TRAINING PRINCIPLES AND TECHNIQUES
GFA INSTRUCTOR / COACH DEVELOPMENT PROGRAM

This program comprises 9 units and all units must be completed for an Instructor/Coach to satisfy S2F standards.

STAGE 1: Principles and Methods of Instruction

- Unit 1: The Principles of learning
- Unit 2: Adult learning principles
- Unit 3: Learning styles
- Unit 4: Experiential Learning Model
- Unit 5: Success through questioning
- Unit 6: Student Progress
- Unit 7: In-Flight Instruction Techniques

Stage 2: Assessment

Units 1-7 require completion of an oral or written assessment

STAGE 3: CASA Units

UNIT 8: Human Factors

- CASA has four e-Learning Modules available for sport, recreational and general aviation flying. S2F Instructors and Coaches must complete the 4 CASA modules at
  https://www.casa.gov.au/education/landing-page/elearning-catalogue.

UNIT 9: Threat And Error Management

- Completion of a module on TEM based on CAAP5.59 - 1(0) Teaching and Assessing Single-Pilot Human Factors and Threat and Error Management (the TEM component - Section 13.1 and Unit C7). *(Yet to be developed)*

STAGE 4 FLIGHT ASSESSMENT

- The Final Flight Assessment will be scheduled as part of the FIRC
- STAGE 1 is available on the www.discoversoaring.com.au web site

The role of the gliding instructor/coach

- Gliding Instructors/coaches at clubs are typically non-professional.
- A good knowledge of basic training principles and techniques will improve outcomes

- Gliding instruction/coaching is a trainer led, skill-based process, most closely aligned to an apprenticeship. It comprises
  - ✓ Presentation of theory components to one or two students
  - ✓ Demonstration of skills
  - ✓ Gradual hand over of responsibility
  - ✓ Evaluation of progress
  - ✓ Remedial approaches to overcome gaps
  - ✓ Provision of regular constructive feedback
  - ✓ Evaluation of student competency.
  - ✓ Effective Questioning.

The role of the gliding instructor/coach

- the Glider Pilot Certificate (GPC) is structured and covered by the Instructor Handbook, Coaching Manual and AGK. There are suitable training resources available to the student that are easily used, and the Instructor/Coach is not required to develop or teach courses to large groups.

- The instructor is often required to instruct a student who has been instructed by another instructor with no clear understanding of the student's progress and needs. This introduces the need to evaluate prior progress quickly and then move forward with the training.

- Coaching exercises often reveal gaps in understanding and basic skills which need to be remedied

- Good systems and communication techniques improve the effectiveness of this approach.

GLIDER PILOT TRAINING RECORD

The primary focus of GFA training is achievement of the **Glider Pilot Certificate (GPC).** There are higher level programs for performance flying, aerobatics etc but the training delivery skills required are the same.

- ❖ Note 42 items for the GPC
- ❖ All items can be taught by a Level 1 or higher Instructor who has the necessary skills and experience
- ❖ Some items can be trained by a Silver Sporting Coach
- ❖ Be aware of the sequence and relationship between units
- ❖ Instructors Handbook part 2 will be updated and replaced by a Training Handbook, to cover all sequences
- ❖ Each element will be described in more detail, including Aim, Competency elements, Performance standards, Key messages.
- ❖ Flying Start courses cover required sequences through to Solo and the A certificate.
- ❖ Flying Further courses take the student pilots through to completion of the GPC

Description of Exercise
1. Lookout awareness
2. Ground handling, signals
3. Orientation, sailplane stability
4. Pre-take-off checks
5. Primary effects, further effects of bank
6. Aileron drag, rudder co-ordination
7. Sustained turns, all controls
8. Lookout procedures
9. Straight flight, various speeds, trim
10. Pre-landing checks
11. Slow flight, stalling
12. Launch and release
13. Radio use and endorsement
14. FLARM use
15. Take-off
16. Circuit joining and planning
17. Thermal centering techniques
18. Thermal entry
19. Soaring with other gliders
20. Approach and landing
21. Spinning & Spiral Dives
22. Crosswind take-off and landing
23. Launch emergencies
24. Flying with other gliders and aircraft
25. Rules of the air
26. Human Factors
27. Threat and Error Management
28. First solo
29. Side slipping
30. Steep turns
31. Thermal sources and selection
32. Outlanding
33. Flight preparation, glider, trailer and pilot
34. Soaring instruments and flight computers
35. Meteorology and flight planning
36. Navigation and airspace
37. Cruising, speed to fly and height bands
38. Demonstrated cross country capability
39. 'A', 'B', 'C' Certificates
40. DI Certificate
41. Independent operator Level 1
42. Glider Pilot Certificate (application to CFI)

SECTON A: PRINCIPLES OF LEARNING

- The principles of learning provide additional insight into what makes people learn most effectively.

- The principles have been discovered, tested, and used in practical situations.

- By knowing some principles on how learning takes place, we will be guided on how to teach.

"Knowles" identified six principles of adult learning

- Adults are internally motivated and self-directed
- Adults bring life experiences and prior knowledge to their learning
- Adults are goal oriented *[what am I meant to achieve?]*
- Adults are relevancy oriented *[how does this fits the overall plan]*
- Adults are practical *[Not just theory and ideas, what will actually happen?*
- Adult learners like to be respected [give encouragement and build confidence]

Six adult learning principles

1. Adults are internally motivated and self-directed

Adult learners resist learning when you impose information, ideas or actions on them.

Your role is to motivate and facilitate self-directed and responsible learning

Lead the student toward inquiry before supplying them with too many facts.

Provide *regular constructive and specific feedback* (both positive and negative),

Review goals and *acknowledge goal completion*

Acknowledge the preferred learning style of the student.

2. Adults bring life experiences and prior knowledge to their learning

Adults like to use their existing knowledge and experience and apply it to their new learning experiences.

Find out about your student – their interests and past experiences (personal, work and study related)

Assist them to draw on those experiences when problem-solving, reflecting and applying clinical reasoning processes.

Facilitate reflective learning opportunities to enable them to examine existing biases or habits and "move them toward a new understanding".

3. Adults are goal oriented

- Your role is to increase the student's **readiness** for learning and raise their awareness of the ***need*** for the knowledge or skill presented.

- *Provide meaningful learning experiences* and relate these to the overarching goal of flight

- *Provide real examples that are* relevant to the student.

- *Ask questions* that motivate reflection, inquiry and further research.

4. Adults are relevancy oriented

❖ Adult learners want to know the relevance of what they are learning to what they want to achieve.

❖ Ask the student to reflect on how new syllabus items will help them to meet their learning goals.

