Study Unit 5 – Planning Instructional Activity

Page 67, Subunit 5.1: The following new outline content is added based on new FAA questions concerning course development.

5.1 COURSE DEVELOPMENT

1. Any instructional activity must be competently planned and organized if it is to achieve the desired learning outcomes. A course of training is a complete series of studies leading to attainment of a goal, such as a certificate of completion, graduation, etc.
   a. First, you must determine the overall objectives and standards of the course.
   b. Then, you must identify the blocks of learning which constitute the necessary parts of the total objective.
      1) You must ensure that each block of learning identified is truly an integral part of the overall objective:
         a) Extraneous blocks of instruction are expensive frills, especially in flight instruction, and detract from the completion of the final objective.
      2) The blocks of learning must be developed and arranged in their proper sequence.
         a) In this way, a student can master the segments of the overall pilot performance requirements individually and can progressively combine these with other related segments until their sum meets the final objective.
2. A training syllabus is an abstract or digest of the course of training. It consists of the blocks of learning to be completed in the most efficient order. A determination of objectives and standards is necessary before any important instruction can be presented. Any instructional activity must be competently planned and organized if it is to achieve the desired learning outcomes.

a. The order of training can and should be altered when necessary to suit the progress of the student and the demands of special circumstances. The broad overall objective of any pilot training is to qualify the student to be a competent, efficient, safe pilot.

1) However, it is often preferable to skip to a completely different part of the syllabus when the conduct of a scheduled lesson is impossible, rather than proceeding to the next lesson, which may be predicated completely on skills to be developed during the lesson being postponed.

b. There are two types of objectives in aviation: performance-based objectives and decision-based objectives.

3. Performance-based objectives are used to set measurable, reasonable standards that describe the required student performance.

a. They provide a way of stating what performance level is desired of a student before progressing to the next stage of instruction.

b. Written objectives are clear, measurable, and repeatable.

c. These objectives consist of three elements: description of the skill or behavior, conditions, and criteria.

1) Description of the skill or behavior: desired outcome of training stated in concrete terms that can be measured.

   a) EXAMPLE: “The student should be able to repeat the steps to a proper engine start.”

2) Conditions: used to explain the rules under which the skill or behavior is to be demonstrated.

   a) EXAMPLE: “Using an approved airplane checklist and referencing the Pilot’s Operating Handbook, perform a normal engine start.”

3) Criteria: the standards used to measure the accomplishment of the objective.

   a) EXAMPLE: “Using an approved airplane checklist and referencing the Pilot’s Operating Handbook, perform a normal engine start. Engine power should be reduced to below 1000 RPM after the engine is engaged, and fuel pump adjustments should be made as required in the POH.”

d. Practical Test Standards (PTS) provide specific performance-based objectives based on the standards that must be met for the issuance of a particular aviation certificate or rating.
4. **Decision-based objectives** allow for a more dynamic training environment and are designed to develop pilot judgment and ADM skills.

   a. Combined with traditional task and maneuver training, decision-based objectives facilitate a higher level of learning and application and thus reduce improper pilot decision making and increase overall flight safety.

5. Instructors must identify the blocks of learning that make up the necessary parts of the total objective.

   a. You must ensure that each block of learning identified is truly an integral part of the overall objective.

      1) Extraneous blocks of instruction are expensive frills, especially in flight instruction, and detract from the completion of the final objective.

   b. The blocks of learning must be developed and arranged in their proper sequence.

      1) In this way, a student can master the segments of the overall pilot performance requirements individually and can progressively combine these with other related segments until their sum meets the final objective.

   c. Students will master segments of blocks individually and can progressively combine these with other related segments until the overall training objectives are reached.

      1) **EXAMPLE:** Flight training may be divided into the following major blocks: achievement of the knowledge and skills necessary for solo flight, achievement of the knowledge and skills necessary for solo cross-country flight, and achievement of the knowledge and skills appropriate for achieving a private pilot certificate.

   d. Using this approach provides the student with a boost of self-confidence as each block is successfully completed.

6. A training syllabus is an abstract or digest of the course of training. It consists of the blocks of learning to be completed in the most efficient order.

   a. All syllabi should stress well-defined objectives and standards for each lesson.

   b. The order of training can and should be altered when necessary to suit the progress of the student and the demands of special circumstances, such as weather conditions.

      1) However, it is often preferable to skip to a completely different part of the syllabus when the conduct of a scheduled lesson is impossible, rather than proceeding to the next lesson, which may be predicated completely on skills to be developed during the lesson being postponed.

