INSTRUCTIONAL CONCEPTS AND TECHNIQUES FOR THE FLIGHT AND AVIATION MAINTENANCE INSTRUCTOR

by

Thomas F. Walby
Adjunct Instructor
Embry-Riddle Aeronautical University
College of Career Education, Miami Resident Center, Florida

Chapter 1: Factors Affecting Student Perception

Overview:

For learning to proceed efficiently, the instructor requires an understanding of the factors which affect the student's perceptions:

➔ Physical State

The physical well being of an individual affects that person's capability to receive information.

➔ Psychological Needs

The self-concept of an individual may affect that person's desire to receive information. If the student has a negative experience which contradicts his self-image, he may **block out** the experience. If the student has a poor self-concept, perceptions may be inhibited by psychological barriers called **defense mechanisms**.

➔ Goals and Values

The commitment and motivation of an individual will affect the quality of perceptions. Highly valued things are pursued more intensely.

➔ Time and Opportunity

The opportunity to receive information, and the time to relate that information to previous learning, affects the quality of perceptions.

➔ *Element of Threat*

Fear adversely affects a student by narrowing the perceptual field. Attention is focused on the threatening object or condition. Any action by the instructor that is **interpreted** as threatening, makes the student less able to accept the experience. If the training situation becomes overwhelming to the student, a threat exists. Threatening a student with unsatisfactory reports is not an effective way to enhance his desire or capability to perceive. Learning is not necessarily a logical problem: learning is a problem.

Perceptions, or meaningful blocks of **input**, are organized, related, and associated by the brain. The result is called **knowledge**. Learning is the acquisition of knowledge and is demonstrated by behavioral change which utilizes that knowledge.

Insight:

As perceptions increase in number, the student assembles them into larger **blocks**. Without new experience, there can be no new perceptions, but, as previous input is organized, related, and associated, an active cognitive process called **insight** may occur.

The mind actively processes the information received into new forms. Insight may result in inspirational solutions to problems. Insight contains the ability to apply solutions previously learned to new problems, or to **generalize**. Forgetting is less of a problem because there are more anchor points. For instruction to be efficient, the information must be presented in a meaningful way which assists the student's organization and association. It is very difficult to recall disorganized or unrelated

information. Pointing out relationships, providing a secure environment in which to learn, and helping the student maintain a favorable self-concept are most important in fostering insights. The student's task of remembering the material is made much easier by organized presentation and directed practice.

Memory:

Learning is related to memory. memory may be divided into three separate systems:

1. *Sensory memory* is made up of the lingering traces of information sent to the brain by the senses. The information is immediately forgotten unless transferred to short-term memory. (e.g., a radio frequency to be used only once.)

2. *Short-term memory* receives information from sensory memory, rehearses it, and transfers it to the next stage. The efficiency of the transfer process depends, to a great extent, on the organization of the material. Information not transferred is shortly forgotten. (e.g., a radio frequency which will be used often.)

3. *Long-term memory* permanently stores information. If the material is properly organized, it can be recalled or retrieved. (e.g., the same frequency **memorized**.)

Forgetting:

Major theories of forgetting are speculative to some degree, and all may be partly true at certain times:

➔ *Disuse or failure in the retrieval process*

Memory may be below the level of conscious capability.

➔ *Interference*

A certain experience may overshadow, or intervene with, the material. Very similar material appears to interfere with memory more than dissimilar material.

➔ *Repression or motivated forgetting*

Some submersion of unpleasant ideas into the unconscious mind occurs because the anxiety producing material is protectively and selectively **forgotten**. The material is so upsetting that remembrance is avoided: we forget because we want to forget.

➔ *Fading or distortion of the memory trace*

The strength of the biochemical memory pattern tends to fade away with time.

Frequently, when new learning occurs, we quickly forget much of what we have learned, but we remember some portion for a very long time. The various theories of learning imply that the material is not lost, but merely unavailable for recall.

Chapter 2: Retention of Learning

The instructor's task is to make certain that the students learn the material so well that the information or skill is available for recall. Drill, recitation, and quizzing assist the student in establishing information in memory. Recitation has been shown to be an extremely effective method during initial learning. Habit patterns, which have been firmly established by repeated usage, are retained and may be recalled even after years of disuse. Memory, which stores that learning classified as knowledge, has a major role in the retention of motor skills, and is a major factor in learning.