❖ Students really benefit from regular training, tying theory to practice
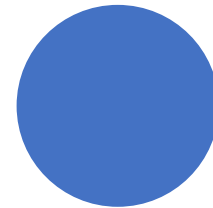
5. Adults are practical

- *Clearly explain your reasoning* when making decisions and choices for each syllabus item.

  Eg. *Adding ½ wind speed on circuit. Break off point for joining circuit*

- *Be explicit* about how the learning is useful and applicable to the objective.

  Eg. *Selecting an aiming point on the airfield is good preparation for selecting an aiming point in a paddock.*

- *Promote active participation* by allowing students to try things rather than observe.

  Eg. Demonstrate and then give them practice, with ample repetition in order to promote development of skill, confidence and competence.

6. Adult learners like to be respected

Respect can be demonstrated to your student by:

- *Taking interest*

- *Acknowledging the wealth of experience* that the student brings to the placement;

- *Regarding them as a colleague* who is equal in life experience

- *Encouraging expression* of ideas, reasoning and feedback at every opportunity.

- It is important to keep in mind that the student is still developing. However, you can facilitate the move from novice to a more technical skill set through greater integration of knowledge, information and experience.

LAWS OF LEARNING

By Thorndike (1932)

Students learn through their own activity; the instructor *helps* people to learn.

Through the process of **directed activity** students learn the skills and knowledge required to become good, safe pilots.

Learning is made easier when the following factors are used:

- **READINESS:** Ensure students are mentally, physically and emotionally ready to learn.
- **PRIMACY:** Present new knowledge or skills correctly the first time. **(Teach it right the first time.)**
- **SEQUENCE:** Present lessons in the logical sequence of known to unknown, simple to complex, easy to difficult and concrete to abstract.
- **EXERCISE:** Ensure students are engaged in meaningful activity.
- **INTENSITY:** Use dramatic, realistic or unexpected things, as they are long remembered.
- **EFFECT:** Ensure students gain a feeling of satisfaction from having taken part in a lesson.
- **RECENCY:** Summarise and practice the important points at the end of each lesson, as the last things learned and practiced will be remembered the longest.

LEARNING FACTORS

LAW OF PRIMACY

Things learned first create
a strong impression

What is taught First must
be RIGHT the FIRST TIME

LAW OF REPETITION

Things most often repeated are best remembered

Students do not learn a complex task in a single lesson

LAW OF EFFECT

Learning is strengthened when accompanied by a pleasant or satisfying feeling

Learning is weakened when associated with an unpleasant feeling.

Learning takes place properly when it results in satisfaction and provides pleasure.

So learning should be enjoyable, students want to be treated with respect.
An aggressive trainer makes learning hard work and students decide to do something else

LAW OF RECENCY

Things most recently learned

are best remembered

Laws of learning (Summary)

- Primacy

- Repetition

- Effect

- Recency

- **Teach it right the first time**

- **Get them to repeat good performance a number of times**

- **Make it enjoyable**

- **Review the important points**

LEARNING STYLES

Learning Styles

The term "learning styles" implies that every student learns differently.

Students' preferred learning styles have significant influence on their behaviour and learning

Students' preferred learning styles should be matched with appropriate learning strategies.

Everyone's different. It is important for trainers to understand the differences in their students' learning styles.

An individual's learning style refers to the preferential way in which the student absorbs, processes, comprehends and retains information.

Information that is accessed through students' preferred styles results in an increase in their levels of comprehension and motivation.

FOUR LEARNING STYLES

Most people have a preferred learning style. We can all learn with any of the styles, but learning is more effective if you use your preferred style

VISUAL
Visual learners prefer the use of pictures, photos, images, to learn and understand new information

AUDITORY
Auditory learners best learn through listening and discussion. Use repetition as a technique

READ & WRITE
Learn best through written words. Tend to take many notes and simplify by writing it out.

HANDS ON
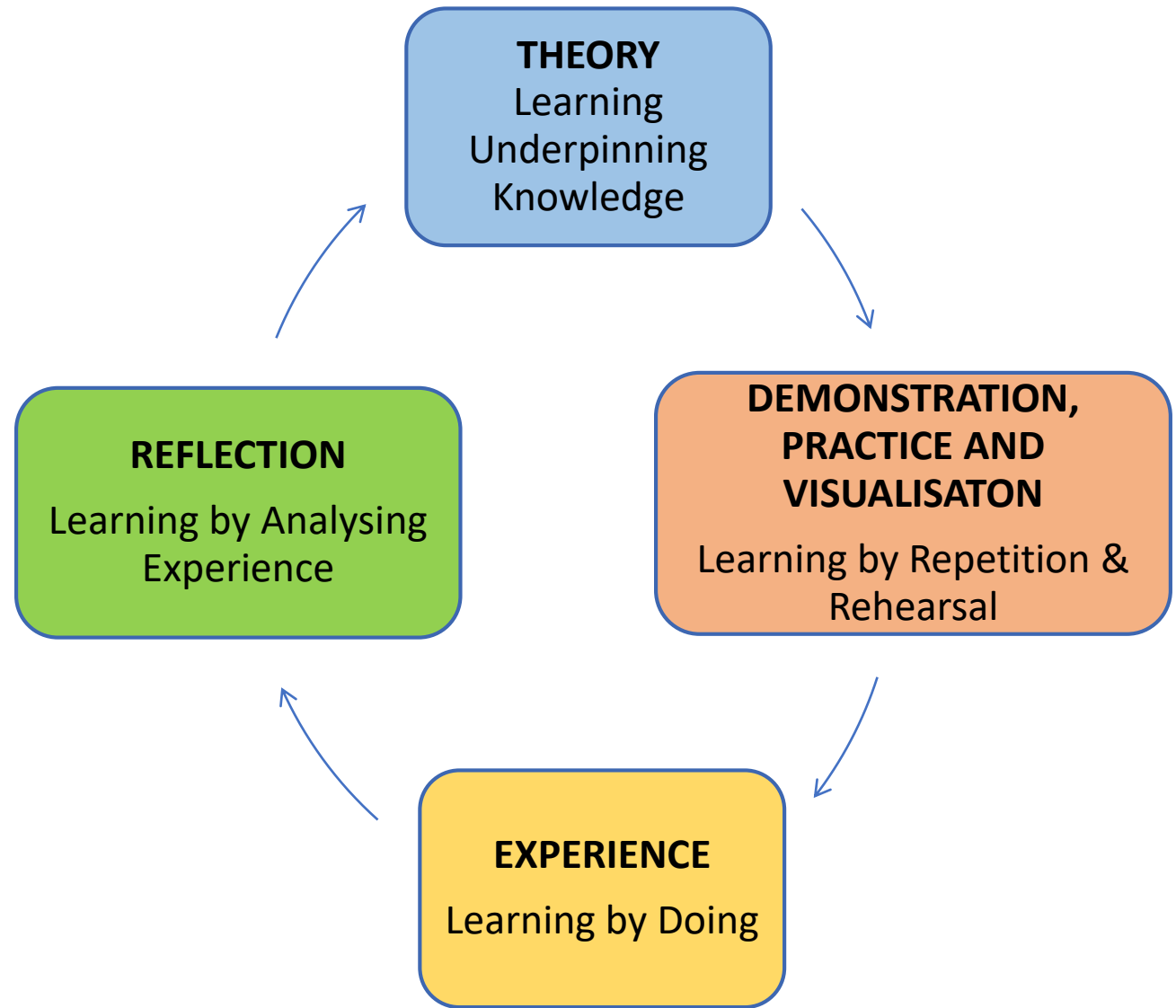**Learn by Doing through hands on experience and figuring it out.**

What is your preferred learning style?