      2) **EXAMPLE:** If a student is having a difficult time with normal approach and landings, it might be wise for the instructor to skip the next proposed lesson on short field landings and instead review another area of training. This would enable the student to gain confidence and reinforce skills needed to perform normal landings.
Page 67, Subunit 5.2: The following new outline content is added based on new FAA questions concerning organization of training material. The title of the subunit has been changed to emphasize the scope of the content.

5.2 ORGANIZATION OF TRAINING MATERIAL

1. The teaching process can be divided into four basic steps: preparation, presentation, application, and review/evaluation.
   a. Every lesson, when developed adequately, falls logically into these four steps.

2. Regardless of the teaching method used (lecture, guided discussion, or demonstration—performance), an instructor must properly organize the material. Once a determination of objectives and standards has been made, an instructor must formulate a plan of action to lead students through the course in a logical manner toward the desired goal. One effective way to organize a lesson is by introduction, development, and conclusion.
   a. The introduction sets the stage for everything to come. The introduction can be divided into three subparts:
      1) Attention -- The instructor must gain the students’ attention and focus it on the subject.
         a) EXAMPLE: Stories, video clips, questions, or jokes can be used to gain student attention.
      2) Motivation -- The instructor should offer specific reasons why they need to learn the material. This motivation should appeal to each student personally and accentuate the desire to learn.
         a) EXAMPLE: The instructor may talk about where the knowledge in the lesson was or will be applied in real life or remind students of an upcoming test on the material.
      3) Overview -- Each lesson introduction should contain an overview that tells the group what is to be covered during the period.
         a) The overview is presented as a clear, concise presentation of the objective.
   b. The development is the main part of the lesson during which the instructor organizes the explanations and demonstrations in a manner that helps the students achieve the desired learning outcomes.
      1) The instructor must logically organize the material to show the relationships of the main points to each other. This is done by developing the main points in one of the following ways:
         a) Chronologically; from past to present or present to past
         b) From simple to complex
         c) From known to unknown (i.e., using a student's previous experiences and knowledge to acquire new concepts)
         d) From most frequently used (most familiar) to least frequently used
c. The conclusion retraces the important elements of the lesson and relates them to the objective.

   1) This reinforces the student’s learning and improves retention of what has been learned.

   2) New ideas should not be introduced in the conclusion because doing so at this point in the lesson will only confuse the student.

Page 68, Subunit 5.3: The following new outline content is added based on new FAA questions concerning lesson plans.

5.3 LESSON PLAN

1. Each lesson of the training syllabus includes an objective, content, and completion standards.

2. A lesson plan is an organized outline that is developed for a single instructional period.
   a. A properly constructed lesson plan will provide an outline that tells the instructor what to do, in what order to do it, and what teaching procedure to use.
   b. The lesson plan must be appropriate for the particular student.
      1) Standard lesson plans may not be effective for students requiring a different approach.
      2) Therefore, the main concern in developing a lesson plan is the student.

3. A lesson plan should be prepared in writing for each instructional period, regardless of the instructor’s experience to show what specific knowledge and/or skills will be taught during a lesson.
   a. A so-called mental outline is not a lesson plan.
   b. Another instructor should be able to take the lesson plan and know what to do in conducting the same period of instruction.

4. Lesson plans are designed to ensure that each student receives the best possible instruction under existing circumstances. Lesson plans help instructors keep a constant check on their own activity, as well as that of their students.

5. Steps to ensuring a quality lesson:
   a. Determine the objective of the lesson,
   b. Instructor research,
   c. Determine the method of instruction,
   d. Identify the lesson planning format,
   e. Decide how to organize the lesson and supporting material,
   f. Assemble training aids, and
   g. Write the lesson plan outline.

6. A characteristic of a well-planned lesson is that it should contain new material that is related to the lesson previously presented.
   a. In flight training, a short review of earlier lessons is usually necessary.
   b. Each lesson should also fall logically into the four steps of the teaching process: preparation, presentation, application, and review/evaluation.
Each lesson plan should contain the following items: lesson objective, content, schedule, equipment, instructor’s actions, student’s actions, and completion standards. See the illustration below.

