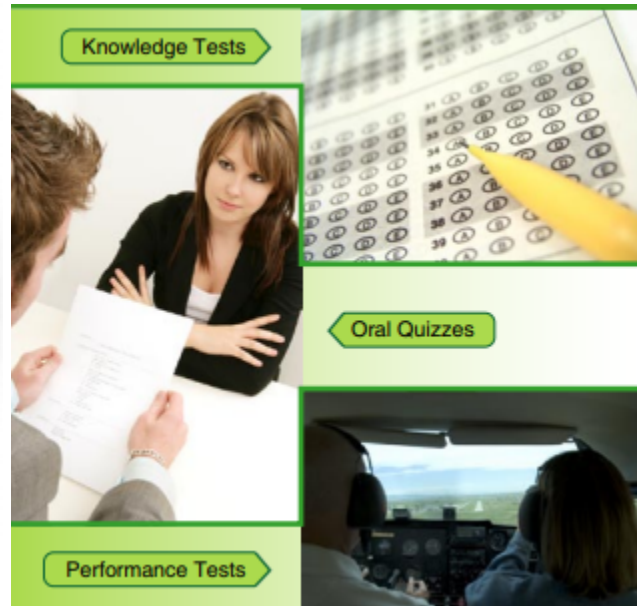
- **Planning Instructional Activity**

- **Course of Training** - A Course of Training is a series of studies leading to attainment of a specific goal, such as a certificate. Put simply, our students generally want to become pilots, or increase their level of certificate, and their flight instruction must be organized and deliberate. Instructors must use pre-prepared lesson plans, a training syllabus, and other formal methods to make sure that all important items are covered efficiently.
- **Blocks of learning** - When designing a course of training towards an objective, the blocks of learning represent individual skills or abilities that are necessary to attain the objective. Training should be organized such that we lay the foundational blocks first, and then build upon them.
- **Training Syllabus** - A training syllabus is the document that arranges the blocks of learning, often individual lessons, in the optimum order to achieve the training objectives. A syllabus may also include 'meta' information that outlines tasks or things that must be performed prior to, or in



between various lessons. A syllabus may also indicate when various student equipment is required in the training course.

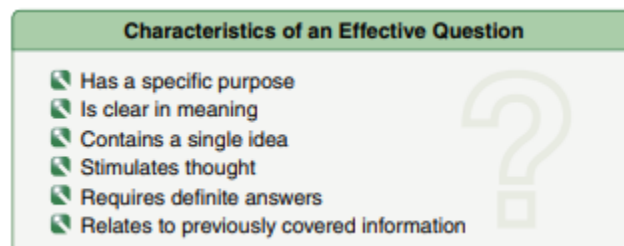
- **Lesson Plans** - Lesson plans are the concrete expression of the individual blocks of learning. They should be organized, and include detailed objectives and completion standards.
- **Preparation of a Lesson**
 - **Performance-Based Objectives**
 - **Description** - Concrete description of the skill or behavior desired
 - **Conditions** - The framework under which the skill or behavior is to be demonstrated, i.e. in flight, etc.
 - **Criteria** - The standards used to measure whether the objective was accomplished



- **Decision-Based Objectives** - Objectives that ask the student to make a decision
 - **Critical thinking skills** - Useful for teaching difficult concepts like Aeronautical Decision Making
 - **Higher level of learning** - Promotes learning at a higher level
- **Training Objectives and Completion Standards** - What specific items or skills do you want the student to learn or understand/perform
- **Organization of Material**
 - **Introduction**
 - **Attention** - Get the listener or reader's attention
 - **Motivation** - Tell them why they should care
 - **Overview** - Give a broad overview of the topic
 - **Development** - Main Body of Lesson
 - **Past to Present**
 - **Simple to Complex** - Introduce simpler concepts before progressing to complex ones
 - **Known to Unknown** - Build on what the student already knows
 - **Frequently Used to Infrequently Used** - Start with the most important information
- **Training delivery methods**
 - **Lecture Method**