Introducing thermal flying

Visual	Show or draw a diagram of a thermal, and how the lift varies and areas where gusts are expected
Auditory	Describe the thermal and what you experience as you enter. Explain the noise that the vario will make. Explain the surge they will feel.
Read & Write	Ask the student to read Reichman or Gee Dale's Soaring Engine. Suggest they make a list of the sensations they will feel as they enter the thermal.
Hands on	In flight, demonstrate the feeling as you enter the thermal, and then ask them to demonstrate back.

Experiential Learning Model (Robert Kolb)

THEORY
Learning Underpinning Knowledge

DEMONSTRATION, PRACTICE AND VISUALISATON
Learning by Repetition & Rehearsal

EXPERIENCE
Learning by Doing

REFLECTION
Learning by Analysing Experience

Instructors / Coaches guide Students through the Learning Cycle

Experiential Learning Model
(Robert Kolb)

Concepts (Theory)	Grasp of underpinning Concepts or Theory, leading to understanding and knowledge. "Aha, that's how it works!" Also leads to ability to analyse scenarios and anticipate effects and outcomes.
Demonstration, Practice and Visualisation	Involvement in Practice sessions and training sequences, improvement by repetition and guided application. Also applies to visualization of scenarios, 'what-if' analysis, anticipation of contingencies, flight planning.
Experience	"The School of Hard Knocks" "Learning by Doing" "Hands-On Learning" Student immersion in actual experience, observing cause and effect, actions and outcomes.
Reflection	Individual or group reflection on what has been Experienced. Reflection may be Guided by Instructor, or Unguided (which then depends on Student motivation). Note – Without Reflection, Students may be 'doomed to repeat mistakes of earlier Experience'

Experiential Learning Preferences

Theory

- "Technical" people may have strong Concepts and Theory preferences (engineers)

- Flight line pressures may limit opportunity for teaching Concepts.

- Instructors should guide Students on References and other resources and test knowledge Pre-Flight

- Clear Pre-Flight briefing of intended Practice exercises enhances learning

- Visualisation of Success and use of correct techniques is very important

Experiential Learning Preferences

Demonstration, Practice and Visualisation

- Having many opportunities to practice skills is key to learning

- Visualisation of Success and use of correct techniques is very important

- Be aware of gender, age, cultural and individual differences in relation to the pace of Practice and Visualisation to build confidence & competence

- Experience without Visualisation, without Reflection, leads to repetition of mistakes, reduced confidence, more frustration

Experiential Learning Preferences

Experience

- Many experiences - Pre-Flight Briefings, In-Flight Demonstration and Monitoring, Post-Flight Debriefings, Q&A, Ground School activities, Flight Preparation and Planning

- Hands-on practice is the most valuable

- Regular opportunities to practice and reviews reinforces the experience.

Experiential Learning Preferences

Reflection

- Extroverted types, or those with an Action/ Solution orientation may tend to rush or even skip Reflection. Instructors need to encourage effective reflection

- Unhurried Reflection is important to Introverts.

- Instructors should use Q&A to guide Reflection "What did you see when [X happened]?"
"What were you thinking when [X happened]?"
 "What other outcomes could you expect?"

Experiential Learning Preferences

- High Stress or Shouting or Aggression in flight will reduce learning effectiveness.

- Safety and Airmanship habits and behaviours must be ensured and this can be achieved without use of an aggressive approach

- Respectful interaction, unhurried use of the Experiential Learning Cycle will improve Student experience and Instructional effectiveness

Experiential Learning Model

Flying the Circuit

Concepts (Theory)	Review Australian Gliding Knowledge and Glider Pilot Training Record on flying the circuit. Read other reference books for more details.
Demonstration Practice and Visualisation	Instructor demonstrates a circuit, pointing out key areas – downwind, base, final, aiming point, airbrakes, direction, landing. Observation from the ground of other people doing circuits
Experience	Student flies the downwind and base legs with guidance from the Instructor. Maintains nose attitude, fly straight, coordinated turns when advised to turn.
Reflection	Instructor asks student to explain what they just did. Points out key issues of controlling nose attitude, flying straight. Student explains what was difficult. On questioning, explains why they have to control nose attitude. Asked to identify the aiming point on the next flight.

The teach-back training method

Used by trainers to confirm whether the student understands what is being taught. If the student understands, they are able to "teach-back" the information accurately.

- Instructor/Coach Explains what they need to know and do

- Instructor/Coach Demonstrates what they need to know and do

- Let them try

- Once they have made some progress, ask them to explain and demonstrate back to you what they know and do

1. Student Progress

Not all students progress at the same rate, but there are some common trends

STUDENT PROGRESS

Students are initially buoyed by a feeling of progress – it feels easy.

Then they start to realise that they are not doing it correctly – they think they are going backwards.

When you persevere, they start to get it correct and become competent.

After a lot of practice it becomes the natural thing to do.

STUDENT PROGRESS

RATES OF LEARNING

Not all students progress at the same rate – many factors impact on this.

Individual Students may progress rapidly for a period, and then suddenly progress more slowly, or even regress for a time.

It is your responsibility to detect these changes as soon as possible and to try to eliminate their causes by redirecting your instruction

ADVANCES AND PLATEAUS

Learning proceeds rapidly at first when a new task is introduced then slows as a reasonable degree of proficiency is achieved. (see Figure 3 on the next slide).

As students bring together other aspects of training, their progress tends to resume its upward climb at a slower but fairly constant rate.

STUDENT PROGRESS

The relatively level portion of the learning curve is termed a **Plateau**.
It may represent a period of training during which

- The student is perfecting the application of the new skill.

- The student has failed to master one basic element of the operation.

You can accelerate improvement by careful fault analysis and by concentrating instruction on that one phase of the operation concerned.