<table>
<thead>
<tr>
<th>GROUND LESSON</th>
<th>REFERENCE MANEUVERS</th>
<th>STUDENT ____________</th>
<th>DATE ________</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE</strong></td>
<td>• TO DEVELOP THE STUDENT’S SKILL IN PLANNING AND FOLLOWING A PATTERN OVER THE GROUND COMPENSATING FOR WIND DRIFT AT VARYING ANGLES.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **CONTENT**   | • USE OF GROUND REFERENCES TO CONTROL PATH.  
• OBSERVATION AND CONTROL OF WIND EFFECT.  
• CONTROL OF AIRPLANE ATTITUDE, ALTITUDE, AND HEADING. | | |
| **SCHEDULE**  | • PREFLIGHT DISCUSSION. : 10  
• INSTRUCTOR DEMONSTRATIONS. : 25  
• STUDENT PRACTICE. : 45  
• POSTFLIGHT CRITIQUE. : 10 | | |
| **EQUIPMENT** | • CHALKBOARD FOR PREFLIGHT DISCUSSION.  
• IFR VISOR FOR MANEUVERS REVIEWED. | | |
| **INSTRUCTOR’S ACTIONS** | • PREFLIGHT - DISCUSS LESSON OBJECTIVE, DIAGRAM "S" TURNS, EIGHTS ALONG A ROAD, AND RECTANGULAR COURSE ON A CHALKBOARD.  
• INFLIGHT - DEMONSTRATE ELEMENTS. DEMONSTRATE FOLLOWING A ROAD, "S" TURNS, EIGHTS ALONG A ROAD, AND RECTANGULAR COURSE. COACH STUDENT PRACTICE.  
• POSTFLIGHT - CRITIQUE STUDENT PERFORMANCE AND MAKE STUDY ASSIGNMENT. | | |
| **STUDENT’S ACTIONS** | • PREFLIGHT - DISCUSS LESSON OBJECTIVE AND RESOLVE QUESTIONS.  
• INFLIGHT - REVIEW PREVIOUS MANEUVERS INCLUDING POWER-OFF STALLS AND FLIGHT AT MINIMUM CONTROLLABLE AIRSPEED. PERFORM EACH NEW MANEUVER AS DIRECTED.  
• POSTFLIGHT - ASK PERTINENT QUESTIONS. | | |
| **COMPLETION STANDARDS** | • STUDENT SHOULD DEMONSTRATE COMPETENCY IN MAINTAINING ORIENTATION, AIRSPEED WITHIN 10 KNOTS, ALTITUDE WITHIN 100 FEET, AND HEADINGS WITHIN 10 DEGREES, AND IN MAKING PROPER CORRECTION FOR WIND DRIFT. | | |

Also see Figure 1A on page 79 for an example of a ground lesson plan.

The objectives of each lesson, content to support these objectives, and completion standards should be clearly stated.

a. The objective is the reason for the lesson -- what the student is expected to know or be able to do at the end of the lesson.

b. Keeping the student informed of lesson objectives and completion standards minimizes the student’s insecurity.
9. Fatigue is the primary consideration in determining the length and frequency of flight instruction periods.
   a. Fatigue resulting from excessive or lengthy instruction reduces a student's learning ability.

10. When planning time for student performance, a primary consideration is the length of the practice session.
   a. A beginning student reaches a point where additional practice is not only unproductive but may be harmful.
      1) Overlearning is the continued study of a skill after initial proficiency has been achieved. Practice proceeds beyond the point at which the act can be performed with the required degree of excellence.
      2) One common effect of overlearning is the development of automated routines rather than development of concept application skills.
   b. As a student gains experience, longer periods of practice are profitable.

11. A blank lesson plan is provided on page 159 so you may make copies for your use.

Page 70, Subunit 5.4: The following new outline content is added based on new FAA questions concerning instructional aids. The title of the subunit has been changed to clarify the scope of the content.

5.4 INSTRUCTIONAL AIDS AND TRAINING TECHNOLOGY

1. Instructional aids are useful tools that emphasize, support, and supplement, or reinforce the key points or concepts in a lesson and assist an instructor in the teaching-learning process.
   a. Instructional aids include models, chalkboards, charts, and projected material (e.g., videotapes, movies, slides, etc.).

2. Reasons for using instructional aids include the following:
   a. Helping students remember important information,
   b. Gaining and holding student attention,
   c. Clarifying the relationship between material objects and concepts, and
   d. Giving support when topics involve the use of more senses (i.e., sight, hearing, or a combination of others).

3. The following four-step procedure should be used to determine if and when instructional aids are necessary:
   a. Clearly establish the lesson objective, being certain what must be communicated.
   b. Gather the necessary data by researching for support material.
   c. Organize the material into an outline or lesson plan. The outline should include all key points to be presented.
   d. Finally, determine what ideas should be supported with instructional aids.
      1) They should be compatible with the learning outcomes to be achieved.
      2) They should be designed to cover the key points in a lesson.