There are five principles which affect the retention of learning:

➜ *Praise stimulates remembering*

Responses which give pleasurable return tend to be repeated. Absence of praise or recognition tends to discourage remembering, and any form of negativism tends to make recall less likely.

➜ *Recall is promoted by association*

Unique or disassociated facts tend to be forgotten unless they are of special interest or application.

➜ *Favorable attitudes aid retention*

People learn and remember only that which they wish to know. Without positive motivation, based on rewarding objectives, there is little chance for recall.

➜ *Learning with all our senses is most effective*

When more than one sense responds to an event, a stronger impression of the experience results.

➜ *Meaningful repetition aids recall*

Each repetition gives the student the opportunity to gain a clearer and more accurate perception. Practice provides the opportunity for learning, but does not cause it.

Chapter 3: Motivation

Overview:

Positive motivation is essential to learning and is the dominant force which governs a student's progress. The instructor can use the student's desire for personal gain, comfort, security, group approval, or personal achievement to advantage. Negative motivation (e.g., threats or reproof) should be avoided. Motivation may not remain at a uniformly high level. Slumps in learning are often the result of slumps in motivation which may be related to external influences.

Students want a tangible return for their efforts. Praising students who have performed well encourages greater effort. Prestige, or group approval, is an extremely powerful motivational force. Confidence, through confirmation of a positive self-image, results in rapid progress. New material, based on previous achievements, can facilitate confidence in a building block approach to a syllabus. Conversely, failure breeds disappointment in a cycle difficult to interrupt. The goal must be clear and the reward constantly apparent. If the importance of a lesson is not apparent to the student, an explanation of the relationship of the lesson to the overall goal is required. Avoid significant drill and practice on operations which do not contribute to performance.

Hierarchy of Human Needs:

When a need is satisfied, it no longer provides motivation, and the individual strives to meet the next level of needs.

➜ *Physical Needs*

Until the needs for food, rest, exercise, and shelter are met, people cannot concentrate on learning or self- expression.

➜ *Safety Needs*

Protection against danger, threat, and deprivation.

➜ *Social Needs*

Social needs include belonging, associating, giving, and receiving friendship and love. Students separated from normal surroundings have a pronounced need for association and belonging.

➜ *Egoistic Needs*

Egoistic needs have a direct influence on the student - instructor relationship. There are two distinct groups:

➸ Needs related to **self-esteem:** need for self-confidence, independence, achievement, competence, or knowledge.

➸ Needs related to **reputation**: need for status, recognition, appreciation, or respect.

➜ *Self-fulfillment (self actualization) Needs*

Self-fulfillment needs include

realizing potentialities, continued development, and creativity. Aiding a student in realizing is the most worthwhile accomplishment of an instructor. When an instructor works toward understanding human relations, students experience fewer frustrations and devote more attention to learning.

Motivation and Learning:

The factor that perhaps has the greatest influence on learning is motivation, the force that causes a person to move toward a goal. It can be rooted in any of the hierarchy of human needs which compel people to act, to move, to start working toward an objective, or achieve a purpose. The task of instructors is to first recognize and identify these needs.

Students must be motivated in order to maximize and sustain their efforts. A student's desire to fly or fix an aircraft is not sufficient to sustain activity because it is a long-term goal. It is difficult to see how each day's efforts contributes to the distant certification. Motivation must be put on a daily basis; that is, each session must have its own reward.

These daily incentives are classified into two types; those that are related to the subject being learned, and those not related to it:

➜ *Intrinsic*

This is the motivation of a student by means directly related to the subject. If instructors show the students how each session, maneuver, and briefing will help them become better pilots, or to learn the next maneuver, pass the oral, written or evaluation ride, they are using intrinsic motivation. This type of motivation produces the best results.

➜ *Extrinsic*

This is the motivation of a student by means indirectly related to the subject. If the instructor uses things outside the subject, such as social approval, esprit de corps, etc., extrinsic motivation is being used. There is a distinct place in the overall process for this type of motivation.

Whether motivation is positive or negative depends, in most cases, on the instructor's approach. Positive motivation promises a reward, while negative motivation makes a threat. Positive motivation should be used in preference to negative motivation although negative motivation can be used as a **LAST RESORT**. It will often cause a great deal of activity, if only for a short time.