Reversals sometimes occur, during which a student's performance becomes worse with continued practice.

- Generally such reversals are due to a faulty habit pattern involving one of the basic elements of the maneuver or operation involved.

- This faulty habit causes your student to practice an erroneous performance repeatedly, until correction becomes very difficult.

- You must not accept such errors and misunderstandings as normal plateaus in the learning process. They must be corrected before progress can resume.

Typical Learning Curve

Plateau

% Correct Performances

55

50

45

40

0

0 1 2 3 4 5

Periods

Figure 3
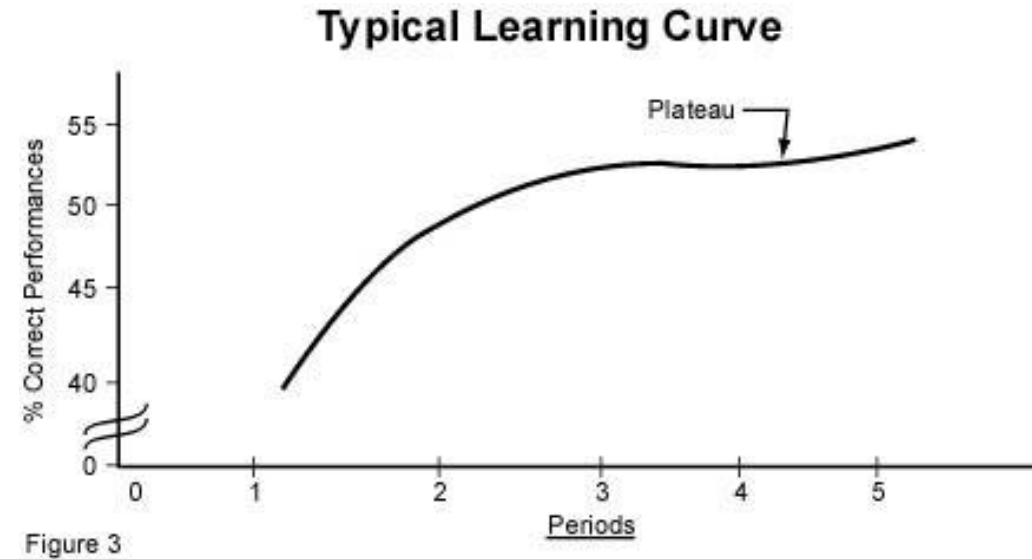
Rate of Progress

It is important that a student masters earlier sequences before proceeding to later sequences. Rushing a student so that solo is achieved in 30 flights (or 20, or 10) does not add value, and may limit their development post solo.

Review the GPC syllabus.

❖ Which sequences should the student (fully) develop prior to doing sequence 12 – Launch and Release?

❖ Which sequences should the student (fully) develop prior to doing sequence 23 – Launch emergencies?

❖ Which sequences can be introduced out of sequence? (ie earlier or later?)

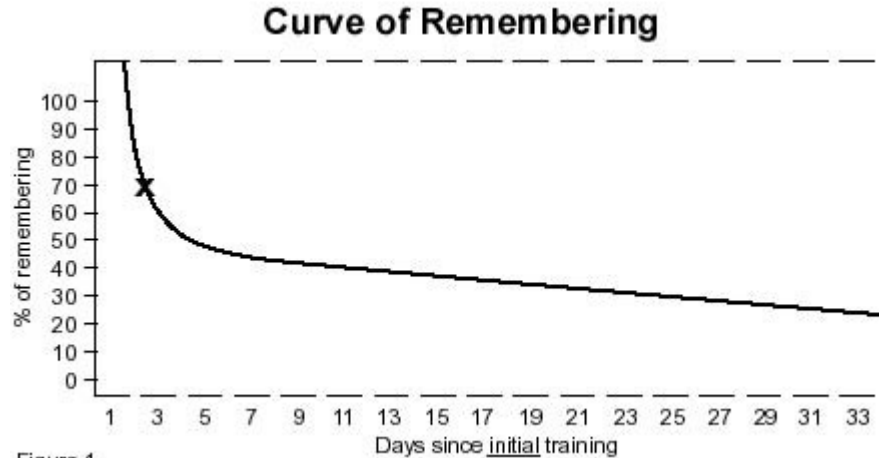| Description of Exercise |
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Managing training progress

- You don't do the student any favours by rushing through the syllabus.
- Progress that is too rapid generally results in a major reversal of progress a little later when higher skill activities suffer from gaps in the training.
- Be aware of the sequence and relationship between units. Eg, student should have some level of skill with turns, lookout, trim prior to starting on aerotow.
- Identify the next unit to teach, but also previous units to be reinforced and evaluated.
- Coaches should identify gaps or weaknesses in previous units

INDIVIDUAL DIFFERENCES

You must be aware of the differences in aptitude, personality, and emotions among your students and finding the correct approach for each student is essential.

- **NERVOUS OR UNDERCONFIDENT**. Instruction may be too rapid and material may not be absorbed. Repeating the fundamentals and ensuring mastery will often alleviate this condition. Praise whenever possible. Avoid harsh rebukes. Show Patience

- **OVERCONFIDENT**. Set more difficult tasks that require greater accuracy. More criticism of imperfections is advisable. If ability is lacking, counselling may be required.

- **FORGETFUL OF INSTRUCTION**. Students may require a great deal of patience and more review than the average student. Extra time spent in briefing and debriefing and more study on the student's part should be rewarding for all concerned.

- **INCONSISTENT**. When a student shows large fluctuations in proficiency the instructor must look closely at the teaching activities. A change in approach or even a change in instructors may be called for.

- **SLOW STARTERS**. Slow starters are students who find difficulty doing more than one thing at a time. Again, patience is mandatory and give encouragement.

- **FAST STARTERS**. Fast starters are usually students with previous exposure to flight training who quickly grasp the initial air exercises. You should not omit anything from the briefings. Watch for signs of weakness when new work is introduced.

- **IMMATURE**. You must not be too harsh with students who appear immature. Your attitude is of prime importance, encourage and help these students whenever possible.

- **AIRSICKNESS**. Some students may suffer from airsickness induced by motion, negative G, apprehension, claustrophobia, tension or excitement. When signs of airsickness show up, try letting the student fly straight and level, stopping instruction, inducing relaxation, making conversation about something else.

How well do students remember?

