

## Task A: Effects of Human Behavior and Communication on the Learning Process

### MMDA BBD

#### Elements of Human Behavior

- Definitions of Human Behavior
  1. **How and why humans function** the way they do
  2. **The result of attempts to satisfy certain needs**
- Instructor and Learner Relationship - everyone has different learning styles, personalities, etc. research shows that learners whose learning style is compatible with an instructor's teaching style and personality retain information longer, apply it more effectively, learn more, and have a more positive attitude in general throughout training.
- Motivation: (school/work)
  - (+) promise or achievement of rewards (more effective than negative)
  - (-) useful in certain situations, typically causes fear
  - tangible**: financial, public recognition, awards
  - intangible**: personal comfort, group approval, favorable self image
- Maslows Hierarchy of Needs (school/work)
  - Physiological**: air, water, food, shelter, sleep, clothing
  - Safety**: personal security, employment, resources, health
  - Belonging and Love**: friendship, intimacy, family, sense of connection
  - Esteem**: respect, status, recognition, strength, freedom
  - Cognitive and Aesthetic**: need to know and understand, emotional needs for liking
  - Self-Actualization**: desire to "be all you can be", do what your "born to do"
- Defense Mechanisms: (dating, victims of trauma, work/athletic performance)  
DR DR FCPR – AIH 2-9
  - Denial**: refusal to accept reality
  - Repression**: things unable to cope with are pushed away
  - Displacement**: shifting emotions from the original matter to a substitute
  - Reaction Formation**: faking a belief opposite of the truth
  - Fantasy**: dreaming about the future, escapism
  - Compensation**: emphasizing a good quality to cover up a bad one
  - Projection**: places blame on someone else
  - Rationalization**: justifying actions that would be unacceptable - failed an exam, but said they didn't have enough time to complete it; didn't do the homework associated

#### Learner Emotional Reactions

- Fear: Fight vs Flight
  - Anxiety (Normal): most significant factor affecting flight instruction; worry or unease about something that's going to happen, typically with uncertain outcome
  - Stress = body's response to demands placed upon it
  - Normal reaction to stress: Responding rapidly and exactly within limits of training
  - Abnormal Reactions to Stress (motorcycle class)  
PRE SIM – AIH 2-15
    - Painstaking self-control
    - Rapid changes in emotion (within a lesson)
    - Extreme overcooperation
    - Severe anger (towards instructor, staff, ramp ppl)
    - Inappropriate laughter/singing
    - Marked changes in mood (between lessons)
  - Flight Instructor Responsibilities - Some students are not cut out for flight training. If these are displayed, politely refuse to train, possibly refer to FSDO or authorities depending on severity
- WIPAA – AIH 2-12
- Worry or lack of interest
  - Impatience
  - Physical Discomfort, Illness/Fatigue, Dehydration
  - Anxiety (covered above)
  - Apathy due to inadequate instruction

#### Teaching the Adult Learner

- The average age of an aviation learner is 30. Unlike primary or secondary school, or even university, most flight students are adults, with busy, active lives. They are pursuing aviation learning goals for their own enjoyment, or career goals. It's important to keep in mind that these students usually have the following characteristics:
- Their primary reason for learning is they find the skill or knowledge useful
- They seek training to cope with life changing events (e.g. new jobs, pursuing new careers)
- They are autonomous and self-directed and need independence and control
- They have a wealth of life experiences that they draw upon
- They are goal-oriented, and relevancy-oriented. They want to apply their knowledge immediately.
- They are practical, and will focus on elements that they find most useful.
- They must be shown respect, like all students. The need to increase or maintain self-respect is a strong motivator for adult learners.
- Basic Elements of Communication (classroom)

SSR – AIH 4-2

Source: instructor

Symbols: tools

Receiver: student

- Barriers to Effective Communication: Find examples of each one  
COIL – AIH 4-4  
Confusion between the sender and receiver  
Overuse of abstractions (words that are general, not specific)  
Interference because of **physiological, psychological, environmental** factors  
Lack of common experience;  
words/language/meaning; or experience (not knowledge or analogies, Joseph/internet dialup)

- Developing Communication Skills  
LIQIR – AIH 4-6  
Listening: self evaluation technique  
Instructional Communication: using experience to illustrate concepts and learner exhibits desired response  
Questioning: determine student retention  
Instructional Enhancement: gain additional experience and training = make you a better subject matter expert  
Roleplay: practice makes perfect (practice pax briefings, ATC comms in simulator)