As a general rule, there are three types of negative motivation which should never be used. They are:

⊗ *Sarcasm*

Derogatory language (used even in a joking manner), or saying the opposite of what is meant will cause not only resentment and uncertainty, but also will quickly destroy the proper student-instructor relationship.

☹ *Ridicule*

Scornful language, designed to belittle or humiliate, will ultimately destroy the student's respect for the instructor.

☹ *Fear*

Mild fear can be used effectively, as in physical security (see, *Law of Intensity*). Strong fear should never be used because student reaction is unpredictable; it may assume such proportion as to cause failure in training.

Chapter 4: The Learning Process

Levels of Learning:

Learning can be considered as occurring on different levels:

➜ *Rote learning* is simply a performance, a read-back, with no understanding.

➜ *Understanding* occurs as insights form.

➜ *Application* involves the ability to apply the knowledge in a useful way.

➜ *Correlation* involves the ability to associate the blocks into meaningful wholes and understand the relationship of the parts. The ability to generalize, or apply the technique to the solution of new problems, is achieved.

The Performance of Skills:

The process of learning to perform motor or mental skills appear to be the same. Learning a physical skill requires practice: similarly, mental skills require practice. If students are to use sound judgement, they must have learning experiences where judgement is exercised. If students are to solve problems successfully, they must have experience in applying principles to solve realistic problems. (LOFT)

A clearly organized example which demonstrates the pattern to follow is necessary for efficient learning. While a muscular sequence is learned, conceptual and attitudinal changes will occur.

The instructor must be cautious that incidental learning does not detract from the overall goal. Impressing a student with the difficulties or dangers of a task may be well meaning, but may serve to discourage the student or otherwise make learning difficult.

Practice of the skill is necessary to achieve a satisfactory level of performance, but a beginning student reaches a point where additional practice is unproductive and may be harmful. Errors may increase and motivation declines. Three or four repetitions provide the maximum effect, and the rate of learning, or probability of retention, falls rapidly with more trials in one session. As experience increases, longer practice periods may be profitable.

Mistakes are not always apparent to the student. It is important for students to know when they are correct. Mistakes should not be practiced. It is far more difficult to unlearn than to learn. If necessary, repeat demonstrations or examples to show the standard.

Progress follows a consistent pattern. Rapid improvement during early trials is followed by a **Learning Plateau**. If the student is aware of the normal leveling process, unwarranted frustration may be avoided. It is possible that the student's limit of capability has been reached, but the apparent lack of increasing proficiency does not necessarily mean that learning has ceased. If the student's interest has waned, the instructor may need a more efficient

method for increasing progress.

During the initial stages of learning a task, practical suggestions are more helpful than a grade. Specific comments are more meaningful and useful after the skill has been partially mastered.

Students must learn the performance of tasks to a point where the skills required are habitual. Overlearning skills may make performance of the task easy.

Habit Formation:

Habit formation is essential for correct performance after initial training. Each simple task must be performed correctly before the next task is introduced. The introduction of instruction in advanced or complex operations, before the elements are mastered, leads to the formation of incorrect habit patterns. The faulty performance of the elements of a complex task carries through to future learning.

Transfer of Learning:

There is some degree of transfer in all learning. New learning is based upon previous learning, and people interpret new things in terms of what they know. When a student is aided by things previously learned, the transfer is positive. Negative transfer occurs when a student is hindered by things previously learned.

Students of equal ability may have different success because of positive or negative transfer. It is important for the instructor to have knowledge of the student's previous experience.

The sequence of course material should be planned so that each phase provides positive transfer to the next phase. Positive transfer should be planned as a major objective.

Students must recognize the types of situations where it is appropriate to use specific skills. The instructor must make certain that students understand when to apply that which has been learned to other situations. Use instructional material that helps the student form generalizations and makes the relationships clear.

Obstacles to Learning:

The following obstacles to learning are common to flight instruction and have been recognized as major factors:

➔ *A student's feeling of unfair treatment*

If a student believes that his instructor is not **supportive**, that the student's presence is not welcome, that the instructor does not care about his progress, or that impossible demands are being made, the student's motivation will suffer. The assignment of difficult, but unattainable goals will be seen as challenging.

➔ *The student's impatience to proceed to more interesting operations*

The impatient student does not understand the need to master basics. The

instructor should clearly identify the elements mastered in preceding steps as they apply to a demonstration of subsequent steps.