Figure 1

- To maintain at least a 70% level, a review should be conducted within **2 days**.
- 7 days after the material is reviewed the student is back down to the 70% level.
- After a second review at 7 days the student will be above 70% retention for approx 28 days.
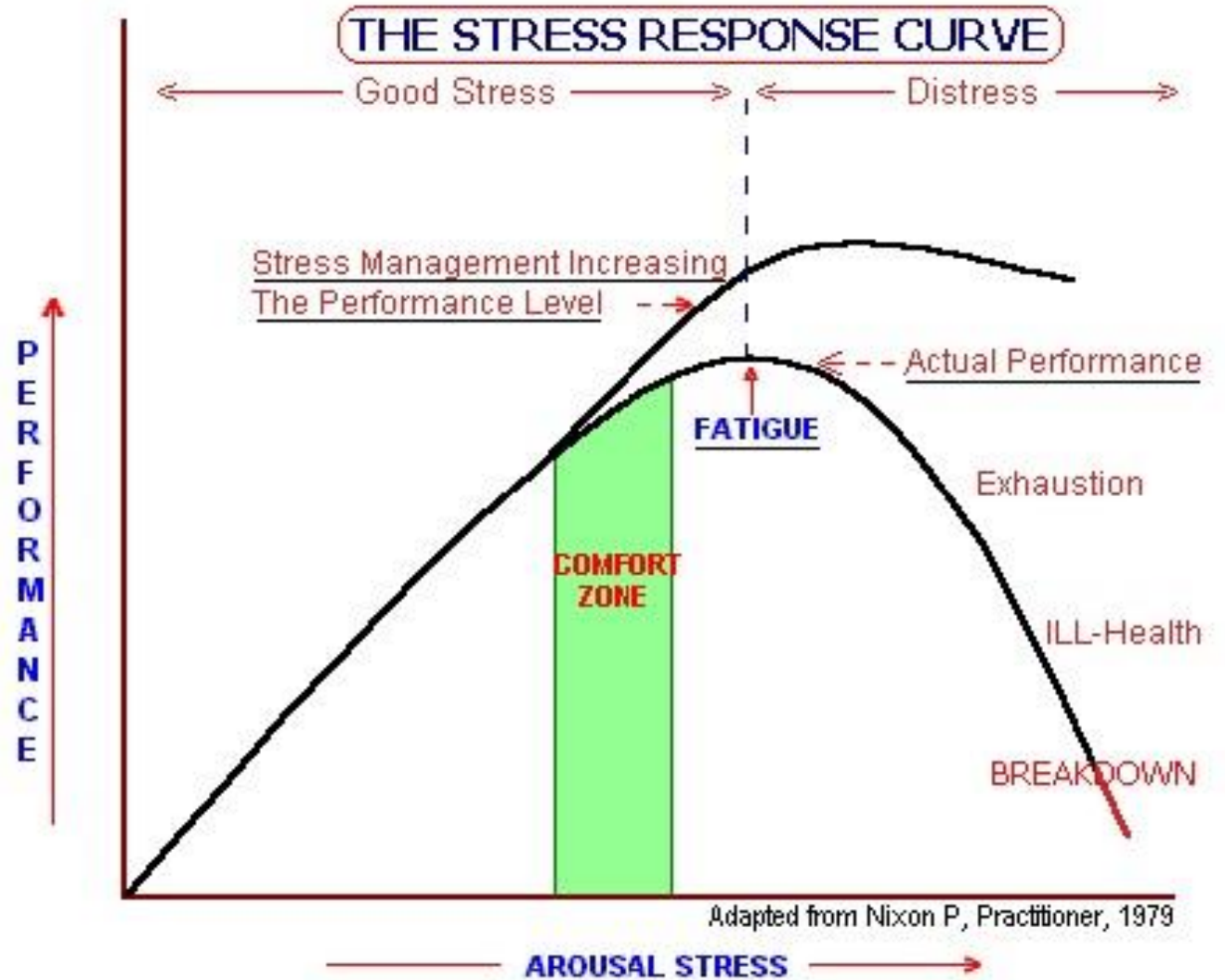
- The curve is very steep initially
- Within 2 days students will remember less than 70% of what they learned.
- At the end of the month, <u>without reviews</u>, students will remember only approx 40%

Figure 2
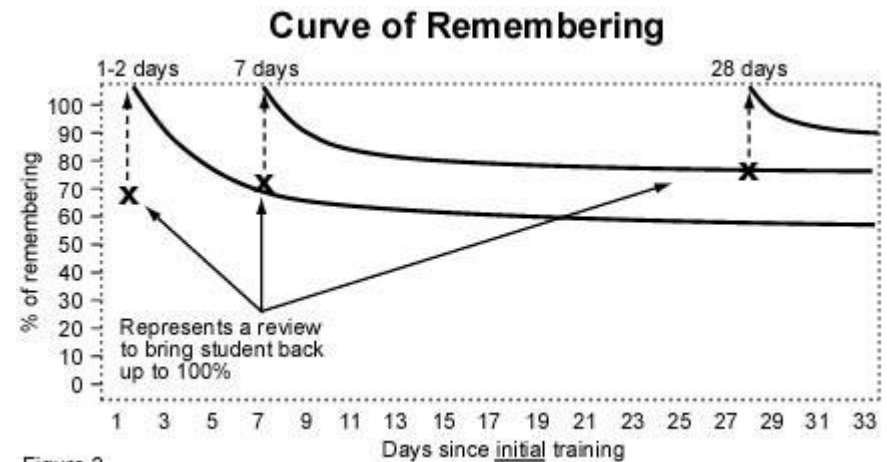
The Stress Response Curve

- As the level of stress increases, the performance level also increases, to the point of eustress, or healthy tension.

- The Comfort Zone indicates the range of stress levels that we can easily manage and facilitates good performance levels.

- Learning of new things typically takes the student outside of their comfort zone, and the Instructors role is to ensure that other factors are controlled to limit the stress.

- Success results in an expansion of the comfort zone which then increases overall performance.

- If there is very little stress or arousal, then performance is very low.

- Beyond the point of fatigue, stress begins to be perceived as overwhelming or excessive, and performance levels starts to decline.

- The ultimate end of overwhelming stress, called burnout, can be exhaustion, ill-health or breakdown.

THE STRESS RESPONSE CURVE

← Good Stress → ← Distress →

PERFORMANCE

Stress Management Increasing
The Performance Level

Actual Performance

FATIGUE

Exhaustion

COMFORT ZONE

ILL-Health

BREAKDOWN

Adapted from Nixon P, Practitioner, 1979

AROUSAL STRESS →

QUESTIONING

PURPOSE OF QUESTIONS

1. To PROMOTE MENTAL ACTIVITY.

The surest way for students to remember is to work out or recall the required details for themselves. You can use an oral question to make your students think and reason out the fact.

2. To AROUSE AND MAINTAIN STUDENT INTEREST.

Merely making a statement will often result in a 'so what' attitude, but asking questions makes students feel they are participating and contributing. Remember: Telling is NOT teaching.