## Task B: The Learning Process - LFAL DCATS RFR MT

- Learning Theories  
BICC – AIH 3-2  
Behaviorism: human behavior can be predicted based on past rewards and punishment; stimulus and response  
~~Information Processing: brain processes, stores, and can retrieve information just like a computer~~  
Cognitive: knowing, perceiving; problem-solving, decision making  
~~Constructivism: acquire skills and knowledge through experience~~
- **Perception**: giving meaning to stimuli from senses (fire alarm)
- **Insight**: grouping of perceptions meaningful wholes (Shark Tank: evaluating a business pitch)
- Factors that Affect Perception  
G-STEP – AIH 3-7  
Goals and Values: every experience is affected by the individual's values and beliefs  
Self-Concept: positive self-image – open to new things  
Time and Opportunity: proper sequence and time necessary for learning  
Element of Threat: attention is limited to threatening idea/object

Physical Organism: provides individuals with the perceptual apparatus for sensing the world around us

- **Insight**: grouping of perceptions into meaningful wholes
- Acquiring Knowledge  
MUC – AIH 3-9  
Memorization: first attempt to acquire knowledge  
Understanding: begin to organize knowledge in useful ways, recognize similarities between ideas  
Concept Learning: by grouping info into concepts, we create manageable categories
- Laws of Learning  
REEPIR – AIH 3-11  
Readiness: learn best when ready to learn  
Exercise: things most often repeated are remembered  
Effect: learning strengthened when accompanied with good feeling  
Primacy: first impression on things lasts longer  
Intensity: learning experience through real life situations  
Recency: things most recently learned are best remembered
- Domains of Learning  
CAP – AIH 3-13  
Cognitive (RUAC)  
Affective (ARVOI)  
Psychomotor (OIPH)
- Cognitive Domain (thinking):  
RUAC – AIH 3-15 (*levels of learning*)  
Rote: ability to repeat but can't understand  
Understanding: comprehend/grasp the meaning  
Application: putting what is learned to use  
Correlation: associating what has been learned, understood, and applied to previous learning
- Affective Domain (feeling)  
ARVOI – AIH 3-16  
Awareness: open to learning  
Response: active participation  
Value: decides on value of training  
Organization: organizes training into personal belief system  
Integration: internalizes training and incorporates that value into their lives
- Psychomotor Domain (doing)  
OIPH – AIH 3-17  
Observation: observing instructor perform  
Imitation: student attempts to copy  
Practice: student builds proficiency  
Habit: student can perform the skill too
- Characteristics of Learning  
PEAM – AIH 3-19  
Purposeful – student must find purpose in learning

Experience (result of) – has to learn from personal experience

Active Process – student needs to react and respond to learning

Multifaceted – student need to fully exercise their mind and feelings to learn; incidental learning

- Acquiring Skill Knowledge

CAA – AIH 3-24

Cognitive: memorizing steps to a skill

Associative: practice begins to store the skill

Automatic Response: through practice the skill becomes automatic

- Types of Practice

DBR – AIH 3-26

Deliberate: practice specific areas and receive specific feedback

Blocked: practicing the same drill until it becomes automatic

Random: mixes up skills throughout practice session

- Scenario Based Training

HIC – AIH 3-31

Has a clear objective

Is tailored to the students' needs

Capitalizes on nuances of local environment

- Errors

Mistake: student plans to do the wrong thing and does (error of thought)

Slip: student plans to do the right thing and does the wrong (error of action)

- Retention of Learning

MR LAMP – AIH – 3-38

Meaningful Repetition aids recall

Recall is enhanced by association

Learning with all senses

Attitudes(favorable)

Mnemonics

Praise

- Forgetting

RIFRS – AIH 3-37

Retrieval Failure: inability to retrieve information

Interference: new experiences overshadow previous experiences

Fading: will forget if info is not used overtime

Repression: unconsciously forget unpleasant feeling from negative experience

Suppression: consciously forget unpleasant feeling from negative experience

- Reducing Errors

DRCULT – AIH 3-33

Developing Routines: standard procedures checklist

Raising Awareness: "out of the ordinary" checklists

Checking for errors: read-do-verify on preflight

Using reminders

Learning and practicing

Taking your time

- Memory

Sensory: input from the senses

Short Term: info is stored for 30 seconds, 7 bits of info, then fades or put into long term

Long Term: info stored for future use, can last a lifetime (recall)

- Transfer of Learning

Positive: Task A aids Task B

Negative: Task A interferes with Task B

Task C: Course Development, Lesson Plans, and Classroom Training Techniques

TEO PECCT

- Teaching Process

PPAR – AIH 5-5

Preparation

Presentation

Application

Review and evaluation

- Essential Teaching Skills

MAPS – AIH 5-1

Management: planning

Assessment Skills: evaluating

People Skills: connect with people

SME: high level of knowledge

Essential parts of a lesson plans - OEEISC

- Organization of Material

IDC

Introduction: to the lesson

a. Attention: sets focus of lesson

b. Motivation: to learn this lesson

c. Overview: what lesson includes

Development: KMSP - known to unknown, most frequently used to least frequently used, past to present, simple to complex

Conclusion: summary review of what was covered

- Problem Based Instruction

SCC - AIH 5-18

Scenario based: what if

Collaborative: teacher provides a problem to the group, who then collaborates to solve it. promote HOTS skills; teacher provides limited assistance.