➜ *Student worry, or lack of interest*

The instructor cannot be responsible for outside influences that affect the student, but he/she must consider their influence on the student. Instruction must be keyed to the utilization of the student's interests and enthusiasm and to diverting attention away from worries and troubles.

➜ *Physical discomfort*

Symptoms of illness or fatigue will frequently affect vision, hearing, feeling, balance, or alertness, which are essential to a correct performance by a flight crew member. Effective instruction cannot be conducted when the student is incapacitated.

When fatigue is recognized, as a result of inadequate rest or intense concentration, a break in the instruction, or the introduction of maneuvers involving different elements and objectives, may be desirable. Training, which can be absorbed by one student without fatigue, does not necessarily indicate the tolerance of another. Instruction should only be continued if the student is alert and receptive.

➜ *Apathy fostered by poor instruction*

Poor instructor preparation leads to spotty coverage, misplaced emphasis, repetition, and the student's complete lack of confidence. Instruction may be so overly elemental, general, or complicated that the student loses interest.

Poor presentation may result from distracting mannerisms, personal untidiness, or the appearance of irritation. "Talking Down," to the student will cause a lack of confidence and attention.

➜ *Fear, anxiety, or timidity*

Fear, anxiety, or timidity limit the student's perceptive ability. For learning to be effective, the student must be made to feel safe, comfortable, and at ease.

Laws of Learning:

E.L. Thorndike's six **Laws of Learning** summarize the Fundamentals of Learning:

➜ *Law of Readiness*

Individuals learn best when they are ready to learn or are positively motivated. Outside interests, responsibilities, worries, personal problems, or crowded schedules may result in low interest in learning.

➜ *Law of Exercise*

Things most often repeated are best remembered. Every time practice occurs, learning continues.

➜ *Law of Effect*

Learning is strengthened when accompanied by pleasant or satisfying

feelings; learning is weakened by unpleasant or dissatisfying feelings. Experiences which produce feelings of defeat, frustration, anger, confusion, or futility are unpleasant. The learning situation should affect students positively and provide satisfaction. Impressing students with the difficulty of the task **can make learning difficult**.

➜ *Law of Primacy*

The first impression is strong. The first experience should be positive, functional, and lay the foundation for all that is to come. What is taught the first time must be correct. What is learned the first time must be correct. Unteaching is more difficult than teaching.

➜ *Law of Intensity*

Vivid, dramatic, exciting learning experiences teach more than routine or boring experiences. Students will gain a greater understanding more quickly by performing rather than observing or using some other performance substitute. The instructor should use **imagination** in approaching reality as closely as possible.

➜ *Law of Recency*

Things most recently learned are best remembered; things least recently learned are least remembered. Carefully prepared summaries of ground school lessons or post flight critiques (debriefings) will restate or emphasize important material.

Common Misconceptions:

Misconceptions, based on partial truths, **traditional** methods, or even sadism and domination, have been erroneously accepted by misguided individuals in the aviation community. Professional instructors should not accept the misconceptions described below.

⇨ Some instructors apply **punishment or threat** in the belief that students can be motivated by fear.

⇨ Some people believe that the mind must be exercised by **unpleasant tasks** or that great physical effort must be expended in order to learn. They feel that making it easier for a student to learn is contrary to sound teaching philosophy.

⇨ It is popular belief that, "one picture is worth a thousand words." According to this theory, the **presentation of an unexplained picture** is more productive than a written or verbal presentation.

⇨ Some teachers believe that the quality of a learning experience depends solely on the **length of the training period**. "More is necessarily better," in their view.

⇨ Some instructors believe that it is necessary to **remain impersonal** in order to be effective. They feel that, "students must be kept in their place," or an attempt will be made to compromise standards.

⇨ Some people believe that **competition** is the key to learning, and that slower learners must fail.

⇨ One educational philosophy preaches

that **students must experience setbacks** and disappointments because failure and frustration is the best preparation for life. Tests should be developed so that no one can pass.

Many of these misconceptions are prevalent, even in recognized institutions of learning, but all have been discredited as effective techniques.

Chapter 5: Human Behavior

Overview:

Knowledge of human needs and defense mechanisms can aid the instructor in promoting a climate conducive to learning.

Defense Mechanisms:

Defense mechanisms are subconscious defenses employed against unpleasant realities. These defenses are used often to soften, or make acceptable, feelings of failure, to alleviate guilt, and to protect feelings of worth or adequacy. The following common defense mechanisms may be used by students:

➔ *Rationalization*

Excuses which are plausible and acceptable to the student for failure or poor performance. This defense is a subconscious justification of that which is unacceptable, but sincerely believed.