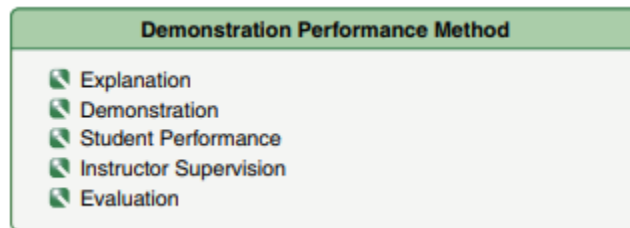


- Useful for providing a general understanding
- Efficient use of time
- Teaching lecture allows student participation
- **Preparing** - Lectures should be prepared
 - **Establish objectives** - What do we want the student(s) to learn?
 - **Research** - Research the subject and gather the material to be presented
 - **Organize** - Order the material in a logical fashion (e.g. known to unknown, etc)
 - **Plan Classroom Activity** - Plan the outline of the material and how it will be presented
- **Delivery**
 - **Read from script** - Not very engaging
 - **Recite from memory** - Difficult to perform, also relatively inflexible
 - **Extemporaneously from Outline** - Flexible, engaging, can read audience
 - **No Preparation** - Difficult to do well without a lot of practice
- **Discussion Method**
 - Short intro lecture followed by instructor-student and student-student questions
- **Guided Discussion Method**
 - Same as above but relies on students possessing some level of knowledge
 - **Relies on skillful use of questions by instructor**
 - **Types of Questions**
 - **Lead off question** - Questions which start a discussion
 - **Follow up questions** - Questions which continue a discussion
 - **Rhetorical questions** - Not directed at anyone in particular
 - **Direct questions** - Directed at a specific individual
 - **Reverse questions** - Redirect question back to the student, promote more thinking
 - **Relay questions** - Redirect one student question to be answered by a different student
 - **Effective Questions** - Good questions are purposeful, clear, contain a single idea, stimulate thought, require definite answers, and relates to the information already covered

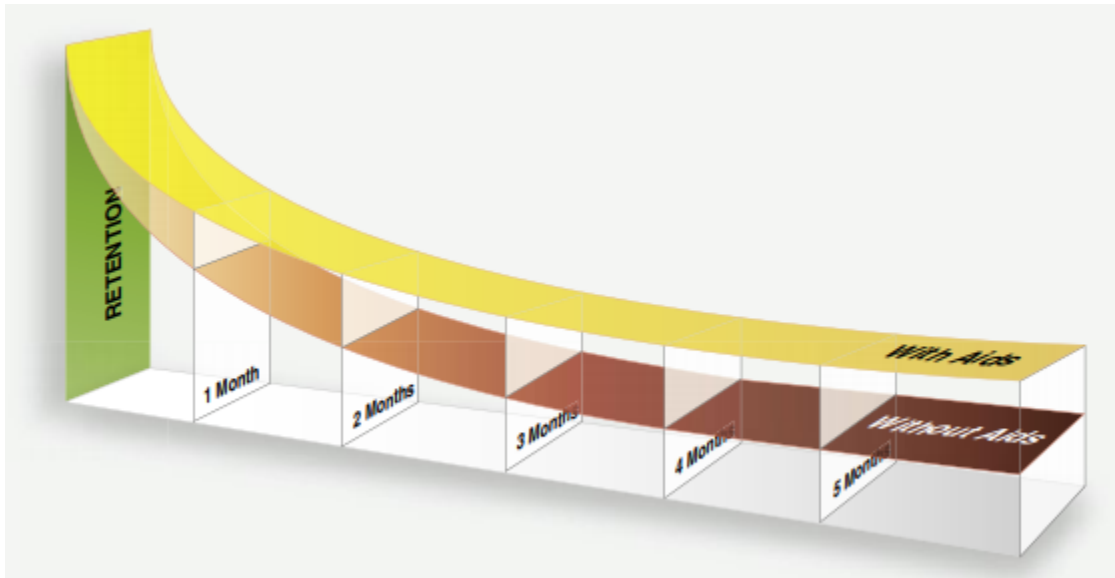


- **Electronic Learning (e-Learning) Method**
 - **Simulation** - Flight simulators (BATDs, AATDs), etc.

- **Role-playing**
- **Video Games**
- **Demonstration-Performance Method** - Students hear an explanation, observe the task, then try to repeat it
 - **Steps**
 - **Explanation** - Can be done as a pre-flight lesson or briefly recapped before maneuver
 - **Instructor Demonstration** - Instructor performs the task
 - **Student Performance** - Student attempts to perform the task
 - **Instructor Supervision** - Instructor watches carefully
 - **Evaluation** - Instructor provides feedback right away



- Best use for skills requiring practice
- **Drill and Practice Method** - Perform skills over and over until automatic
 - Promotes learning through repetition
- **Integrated Flight Instruction**
 - Introduce Maneuvers with External and Internal References
 - Builds confidence in using flight instruments to supplement outside references
 - Develops habits of cross-referencing the instruments
- **Problem Based Learning**
 - **Real-world situations** - More relatable
 - **Methods**
 - **Scenario-Based Training** - Construct realistic scenarios and prompt students to make decisions and apply knowledge from several areas
 - **Collaborative Problem Solving** - Groups work together on a problem to exchange ideas
 - **Case Study** - Evaluate a description of real events and critique the decisions made by the real participants, should relate to a message that the instructor wants to convey
 - Promotes deeper student understanding
- **Instruction Aids and Training Technologies** - Any physical or visual aids used to help convey a lesson



- **Aids** - Devices that assist instructor
- **Training Media** - Physical means
 - **Photos**
 - **Videos**
 - **Models**
- Should cover key points and concepts, do not use as a crutch
- **Examples**
 - **Whiteboard+Markers**
 - **Printed Materials**
 - **Enhanced Training Materials (app, video, etc)**