Case study: real world past event

- Characteristics of Effective Instructional Aids

COGS – AIH 5-24

Clearly establish lesson objective

Organize material into outline/lesson plan

Gather necessary data by researching support material

Select ideas to be supported with instructional aids

- Characteristics of Good Scenarios  
SWIDS – AIDS 1-27
  - Should not promote errors
  - Will not have one right answer
  - Is not a test
  - Does not offer obvious answer
  - Should promote situational awareness and ADM
- Characteristics of Good Lesson Plans  
FUCSPIR - AIH 7-8
  - Flexibility - space for add-on material
  - Unity - each lesson unified segment of instruction
  - Content - each lesson contain new material; and be somewhat related to previous material
  - Scope - each lesson reasonable in scope
  - Practicality - lesson suitable for the environment where it is to be conducted
  - Instructional Steps - PPAR
  - Relates to the training - overall course objectives
- Training Delivery Methods  
LEG CCDD – AIH 5-10
  - Lecture: IBFIT
    - Illustrated talk: uses visual aids
    - Briefing: pre/post flight briefing
    - Formal: TED talk
    - Informal: includes participation
    - Teaching Lecture: lots of back and forth
  - E-Learning
  - Guided Discussion: HCCSRR - draw out knowledge, skillful use of questions
    - Has specific purpose
    - Clear in meaning
    - Centers on one idea
    - Stimulates thought
    - Requires definite answer
    - Relates to info previously covered
  - Computer Assisted Learning: PC based – helps students go at their own pace and locate weak areas
  - Cooperative Learning - organizes learners into small groups to work together & maximize understanding
  - Demonstration/performance: EDSIE – AIH 5-21, 9-5
    - Explanation
    - Demonstration
    - Student Performance
    - Instructor Supervision
    - Evaluation
  - Drill and Practice: The Law of Exercise
    - Promotes learning through repetition
    - Every time practice occurs, learning continues
    - Performances based objectives - DCC - Description of skill, conditions, criteria
    - Decision based objectives - ADM

## Task D: Student Evaluation, Assessment, and Teaching

### PTCC MQ AO

#### Purpose of Assessment

##### PACH

- Provides feedback: results of test
- Allows students to know progress: keeping them informed
- Contributes to development of ADM: learning from the test
- Helps instructor see deficiencies: what needs work/what's missed

#### Traditional Assessments (writtens)

##### DR COVU – AIH 6-3

- Discriminate: compares students
- Reliable: yields same results
- Comprehensive: complete and structured
- Objective: not open ended, or biases
- Valid: measures what is being assessed
- Usable: understandable

#### Authentic and Oral Assessment

- Authentic: checkride
- Oral: oral portion

#### Characteristics of an Effective Assessment

##### FAST COCO – AIH 6-2

- Flexible: allows for variables/context
- Acceptable: student accepts instructor
- Specific: not broad
- Thoughtful: be nice about it
- Comprehensive: complete
- Objective: leaving out your ego
- Constructive: beneficial
- Organized

#### Characteristics of Effective Questions

##### ABC AP – AIH 6-11

- Apply to the subject of instruction
- Brief and concise
- Center on one idea
- Adapted to student ability
- Present a challenge

#### Methods of Critique

##### SWISSI – AIH 6-10

- Student Led: instructor asks student to lead critique
- Written: assessment written down
- Instructor/student: instructor leads with class
- Small group: class is divided into small groups
- Self: student reflects on own performance
- Individual Student to Student: another student leads