3. To GUIDE THOUGHT.

By using questions you can lead students to think through to a logical solution. Questions can direct students' thinking through a definite sequence or to particular objectives.

4. To EVALUATE LEARNING.

Questions may be used after each stage of a lesson to ensure understanding before you proceed to the next stage. Such questions confirm that students have attained the objectives for that particular lesson.

Improving Instructional Effectiveness — Good Questions

1. Use **Open Questions** to assist Student in Reflection of Experience
   "What happened to the nose attitude when you rolled into the steep turn?"
   "Why?"
   "How might using trim assist you?"

2. Use **Hypothetical Questions** to assist Student in Visualisation of Scenarios.
   "Next time, IF you use more back trim, THEN what will that do to elevator stick loads?"
   "So, IF you roll straight and level with back trim, THEN what should you do?"

3. Use **Reflective Questions**, the Student's own words, to build understanding and reinforce that your are listening.
   "So, you say your hands are tired: How tight is your grip?"

4. Use **Closed Questions** for fact checking and directing attention.
   "Do you feel the increased back-pressure on the elevator?"

QUESTION TYPES

1. **CLOSED QUESTIONS (CQ).** Questions with a Yes / No answer.
   Australians and solution-oriented people use these frequently.
   "Do you see the nose dropping in the turn?"

2. **OPEN QUESTIONS (OQ).** Questions that open with: What? Why? How? When? Where? Who? Which?
   Open questions solicit more information than Closed Qs, cement understanding.
   "What happened to the nose attitude when you rolled into the turn? Why?"

3. **REFLECTIVE QUESTION (RQ).** Questions that reflect or paraphrase *what the other party said, reinforces your understanding of them.*
   "So, you felt more back pressure on the elevator as bank increased?"

4. **HYPOTHETICAL QUESTION (HQ).** Questions that test a scenario or option, with an IF-THEN structure. *A type of Closed Question where you want to affirm understanding of a scenario.*
   "So, <u>IF</u> you were to use back trim in a turn, <u>THEN</u> what would that achieve?"

NOTE: Australians love to cascade Qs together, convert Open Qs to Closed Qs.
"What happened when you banked steeper? Did you see the nose attitude drop more?"

NOTE: Use the power of the pause! Give the student time to process the Question and respond! Don't always fill the silence!

QUALITIES OF GOOD QUESTIONS

QUESTIONS SHOULD BE

- EASILY UNDERSTOOD. Simple straightforward language; Brief, yet complete enough that students have no doubt as to the meaning of the question.

- COMPOSED OF COMMON WORDS. If students do not know the meaning of the words they will not be able to answer the question. Always keep your vocabulary within the grasp of your student.

- THOUGHT-PROVOKING. Questions should not be so easy that the answer is obvious to all students.

- ABOUT THE MAJOR TEACHING POINTS OF THE LESSON. Questions must be built around and emphasise the main teaching points of the lessons.

DELIVERY

- ASK THE QUESTION. You should state the question, applying the qualities of a good question.

- PAUSE. After asking the question, allow time for the students to think it over and formulate an answer. Introverted students take a lot longer to answer. Be patient.

- LISTEN TO THE ANSWER. Often an instructor will immediately begin to think about phrasing the next question and will not be listening to the answer; An incorrect answer could lead to confusion.

- CONFIRM THE CORRECT RESPONSE. Student answers must be evaluated carefully so as to leave no doubt as to what is the correct answer.

4. IN-FLIGHT INSTRUCTION

Putting theory into practice

FLIGHT SAFETY
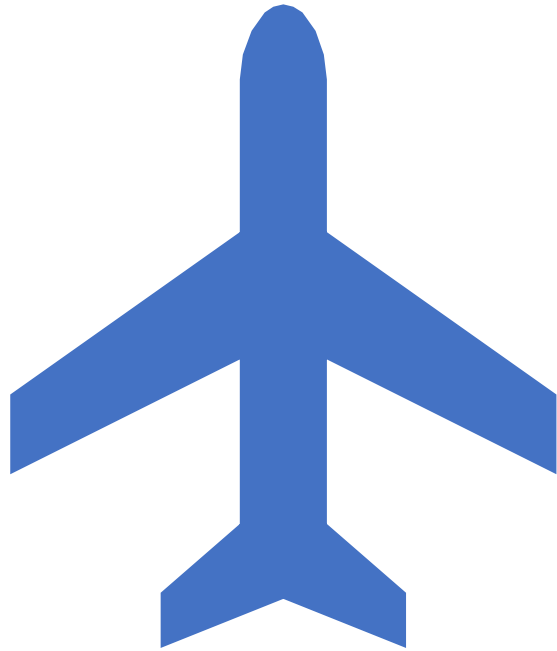
- Flight safety is an important aspect of flight training.

- You must be aware of the need for correct safety practices. You are in a position to reduce incorrect, unsafe and illegal practices.

- To be successful, a flight safety program requires the correct attitude, proper supervision, rigid enforcement, and proper training. Your student learns by example: you must set this example.

- An experienced instructor is an effective supporter of the principles of good airmanship and flight discipline. As you gain experience, learn to recognise unsafe practices and do something to correct the situation.

- Practice flight safety by:
  - being alert to unsafe practices and taking the appropriate action
  - following up when you see an unsafe practice by informing the people involved that they have been seen
  - promoting the principles of effective flight safety to students and other aircrew and groundcrew.

- Flight safety consciousness by all personnel must become the fashion. Unsafe procedures must be watched for, identified, and eliminated by firm and consistent action. Throughout your instruction, stress the importance of proper lookout, safe speed near the ground and proper coordination.

PRE-FLIGHT BRIEFING

- This is essentially a practical briefing on the planned air exercise, avoiding theory but must cover three important aspects:

    1. What are we going to do?
    2. How are we going to do it?
    3. Safety considerations.

- It should precede all flights, whether or not there is a new exercise to be covered. It is also particularly important with early solo flights.

- Points that should be covered irrespective of whether it is a dual or solo flight include:
  - Meteorological and aerodrome conditions.
  - The glider to be used and relevant information, including W&B
  - Where the exercises will be conducted.
  - The sequence of exercises to be covered
  - How each sequence will be conducted.
  - What the student will see, feel and do.
  - Go/no-go criteria
  - Review of relevant airmanship points.

In flight instruction

The **Demonstration–Performance method** of instruction can be broken down into five basic procedures:

1. Explanation & Demonstration

2. Handover/Takeover

3. Student performance & Instructor supervision

4. Evaluation

5. Feedback

Explanation & Demonstration

- Explanation and demonstration may be done at the same time, or separately.