➔ *Flight (Escape)*

The student **runs away** from his/her problems. Symptoms include physical or mental ailments and daydreaming. When carried to an extreme, the fantasy world and the real world become confused.

➔ *Aggression*

The best defense is an offense. Anger may be conventionally expressed, but in a classroom, simulator, or aircraft, because of the social structure, aggressiveness may be expressed more subtly by irrelevant questions, refusal to participate, or disruptive activities. Anger may be vented on neutral objects not related to the problem.

➔ *Resignation*

The student becomes so frustrated that he/she gives up or accepts defeat. A common cause of the frustration is the bewilderment associated with being lost in an advanced phase of training because the fundamentals were not grasped.

Student-Instructor Relationship:

To be effective, an instructor must acquire and maintain the student's confidence. The instructor is more than an authority figure. From the student's point of view, the instructor is the expert. Careful preparation of the material and consideration of the student's interests and needs are essential elements in maintaining student confidence.

No two students are alike, and the same methods of instruction will not be equally effective for all students. The **average personality** fits no one. In order to determine the appropriate method of instruction, the student's temperament, background, and interests should be explored.

An instructor, who has **incorrectly analyzed** her/his student, may find that the

desired results are not produced. As an example, a student incorrectly analyzed as a slow thinker because of reluctance to act, may actually lack self-confidence. The correct technique would be instruction directed at developing the student's confidence in his/her own capability and judgement, not in drill on the fundamentals of a maneuver.

Students who are having difficulty. require instructional methods that combine keen perception and tact. **Slow students** may develop feelings of incompetence with too much help and encouragement. Timid persons may be overwhelmed by too much criticism, but they may rise to the challenge of brisk instruction.

Students who are **discouraged or lack confidence** should be assigned attainable goals. Complex maneuvers can be separated into elements which are mastered before the whole operation is attempted.

Apt students may be challenged by raising the standard of performance progressively.

Students should be made aware of their progress. The failure of an instructor to **communicate** his **evaluation** of the student's progress may block further effective instruction.

With careful preparation, keen analysis, and a continuing deep interest in her/his students, the instructor will provide effective instruction.

Role of the Instructor:

The instructor has the responsibility to make learning interesting and pleasurable. People devote considerable effort to attain the pleasures of self-enhancement and personal satisfaction. People are proud of difficult achievements because they want to feel capable. Students will experience pleasure from a task well done, or from successfully meeting the challenge of a difficult operation. The instructor can maintain a high level of motivation in his/her students without rancor or unpleasantness. A perceptive teacher can make learning an interesting, pleasurable, and rewarding experience.

Sustaining a student's interest can be achieved by pointing out the objectives of each lesson or session. The student will have a goal which will give meaning to the student's efforts. learning should provide an opportunity for the student to build self-confidence and discover her/his capabilities.

Learning should be a period in which correct habit patterns and judgment are developed. The instructor must foster these goals with logical presentation and by example.

The instructor must give credit when it is due. When people perform excellently, they want their abilities and efforts recognized. If there is no note taken, frustration results. Praise from an instructor is an ample reward and an incentive to greater accomplishment. Praise given too freely becomes meaningless.

Criticism must be constructive. Mistakes and failures require identification, but helpful explanations must accompany the critique. It is necessary to be consistent. The same performance accepted at one time, but not at another, serves to confuse and frustrate the student.

No one is expected to be perfect. If the instructor tries to bluff, the student will sense it, and confidence will be destroyed. If you make a mistake, admit it and correct it.

It is generally recognized that instructor qualifications must be based equally on proficiency and teaching ability. The instructor's proficiency must go far beyond that which is required for certification. In order to demonstrate maneuvers or procedures to a student, the instructor's performance should be without faults or deficiencies. The ultimate blow to a student's confidence may be the inability of the instructor to adequately demonstrate.

The habits of the instructor, during his/her instruction, and as he/she is observed conducting other operations, have a vital effect on safety. Each instructor is a paragon of flying to his/her students, who will consciously or unconsciously imitate her/his habits. The instructor's description and advocacy of safety practices becomes meaningless when he/she is observed violating them. Habitual observance of regulations, of safety precautions, and the precepts of courtesy will enhance and support the instructor's professional image.