4. Instructional aids used in the teaching/learning process should not be used as a crutch by the instructor.
Page 71, Subunit 5.1: The following new questions have been added concerning course development. One previously released question in this subunit (Question 2) has been deleted. Question 5 was moved from 5.3 to 5.1. The newly added outline material will support the following questions.

2. In planning instructional activity, the second step is to
   A. develop lesson plans for each period or unit of instruction.
   B. identify blocks of learning which constitute the necessary parts of the total objective.
   C. develop a training syllabus that will serve as a guide for conducting training at each level of learning.

   Answer (B) is correct. (AIH Chap 6)
   **DISCUSSION:** In planning instructional activity, the second step (after the overall training objectives have been established) is the identification of the blocks of learning that constitute the necessary parts of the total objective.
   Answer (A) is incorrect. To develop lesson plans for each period or unit of instruction, an instructor must first determine the overall objectives, then identify the blocks of learning necessary to meet those objectives. Answer (C) is incorrect. A training syllabus is an abstract of the course of training. It consists of the blocks of learning to be completed in the most efficient order and thus must be developed after the blocks have been identified.

5. Performance-based objectives consist of which three elements?
   A. Flight training scenarios, judgment assessment, and maneuver assessment.
   B. Cognitive skills, affective skills, and psychomotor skills.
   C. Description of the skill or behavior, conditions, and criteria.

   Answer (C) is correct. (AIH Chap 4)
   **DISCUSSION:** Performance-based objectives are used to set measurable, reasonable standards that describe the desired performance of the student. Performance-based objectives consist of three elements: description of the skill or behavior, conditions, and criteria.
   Answer (A) is incorrect. This answer choice describes elements of decision-based, not performance-based, objectives. Answer (B) is incorrect. This answer choice describes the three domains of learning, not the elements of performance-based objectives.

6. A series of studies leading to an attainment of a goal is
   A. a determination of objective.
   B. a course of training.
   C. a decision based objective.

   Answer (B) is correct. (AIH Chap 4)
   **DISCUSSION:** A course of training is a complete series of studies leading to attainment of a goal, such as a certificate of completion, graduation, etc.
   Answer (A) is incorrect. A determination of objectives and standards is necessary before any important instruction can be presented. Answer (C) is incorrect. Decision-based objectives are a type of objective designed to develop pilot judgment and ADM skills.

7. What is the overall objective of any pilot training?
   A. To make sure all objectives are clear, measurable, and repeatable.
   B. To facilitate a higher level of learning and application.
   C. To qualify the student to be a competent, efficient, safe pilot.

   Answer (C) is correct. (AIH Chap 4)
   **DISCUSSION:** The broad overall objective of any pilot training is to qualify the student to be a competent, efficient, safe pilot.
   Answer (A) is incorrect. Making sure written objectives are clear, measurable, and repeatable is an element of a performance-based objective. Answer (B) is incorrect. Decision-based objectives facilitate a higher level of learning and application and thus reduce improper pilot decision making and increase overall flight safety.
8. Which is not a type of objective used in aviation training?
   A. Performance-based objectives.
   B. Decision-based objectives.
   C. Description-based objectives.

Answer (C) is correct. (AIH Chap 4)

DISCUSSION: A description-based objective is not a type of objective in aviation training.

Answer (A) is incorrect. There are two types of objectives in aviation: performance-based objectives and decision-based objectives. Performance-based objectives are used to set measurable, reasonable standards that describe the required student performance. Answer (B) is incorrect. There are two types of objectives in aviation: performance-based objectives and decision-based objectives. Decision-based objectives allow for a more dynamic training environment and are designed to develop pilot judgment and ADM skills.

9. Which element of a performance-based objective explains the standards used to measure the accomplishment of the objective?
   A. Description of the skill or behavior.
   B. Conditions.
   C. Criteria.

Answer (C) is correct. (AIH Chap 4)

DISCUSSION: Criteria are the standards used to measure the accomplishment of the objective.

Answer (A) is incorrect. The description of the skill or behavior is the desired outcome of training stated in concrete terms that can be measured. Answer (B) is incorrect. Conditions are used to explain the rules under which the skill or behavior is to be demonstrated.

10. What is true of all syllabi?
    A. The order of training should not be altered as this will detract from the completion of the final objective.
    B. All syllabi should stress well-defined objectives and standards for each lesson.
    C. Common ground between the student and instructor will be established by using a syllabus.