- The following approach appears to work best for most instructors: **Consider teaching spins.**

- On the ground, give a full detailed explanation of a spin, using visual aids to assist student learning. Explain that this is a standard procedure and safe.

- In flight, explain what will happen and the key things to observe. Ask the student questions about what you are doing or should do. This gives them an opportunity to prove that they know the procedure, although they have not yet flown it.

- After completing the demonstration/practice clear up any misunderstandings the students may have and ask questions.

Handover / Takeover

There should never be any doubt as to who has control of the aircraft. The procedure for giving and taking control is:

- When you, as pilot-in-command, wish to give control to your student, say clearly 'Handing over'. Teach your student to take control only when ready and to always say 'Taking over'. You do not relinquish control until you hear this phrase.

- When you want to take control, say 'Taking over' and then take control, ensuring that your student says 'Handing over' when relinquishing control.

- As pilot-in-command, you have the final authority. Your request to give or take control should not be questioned but acted on as quickly as possible by your students.

- Some training sequences may require the Student to follow the Instructor on controls prior to transfer of full control of student. In such circumstances the Instructor should say "My Aircraft / Taking Over – Follow Me Through"

- When the student has control, you must not 'ride' the controls. Your student may feel that you are taking control, and this could lead to a dangerous situation. Additionally, you may rob your student of the feeling of accomplishing the maneuver independently. This procedure must be adhered to at all times.

Student performance & Instructor supervision

- Student performance and instructor supervision are always carried out concurrently during the initial stages of training. A student should not be allowed to make a major error at this time. Your supervision must be close enough to detect the start of an error, and you must correct the student at that point.

- The student should be allowed to perform the task in small segments, with you providing close supervision.

- Using the teaching of a circuit, consider the following suggestion of how to divide the task into segments.

- On the student's first attempt following an initial demonstration by the instructor. You, the instructor:
  - place the glider in the circuit joining area at a suitable height
  - perform all in-flight checks, including look-out.
  - student flies the glider and concentrates on following the pattern with appropriate judgement.
  - if the student makes a major error, you should give clear direction or take control and place the glider in the correct position, then give the student control and continue the approach.
  - try to ensure that the student makes a suitable circuit, even if you have to help all the way through.

- On subsequent attempts, depending on the degree of success of the previous attempt, add more items for the student to carry out.

- Continue the process until you feel the student can fly the complete maneuver alone.

Evaluation & feedback

- The evaluation portion of the demonstration–performance method is where students get an opportunity to prove that they can do the maneuver without assistance.

- For the circuit explain to your student that they will need to arrive at the circuit joining area appropriately and carry out the entire procedure, including all checks and look-out.

- While the student is performing this maneuver you must refrain from making any comments. Offer no assistance whatsoever*—not even grunts or head nods.

- You must, however, observe the entire maneuver very carefully, so that you can analyse any errors that the student may make and debrief accordingly.

   NOTE: You must interrupt the student's performance if safety is a factor.

- Provide *candid and constructive feedback* to the student following your evaluation.

- The feedback should include positive statements about what aspects were demonstrated to the required standard, and clearly explain any errors that were observed, clearly stating what they did incorrectly. Some errors may be overcome with more practice, but emphasise any errors that will stop further progress.

- Success or failure during the evaluation stage of the lesson will determine whether you carry on with the next exercise or repeat the lesson.

IN-FLIGHT INSTRUCTION (Key Points)

IN-FLIGHT TEACHING

- For most new exercises you should first review the main points of the maneuver and then give a demonstration.

- The review must be short. Include such items as airspeeds, control inputs, lookout etc. Usually you can obtain this information from your student.

- In the case of a complex maneuver, after demonstrating a small portion of the maneuver, giving a brief explanation and have your student attempt this. If you observe a major error, take control immediately and explain what was done incorrectly, then demonstrate how to correct the error. Allow practice of that small portion before proceeding to the next portion.

- Continue the process until your student has completed the entire maneuver. Then, allow continued practice, slowly withdrawing your guidance and assistance.

- As your student gains proficiency, you may look for minor errors and correct them in the same manner. Remember, though, that learning to fly well takes time and you should concentrate on the major points first. Also, remember to praise for good performance.

- Help your student to fully understand the home study for the next exercise and provide a positive mental picture about what will be taking place during the next flight.

Rules for using the demonstration-performance method

- Give a demonstration of the full exercise

- Give a step-by-step explanation of the required task. Use reasons, examples and comparisons to make the explanation clear.

- Have students imitate a step of the skill while you provide close supervision. For example, have students practice the entry to a steep turn until it is correctly done, before you go on to the next step.

- Continue until the student has imitated each step. Provide student practice, with assistance as necessary.

- Ensure that the amount of time allotted for student practice equals or exceeds the amount of time for the demonstration, explanation, and student performance under very close supervision. Students should take as much time to practice as you take to teach.

- Overall rule: while you are demonstrating and explaining, your student listens and observes; while your student is performing, you listen and observe. NEVER ask the student to fly/perform while you are explaining.

- Complete the exercise with an evaluation (final check-up) in which your student has the opportunity to prove what they can do.

- NEVER just explain and demonstrate a skill or procedure for students. ALWAYS have students perform the skill to ensure that the skill or procedure is done properly.

- STICK WITH THEM UNTIL THE SKILL IS DONE CORRECTLY. For example, during the pre-flight briefing, your student is unable to correctly state the rope break emergency actions. Explaining how to do this drill, even with a demonstration, is no guarantee of student success.

Suggestions

Unless you are testing to see what students have learned, avoid questions that are prefixed by the word 'what'.

Give students the facts, figures and necessary knowledge, then ask 'how' and 'why' questions to develop their understanding.

Once you have told students a fact, avoid repeating yourself. Instead, have them relate the facts back to you.

Give students challenging problems that fit the level of learning, and provide only enough assistance to keep them on track.

When students are able to solve the problems alone, they have demonstrated adequate knowledge and ability.

Test students knowledge and abilities frequently. This reinforces learning and builds confidence.

Before testing you must be reasonably certain that students can answer the questions or perform the skills;

Testing will also identify areas in which students have weaknesses, thus allowing you to re-teach these subjects to the required standard.

Suggestions (continued)

Show enthusiasm and sincerity for the subject you are teaching.

Attempt to employ a wide range of speech variation in rate, volume and pitch to keep students attentive.

When a student encounters difficulty in mastering an objective, Break down the exercise to allow some degree of success.

When performance is deteriorating, It is better to quit at that point and go back to something the student can do well.

Avoid ridicule or sarcasm. You may feel that it might take the place of humour; however, students seldom have the same feeling.

When a student does something correctly provide a reward in the form of sincere, honest praise.

Visualisation of success is powerful. Have the student visualise how correct techniques can be applied in the next flight.