Qualities of Good Instructors:

Some of the qualities of good instructors are:

☺ They never show favoritism,

☺ They never bluff,

☺ If they don't know the answers to relevant questions they say so, find the answer, and tell the student later,

☺ They are not hasty in judgements,

☺ They understand, and follow, Company policy and procedure,

☺ They acknowledge their own mistakes. The admission that, "you were right and I was wrong," does much to develop morale.

☺ They are decisive. They weigh all factors necessary to make decisions, and then act with conviction.

☺ They are interested in their students and let them know it by being familiar with their backgrounds, problems and achievements. They know how their students are progressing.

☺They respect their students' rights, and when correcting mistakes do so in a straightforward manner, never using sarcasm as a correction method.

☺ They are enthusiastic. Instructor enthusiasm is reflected in student learning.

☺ They use humor. Appropriate

humor creates goodwill and can be used to teach difficult subject material. But they never become so humorous that the business at hand becomes secondary.

☺ They encourage initiative, self-reliance, ideas, and suggestions. By doing so, they teach students to reason for themselves instead of driving them to rigid conformity. However, they stress that there are certain boundaries which must not be overstepped.

☺ They understand that it is important to plan their lessons.

Chapter 6: The Teaching Process

Fundamentals of Teaching:

There are four steps in the teaching process:

➜ *Preparation*

The preparation necessary for each lesson or session includes the instructor's written determination of the material to be covered, the objectives of the lesson or session, the goals which she/he hopes to attain, the procedures and facilities to be used, and the means to be used for evaluating the results. The syllabus may include student home study or other special preparation.

The conscientious instructor does not limit his/her objectives to merely meeting the minimum standards necessary to qualify a student to be competent, efficient, and safe. The plan should provide for the development of the student's **maximum potential**.

➜ *Explanation and Demonstration*

The instructor's presentation of the knowledge and skills required for the lesson or session must be clear, pertinent to the objectives, and based on the experience and knowledge of the student. If a maneuver is to be demonstrated, extraneous activity should be eliminated. Any deviation in performance from that described in the manual or explanation should be immediately explained

➜ *Drill and Practice*

The student's recitation, solving of problems, or performance of maneuvers should be practiced as directed by the instructor. Trial and error, by comparison to directed learning, is inefficient and should not be utilized as a training methodology for flight crew members.

➜ *Review and Evaluation*

Review and evaluation (critique) are integral parts of each lesson, or session. The instructor should review the salient points and the student should be informed of her/his progress. The instructor's evaluation, based upon the objectives and goals established in the syllabus, should be documented as per standard operating procedure.

Developmental Teaching:

Developmental teaching is a student-centered philosophy of teaching which requires instructors to reason with their students to have them arrive at predetermined objectives. Using the student's background knowledge, instructors ask questions which lead the student to determine the next step in a procedure, the logical application of a principle, or the final solution to a problem. The rate of progress in developing the more complex ideas of a lesson or session is governed by the student perception and comprehension. While questions should be asked by the instructor to review previously learned material, developmental teaching begins when students are required to reason out and make suggestions with respect to

new material.

Developmental teaching has been used throughout the years by all good teachers. Because of the requirement for every student to participate, developmental teaching is most effective with small groups. It can be used at any level of student knowledge provided that the instructor knows or determines the proper level, and proceeds accordingly. Depending upon the subject matter, some lessons or sessions can be entirely developmental. More frequently, however, there will be a combination of teaching by explanation, where it may be more efficient to explain certain material, and by developmental teaching, where critical areas of the subject matter are reasoned with the students. In almost every lesson or session some developmental teaching is appropriate and desirable.

If developmental teaching technique is new, there may be an initial apprehension about it's use. We may be reluctant to give the students credit for being able to think for themselves. Students consistently surprise instructors if given a chance to participate actively in the learning process. The disadvantage of lecturing during a session briefing is that the students are frequently presented with information that they already know, or that they can reasonably be expected to deduce for themselves. The best teaching occurs when the students are led to a point where they can systematically direct their own reasoning to the solution of problems. The secret of effective learning is to keep the students mentally active in the learning process, and in they are forced into mental activity.

Syllabus:

The training syllabus is the basis for the training curriculum. The order of the training builds upon the previous blocks of instruction and is designed to facilitate the student's progress. Deviation from the syllabus, after approval by the instructor's supervisor, should be documented.