Answer (B) is correct. (AIH Chap 4)

DISCUSSION: All syllabi should stress well-defined objectives and standards for each lesson.

Answer (A) is incorrect. The order of training can and should be altered when necessary to suit the progress of the student and the demands of special circumstances, such as weather conditions. Answer (C) is incorrect. Establishing a common ground between the instructor and student is the purpose of a lesson introduction and is not dependent on a syllabus.

Page 73, Subunit 5.2: The following new questions have been added concerning the organization training material. The newly added outline material will support the following questions.

17. Examples of methods to gain student attention include
    A. Jokes, video clips, questions.
    B. Lectures, guided discussions, demonstrations.
    C. Review problems, case studies, explanations.

Answer (A) is correct. (AIH Chap 4)

DISCUSSION: Stories, video clips, questions, or jokes can all be used to gain student attention.

Answer (B) is incorrect. Lectures do not prompt student attention. Stories, video clips, questions, or jokes are all methods to gain student attention. Answer (C) is incorrect. While case studies are a type of story, they are a type of problem-based learning and are used in the development stage of a lesson, not in the introduction.

18. Reinforcement of student learning occurs primarily during which state of lesson organization?
    A. Introduction.
    B. Development.
    C. Conclusion.

Answer (C) is correct. (AIH Chap 4)

DISCUSSION: Conclusions retrace important elements of the lesson and relate them to the objective. This reinforces the student's learning and improves retention.

Answer (A) is incorrect. The introduction sets the stage for everything to come. Answer (B) is incorrect. The development is the main part of the lesson during which the instructor organizes the explanations and demonstrations in a manner that helps the students achieve the desired learning outcomes.
Page 77, Subunit 5.3: The following new questions have been added concerning lesson plans. One previously released question in this subunit (Question 26) has been deleted. Two questions (Questions 6 and 7) have been moved to Subunit 5.3 as that is a more appropriate location for the material. The newly added outline material will support the following questions.

26. What is the primary consideration in determining the length and frequency of flight instruction periods?
   A. Fatigue.
   B. Mental acuity.
   C. Instructor preparation.
   Answer (A) is correct. (AIH Chap 8)
   **DISCUSSION:** Fatigue is the primary consideration in determining the length and frequency of flight instruction periods. Flight instruction should be continued only so long as the student is alert, receptive to instruction, and performing at a level consistent with experience.

6. When teaching new material, the teaching process can be divided into which steps?
   A. Preparation, presentation, application, and review and evaluation.
   B. Preparation, demonstration, practice, and review.
   C. Explanation, demonstration, practice, and evaluation.
   Answer (A) is correct. (AIH Chap 4)
   **DISCUSSION:** The four basic steps in the teaching process are preparation, presentation, application, and review and evaluation.

36. Every lesson, when adequately developed, falls logically into the four steps of the teaching process -
   A. preparation, introduction, presentation, and review and evaluation.
   B. preparation, introduction, presentation, and review and application.
   C. preparation, presentation, application, and review and evaluation.
   Answer (C) is correct. (AIH Chap 6)
   **DISCUSSION:** Every lesson, when developed adequately, falls logically into the four steps of the teaching process: preparation, presentation, application, and review/evaluation.

37. Which is not a step to ensuring a quality lesson?
   A. Instructor research.
   B. Assembling training aids.
   C. Determining the length of the practice session.
   Answer (C) is correct. (AIH Chap 6)
   **DISCUSSION:** While a primary consideration in planning for student performance, determining the length of the practice session is not a step to ensuring a quality lesson.

38. What are lesson plans designed to ensure?
   A. That each student receive the best possible instruction under existing circumstances.
   B. To reinforce student learning and retention of the stated objective.
   C. To provide a boost of self-confidence to each student.
   Answer (A) is correct. (AIH Chap 6)
   **DISCUSSION:** Lesson plans are designed to ensure that each student receives the best possible instruction under existing circumstances.

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44. What is one reason an instructor would use an instructional aid?

A. To describe a desired outcome of training.
B. To gain and hold student attention.
C. To describe the standards used to measure the objective.

Answer (B) is correct. *(AIH Chap 4)*

**DISCUSSION:** A reason to use instructional aids in the teaching/learning process is that they will gain and hold the attention of students.

Answer (A) is incorrect. An element of a performance-based objective, the description of the skill or behavior describes a desired outcome of training in concrete terms that can be measured. Answer (C) is incorrect. Criteria describe the standards used to measure the accomplishment of the objective.