#### Questions to Avoid

##### POT BIT – AIH 6-11

**Puzzle:** too wordy  
**Oversize:** too many right answers  
**Toss up:** do this or that

**Bewilderment:** confusing info in question  
**Irrelevant:** questions unrelated to lesson  
**Trick:** battle of wits

### Task E: Elements of Effective Teaching in a Professional Environment

#### **AF PIPA**

- Aviation Instructor Responsibilities  
HEMPSS – AIH 8-1
  - Helping students learn: teaching
  - Emphasize the positive: enjoyment of flying, coolness
  - Minimize learner frustration
  - MACKBAG – AIH 8-1
    - Motivate the student
    - Approach student as individual
    - Critique constructively
    - Keep the student informed
  - Be consistent
  - Admit to errors
  - Give credit where credit is due
  - Provide adequate instruction: something they can learn from
  - Standards for performance: ACS/PTS
  - Safety
- Flight Instructor Responsibilities  
PEEP PASS - AIH 8-5
  - Pilot Supervision: doing things right
  - Evaluation of Student Ability: meet standards
  - Endorsements: only for instruction given
  - Practical Test Recommendation: IACRA, endorsement
  - Pilot Proficiency: they know their stuff
  - Additional Training: failing a checkride/moving to the next stage
  - See and Avoid: teaching and doing
  - Student pre-solo thoughts: interest/preparation/nervous
- Evaluation of Student Ability  
DKC - AIH 8-9
  - Demonstrated Ability: what can the student do
  - Keep them informed: how are they doing
  - Correction of errors
- Physiological Obstacles  
MUGS
  - Motion Sickness: open vents, drink water, look at fixed point
  - Unfamiliar Environment: aircraft is not natural to a human
  - G-Forces: steep turns, spins

Sick student can't learn: body is focused on illness and not learning

- Instructor Professionalism  
SAD PP – AIH 8-7
  - Sincerity: eye to eye level with student
  - Acceptance of student: including their faults and problems
  - Demeanor: approachable and friendly
  - Professional/personal appearance: look like you know what you're doing
  - Proper language: limit slang
- Professional Development  
GEIC
  - Government: FAA, PHAK, AFH
  - Educational: 141 school
  - Industry: AOPA, EAA
  - Commercial: king schools, sportys
- Aviation Exams
  - Instructor is responsible for student deficiencies
  - Practical test endorsements is a professional recommendation that this person has the knowledge and capability to pass
  - Endorsing a student before they're ready is a breach of faith
  - Instructor is required to maintain a record of all solo, knowledge, and practical test endorsements for 3 years
  - Pre-solo Test
  - Knowledge Test
  - Practical Test

### Task F: Techniques of Flight Instruction

#### **OD PSU WAID**

- Obstacles to Learning  
WIPAA – AIH 2-12
  - Worry
  - Impatience
  - Physical Discomfort, Illness/Fatigue, Dehydration
  - Anxiety
  - Apathy
  - Unfair treatment
- Demonstration/Performance Method  
EDSIE
  - Explain: what and why
  - Demonstrate: show student
  - Student performs: student does
  - Instructor supervises: correcting errors
  - Evaluate: work to ACS/PTS standards
- **Positive exchange of controls:** 3-way exchange between pilots or passengers – helps decide

- **Sterile cockpit:** PIC makes a conscious decision to keep the cockpit silent usually while in a critical phase of flight
- **Use of Distractions:** using proper distractions to see if the learner can maintain positive control of the aircraft while diverting their attention – make sure not to make it a hazardous situation

- Ways to Assess Pilot Ability:

RCWP

**Review:** recall what was covered in the lesson  
**Collaborative:** replay, reconstruct, reflect, redirect (FOI D)  
**Written**  
**Performance based:** ACS/PTS standards

- Assessment of Pilot Ability: essential component of the teaching process and determines how, what, and how well a learner is learning

Integrated Flight Instruction: teaching the learner how to cross reference inside and outside of the aircraft while doing maneuvers or in phases of flight; 90/10

- Decision Making Process:

DCIE

**Define the problem:** what is wrong  
**Choose a course of action:** what can we do  
**Implement the decision:** what we will do  
**Evaluate the outcome:** how did it work out

**Task F: Elements of Effective Teaching that include Risk Management and Accident Prevention**

**PRAM IP5**

- Principles of Risk Management:

AMAI – AIH 1-3

**Accept** no unnecessary risk  
**Make** risk decisions at the appropriate level  
**Accept** risk when benefits outweigh the costs  
**Integrate** risk management into planning at all levels

- Risk Management Process

IAM – AIH 1-4

**Identify** the hazard  
**Assess** the risk  
**Mitigate** the risk

- Assessing Risk

1. Likelihood
  - a. **Probable**
  - b. **Occasional**
  - c. **Remote**
  - d. **Improbable**
2. Severity
  - a. **Catastrophic**
  - b. **Critical**
  - c. **Marginal**

d. **Negligible**

- Mitigating Risk

TEAM

**Transfer**  
**Eliminate**  
**Accept**  
**Mitigate**

- IMSAFE

**Illness**  
**Medication**  
**Stress**  
**Alcohol**  
**Fatigue**  
**Emotions/Eating**

- PAVE

**Pilot** - IMSAFE  
**Aircraft**  
**enVironment**  
**External pressures**

- 5P Checklist

**Plan**  
**Plane**  
**Pilot**  
**Passengers**  
**Programming** - GPS, nav, approach, etc.

- 3 Ps

**Perceive** (Hazard) - PAVE  
**Process** (Level of Risk) - CARE  
**Perform** (Mitigate or Eliminate Risk)

-and-

**Evaluate** (Continuously)