Briefings:

I. There is an *easy way to recall* the briefing process.....

A M O L

The instructor can use "**AMOL**" as a guide when performing briefings (a) or when presenting an item (b) during a briefing.

AIM:

a) the session to be covered with a statement of the new and review work to be covered.

b) a simple statement of the item to be covered.

MOTIVATION:

a) give a concise but brief statement of where the session as a whole fits into the training and why it is important. Keep it general, do not go into specifics about individual maneuvers here.

b) a specific statement of why that particular item is important to learn. Should

always be positive, and intrinsic whenever possible.

OUTLINE:

a) give a brief overview of the progression of the briefing. Outline the various sections or stages of the body of the briefing.

b) give the major points of discussion. May be omitted for short topics with only one part.

LINK:

a) relate the topic whenever possible to the student's previous experience. Recent experiences are best.

b) [same as (a), above].

II. *Pocket and Pause:*

After each section of the briefing, pause for a few seconds to allow the student to absorb the material and to think of any questions he/she might have. This also lets the student know that particular section is finished and that a new topic will be commenced.

Oral Quizzing:

Regular and continued evaluation of the student's learning is necessary for judging the effectiveness of the training and for planning the emphasis and pace of subsequent instruction. The most practical means of evaluation is questioning by the instructor. Quizzing by the instructor can have a number of desirable results:

- Reveals the effectiveness of the instructor's training procedures,
- Checks the student's retention,
- Reviews material previously covered,
- Retains the student's interest and stimulates thinking,
- Emphasizes important points,
- Identifies points which need more emphasis,
- Checks student's comprehension, and
- Promotes active student participation.

Effective quizzing requires preparation. Good questions are rarely spontaneous. Questions which are ambiguous, not clearly associated with the subject, or do not require specific answers are of little value. Such questions provide little information to the instructor and are confusing and frustrating to the student.

"Catch," questions should be avoided. The student will feel that he/she is in a battle of wits, and the significance of the subject will be lost.

The instructor must be certain that she/he understands a student's question before attempting to answer. The instructor should display interest in the student's question and frame a direct and accurate answer. The instructor should determine that he/she has provided all information required and that the student is satisfied with the answer. If the instructor cannot answer the student's question, available reference should be consulted to provide the answer as soon as

possible. "I don't know, but I'll find out as soon as possible," is the **only response** acceptable when the instructor does not have a specific answer to a student's question.

Good Questioning Technique:

a) **Qualities of a Good Question**:

☺ Simple,

☺ Specific,

☺ Correct Wording.

b) **Good Questioning Technique**:

☺ Pose the Question,

☺ Wait for the Answer,

☺ Respond to the Answer.

c) **To Be Avoided**:

☹Questions that Antagonize,

☹ Exposing Ignorance (don't ask a question that you don't think a student can answer),

☹ Vague Questions.

Demonstrations of Ability:

Evaluation of performance during instruction must be based upon established standards modified to account for the student's experience and stage of development. To be meaningful to the instructor, the evaluation must consider the student's mastery of the elements as well as the overall performance. In cases where AIM concepts are a required area of performance, then total interaction with other crew members, etc., will be taken into consideration.

As each maneuver or procedure is accomplished, or during postflight discussion (debriefing),the student should be made aware of her/his progress. Corrections or explanations should define the elements in which the deficiencies occurred, and the appropriate corrective measures should be accomplished. Unless safety of flight is threatened, the correction of student errors should **not** include overriding or taking the controls.

Applying Appropriate Standards:

Students will think, react, or progress differently from one another and in different phases of training. The professional instructor must become familiar with her/his student's thought processes and aptitudes in order to evaluate individual progress during training. The standards for certification may not be modified and all students recommended for certification must meet those standards.

Grading:

The two most common types of grading are the relative and the absolute. When the relative method is used, each student is rated against others in the group or time frame. When the absolute method is

used, only the actual quality of performance, as measured against the standard, is considered.

There are several common errors which instructors make in grading their student's performances. They are:

☹ *Error of Central Tendency*

Many instructors hesitate to give either extremely high or extremely low grades. They tend to group their ratings close to the center of the grading scale. If an error of central tendency is taking place, true ability is not reflected on the syllabus pages and, therefore, the grade is of little value.

☹ *Error of Standards*

Some instructors tend to overrate or underrate everyone in comparison to the ratings of most other instructors. They have different personal standards. This type of error should be corrected during the annual proficiency sessions.