Suggestions (continued)

Plan for a pre-flight briefing immediately before the air exercise, and review the main points by questioning.

After each sequence within a flight or ground lesson, ask questions on the material or summarise the 'need to know' material.

Summarise and practice the important points at the end of each lesson, as things learned and practiced last will be remembered longest. RECENCY

At intervals throughout the training program, conduct review sessions in which no new material is taught, but reinforcement is obtained.

Attempt to finish flights with a practice of the most important parts. Solo and Dual. Remember, students practice knowledge by answering questions and they practice skills by doing.

Conduct a test as the final part of your lesson.

The need for review — and possibly retraining

- Confirm that the required level has been attained before proceeding with new material.
- Conduct a review and clear up any misunderstandings by briefly re-teaching the major points.
- Students start to forget the moment they leave the instructional environment.
- The greatest rate of forgetting occurs during the first 24 to 48 hours after the material has been learned.

FAULT ANALYSIS

- The sole purpose of fault analysis is to improve future student performance.

- The ability to debrief effectively is a measure of instructor capability

- A valid critique contains three essential elements:

    1. Strengths;

    2. Weaknesses; and

    3. Specific suggestions for improvement.

- Strengths are analysed to give positive feedback and provide recognition of good performance. This will often do more for the student than any number of remedial suggestions on your part.

- The necessity of analysing weaknesses is readily apparent.

- Specific suggestions for improvement. If you are unable to suggest a remedy for overcoming the weakness, your student does not have that weakness.

- You should limit your critique to the identification of a maximum of three weaknesses with suggested remedies. During actual flight instruction you should attempt to pinpoint a single major weakness before considering the next.

- NOTE: One way to think of a major weakness is: 'What item, if corrected now, would result in the correction of the greatest number of other faults?'. All weaknesses will be dealt with, but in order: the most important ones first

POST-FLIGHT DEBRIEFING

- The post-flight debriefing is a review with the student of each exercise undertaken during the flight. The debriefing should include strengths and weaknesses and suggestions to improve performance. An outline of the next training session should be given, along with study assignments.

- This should follow all flights, dual and solo. Points should include:
  - the student's own assessment of the flight and performance
  - your assessment of the student's performance. This should include both the strong and weak points, and advice on how to correct any errors
  - answering any questions the student may have
  - assigning study subjects where appropriate

THE STUDENT–INSTRUCTOR INTERACTION

The successful performance of your job instructing role is that your relationship with students accomplishes three things.

- It must maintain discipline and respect for you, the instructor.
- Students must obey your directions, especially in a glider.
- They must follow your example and strive to carry out your instructions and suggestions for improvement.

❖ An obvious willingness to help students with problems will improve respect, loyalty, and cooperation.

❖ You must be fair, firm and friendly if students are to respect your authority,.

❖ Be decisive. Weigh all the factors and then act with conviction.

❖ Correct mistakes in a straightforward manner, never using sarcasm.

❖ Acknowledge your own mistakes.

❖ When you do not know the answer, say so, find the answer, and tell the students later.

❖ Be enthusiastic. It is contagious.

❖ Encourage student initiative, self-reliance, ideas and suggestions, but explain the boundaries that they must not overstep.

❖ Be impartial and fair: never show favouritism.

❖ If you doubt a student's progress or motivation, arrange an independent check. Consider modifying your teaching approach or even change instructors.

❖ Plan all solo lessons. Give your students thorough pre-flight and post-flight briefings.

❖ Maintain a professional image.

Improving Instructional Effectiveness – Individual differences

1. Many people who are action and solution oriented, biased towards doing, may be impatient with reflection or preparation.

2. Others resent being hurried through reflection, preparation and practice, they need unhurried treatment to build confidence and competence.

3. Digitally savvy, information-rich people often prefer to make connections between concepts, ideas and experience. They may be very quick to understand. Avoid pedantry and plodding. Encourage them to reflect what they have seen and heard in their own words.

4. Cultural and gender reactions to criticisms may vary widely. Some may react badly to "You did this wrong" feedback, and instead need "Try this next time" feedback.

5. Generalisations about Gender, Age and Culture may be misleading – there are always exceptions.

6. Building and ensuring Respect is vital. Trust is lost when respect is eroded. No trust, No respect, No learning.

Improving Instructional Effectiveness –
Individual differences

7. Listen! Ranting and interruptions are counterproductive. Use silence more. Let students respond and then explain your understanding of what they have said.

8. Blokey culture can offend across gender, age and cultural differences. Instructors and coaches have to set the tone! This is not being PC – this is being respectful.

9. Useful lessons may come from your instructional peers. Why do some students and groups of people seek out particular instructors? What do those instructors do?

10. Respect, listening, politeness and good humour cost nothing and achieve much in improving instructional effectiveness and club culture.

11. People are not clones! Training methods and patter used when you were a Student may not be appropriate for all Students. You have to find techniques that work for each of your students

12. Sexist language, sexist metaphors, risqué jokes are not acceptable, build barriers. Ditto denigration of youth and lack of experience.

QUESTIONS?

ASSESSMENT

Checklist of good instruction

1. Explain to the student specifically what is required of them during the lesson and at the end of the lesson (the 'what' of the introduction).

2. Identify the main teaching points for the student through effective use of visual aids.

3. Explain the purpose of the lesson and stress the advantages of the new knowledge or skill (the 'why' of the introduction)

4. Relate the lesson to the student's past and/or future experiences (the 'where' of the introduction).

5. Confirm that students are at the required level before having them learn new material.

6. Present the new material in stages and provide a link or bridge between stages.

7. Obtain student feedback throughout the lesson by asking questions, observing student performance, taking student questions.

8. Respond to feedback by answering questions, stopping incorrect actions, asking questions, correcting errors, explaining why the student's performance is incorrect, re-teaching (if necessary), praising students for good work.

9. Use speech variation in rate, volume and pitch.

10. Use correct questioning techniques and clearly worded explanations

Checklist of good instruction (cont'd)

11. Use a variety of training aids to appeal to as many senses as possible whenever these aids help to achieve the objective(s) of the lesson.

12. Provide sufficient meaningful practice of the main points of the lesson so that students confidently achieve the objective.

13. Identify and correct errors or mistakes made by the students at the time they occur, or as soon thereafter as practicable.

14. Deliver the lesson in a logical sequence.

15. Conduct periodic reviews of critical areas of the lesson.

16. Summarise the main points of each stage.

17. Evaluate level of student learning at the end of each stage.

18. Test students on the main points of the entire lesson towards the end of the lesson.

19. Provide a final summary that links all stages to the objective(s) of the lesson.

20. Re-motivate students by telling them how the new knowledge or skill will benefit them.