☹ *Logical Error*

Instructors who have a logical error allow the performance of one item to influence their rating of another item which they associate with the first by logical connection. An unsatisfactory Take-off briefing, for example, might be extended to a logical error that the entire Take-off phase was unsatisfactory. The alert instructor should grade each maneuver separately and objectively.

☹ *Error of Familiarity*

When instructors see the same students every day for a number of weeks, they can lose their grading objectivity. They become accustomed to the student's weaknesses or eccentricities and overlook them as errors because they have become familiar with them. Anything that can be done to step back and get a new perspective will help avoid this type of error.

☹ *Error of Halo*

Many instructors tend to assign grades after being influenced by their general impression of the student. An instructor may like or dislike a student because of something that has been said or done, or because of his/her nationality or background, and this feeling often influences the grading pro or con.

☹ *Error of Narrow Criterion*

This error is sometimes made by new instructors who use the two students they have at the moment as though they represented the whole range of proficiency. For example, if both are superior students, the weaker of the two is graded as barely satisfactory if an error of narrow criterion is being made.

☹ *Error of Delayed Grading*

If the grading is separated long enough from the actual performance for information about the performance to be forgotten, then the grade is in error. If this

happens, the instructor will often go to the central tendency type of grading because of lack of pertinent information to justify extreme ratings. Another possibility is that the session will stand out in the instructor's mind, and the forgotten material will be rated according to this lingering impression.

Accurate grading is necessary in any training progress if the process is to be validated and standardization (quality control) maintained. This accuracy is difficult to achieve because numerous individuals of varying experience are involved; however, instructors must be aware of the error tendencies and do their utmost to ensure that those errors are not occurring in their grading.

Chapter 7: Instructor Responsibilities

Overview:

The correct performance of the instructor's responsibilities are of vital importance to the student's future performance and safety.

➔ *Instruction of students*

The basic and most important responsibility of the instructor is to provide the necessary ground, simulator or aircraft instruction.

➔ *Student supervision and surveillance*

It is the instructor's responsibility to correct observed unsatisfactory performance by the most reasonable and effective means. If the instructor is unable to correct the situation personally, the situation must be reported to higher authority for action.

➔ *Acceptance of the student*

The professional instructor must accept the student with his/her faults and problems. The student wants to learn, and the instructor makes her/himself available to assist in the process. The professional relationship of the instructor to his/her student must be based on the mutual acknowledgement that each is important to the other, and that both are working for the same objective.

➔ *Language and Culture*

The professional instructor must speak normally, clearly, distinctly, and without inhibition. She/he must cultivate the ability to speak positively and descriptively without diverting the student's ability to comprehend.

The instructor must pay careful attention to the usage of idiom, sarcasm and humor, especially when dealing with a student whose primary language is different that his/her's. In the same context, special attention must be focused on specific cultural norms in students from different cultural backgrounds. Any questions in these areas should be directed to supervisory personnel.

➔ *Self-improvement*

The professional instructor must never become complacent or satisfied with her/his qualifications or ability and must constantly strive to improve his/her qualifications, effectiveness, and the services which she/he provides. The instructor is considered an authority on aeronautical matters and is the expert to whom many questions are referred.

Aviation symposiums, FAA sponsored seminars and standardization meetings are three of many sources for continuing education. Opportunities are presented for the exchange of information with instructors from other companys and areas. Aviation periodicals, government publications, technical magazines, and in-house safety files and training bulletins are

sources of valuable information.

For a professional performance, it is essential that the instructor be familiar with, and in some cases maintain, the pertinent Flight Operations Manuals, Federal Air Regulations, Airman's Information Manual, Training and Standardization Memos, as well as airline (specific) directives, SOPs and memos.

Chapter 8: Conclusions

Strive to constantly keep a professional attitude towards the work and its challenges. Cultivate the social attributes of tact, sympathy, and patience. At all times project the instructor/check airman image. Be sincere, calm, disciplined, and objective. Be noted for your stability of temperament and a marked capacity for self control. Follow the rules yourself; keep the respect of your colleagues; operate by the book. In all your instruction:

- ✈ **PLAN AHEAD**
- ✈ **HAVE A TARGET**
- ✈ **KEEP IT SIMPLE**
- ✈ **KEEP THE OBJECTIVE CLEAR & ATTAINABLE**

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