



INSTRUCTIONAL TECHNIQUE

STUDENT COURSE NOTES

Instructional Techniques

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Instructional Techniques

Introduction

Welcome to the Instructional Technique Course.

During this course you will be introduced to the basic rules of good Instructional Techniques. We will also be discussing some of the pitfalls which should be avoided.

The art of instructing cannot be learned simply by studying text books and listening to lectures. Above all it is a skill which can only be acquired through practice. During this course you will be given the opportunity to apply the instructional techniques covered in the various stages of the course in a series of practical exercises. The experience you gain during these exercises will depend on the amount of effort you put into the course.

Once you have completed this training course you will have a good technical understanding of the theory behind the art of Instruction, however you will only become a good instructor and improve the standard of instruction given to cadets if you try to take the theory back into the classroom each time you take a lesson.

Flt Lt Hincks
Training Officer
121 (Nuneaton) Squadron ATC

Course Objectives

- Define and implement the basic rules of good Instructional Techniques.
- Provide the students with the opportunity to practice within a safe environment.
- To 'Enable Instructors' to raise the standard of classroom instruction given to cadets.

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Section 1 – Role of the Instructor

Objectives

Explain the roles and responsibilities of an instructor.

Role of the Instructor

As an instructor, there are many roles that you may be called upon to fill. These roles will be determined by a mixture of student needs and instructional requirements. The most common roles of an instructor are:

Subject Matter Expert

It is a good idea to learn all you can about your subject. It is important to remember that the learners will assume you know all there is to know about the subject.

Counsellor

Because you are dealing with human beings there will be times when you may have to deal with situations of a more personal nature than training.

Leader / Motivator

Depending upon the time constraints you will be required to be flexible with your leadership style. A democratic approach generally achieves more positive results, but where time is a constraint you may need to be more autocratic to complete the training.

Manager

As an instructor you will have to manage things such as time, resources, students and tasks.

Human Being

Remember, instructors err on occasion. By not setting yourself up as the *answer-man* students will understand and forgive your mistakes.

Learner

Because things are continually changing, there will always be something that you, the instructor can learn. This learning will not only occur through your own research but you will find that you can also learn from the experiences of your students.

Facilitator

A facilitator assists students to become responsible for their own learning. In other words, the exercises you plan should lead the student to the key point through what they experience doing the exercise.

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Being a successful instructor will involve utilising all your personal attributes and training in order to provide the students with the required levels of knowledge, skills and attitudes the training is designed to impart.

Above all you are a facilitator, that is, you do all you can to assist your students to learn and perform.

The more roles that you can fill, as needed, the more successful you will be in assisting your students in the learning process.

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Section 2 - How we Learn

Objectives

Explain the basic principles of learning.

How we Learn

Definition

Learning is a relatively permanent change in behaviour as a result of experience.

The following is an explanation of the ten principles of adult learning:

Multiple-Sense Learning

Learning will be more effective if students use more than one of their senses. Use different strategies to enable students to do so. (See Section 8 - Visual Aids)

Recency

Things learnt last are first remembered. A very important point to consider when you are concluding your lesson.

Appropriateness

All information, training aids and materials must suit the students needs. Important, when you are considering what training aids to use and writing your lesson plan.

Motivation

The student must want to learn, be ready to learn and there must be some reason to learn. Motivate the students in the introduction to your lesson and throughout the lesson where necessary.

Primacy

Things learnt first are usually remembered best. Explain information correctly the first time.

Sequencing

By presenting information in a logical sequence you allow the student to continually build on their existing knowledge:

- Simple to complex,
- Known to unknown

2-Way Communication

The training process involves communication with the student - not at them. Questions from both you and the students will ensure that 2-way communication takes place.

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Feedback

Feedback shows you if students are understanding the lesson and shows them how they are performing. Questioning will provide feedback, however, ensure that you look for non-verbal signs.

Active Learning

Students will learn more if you actively involve them in the training process. When considering the strategies for your lesson ensure you look at exercises to involve the students.

Exercise

Things that are repeated are best remembered. Ensure that within your lesson plan you have strategies for checking information or providing exercises to reinforce information

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Section 3 - Methods of imparting knowledge

Objectives

Describe the structure and characteristics of methods of instruction.

Instructional Methods

Definition

An instructional method is the basic approach used by the instructor, for example, lecture, demonstration or guided discussion.

Methods

The following methods of instruction can be used by the instructor to achieve the training objectives:-

- Lecture,
- Guided discussion,
- Tutorial,
- Demonstration,
- Role play,
- Simulation,
- Individualised instruction.
- Structured Lesson

Choice of method

The instructor should select the method or methods of instruction most suitable for a particular topic. It is quite acceptable to select more than one method and combine them into a single period of instruction if the subject demands it. For example, an instructor could combine a Structured Lesson method to impart theory and follow it up with Demonstration in order to enforce understanding.

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LECTURE

A lecture is a verbal and visual presentation of information by an instructor with little or no response required from the students.

Characteristics

The major characteristics of the lecture method are:

- Straight talk or exposition by the instructor.
- No questions until the end of the lesson.
- No student participation during the lecture.
- Heavy reliance on frequent progressive summaries.
- Heavy reliance on training aids to support teaching.

Uses

The lecture method is used when:

- The audience is large,
- The time is restricted,
- There is a considerable amount of factual information.

Types of information

The lecture method should be used to provide information on:

- Rules
- Policies.
- When a briefing or general overview is required.

Advantages

The main advantages of the lecture method are:

- A large amount of information can be given,
- There is no limit to class size,
- The instructor is totally in control of sequence and content,
- Any area can be used providing hearing and visibility are sufficient.

Disadvantages

The major disadvantages of the lecture method are:

- One-way communication
- Inappropriate for teaching skills
- Impact on the learner is mainly aural
- Learner is encouraged to be passive

Instructor's responsibilities

The responsibilities of the instructor / presenter during a lecture is to:

- Continually check for non-verbal feedback.
- Use training aids of high visual quality.
- Vary voice quality (pitch and volume).
- Motivate students.

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GROUP DISCUSSION

Two or more people who come together to discuss a topic.

Experiences are shared, opinions expressed, alternatives discussed, and action is planned. Interaction between individual members or between similar groups may provide the catalyst for problem solving and for effective planning.

Uses

Group (or Guided) Discussions are used to:

- Identify, explore, and seek out solutions to problems - problem solving.
- Develop plans for action.
- Develop attitudes - where necessary, to change attitudes through an amicable examination of the evidence.
- Develop leadership skills.
- Supplement other methods of instruction.
- Encourage use of higher mental skills - analysis, evaluation.
- Provide feedback on students and previous instruction.

Advantages

The following are the main advantages of group discussion:

- Provides a stimulating instructional environment.
- Such a group pools experiences, abilities and knowledge in order to reach recognised objectives.
- Provides for the full participation of every member.
- Increased student participation increases learning and retention.
- Students are more likely to accept validity and importance of the content if they are involved.

Disadvantages

Following are the major disadvantages of group discussions:

- Can be time consuming, particularly if persons with strong convictions or widely different backgrounds are involved.
- Requires highly experienced staff.
- Only useful for small groups.
- More suited to mature or experienced students.

Instructor responsibilities

The responsibilities of the instructor during a group discussion are to:

- Ask questions, redirects answers, extracts information/opinions, avoids offering own opinions.
- Encourage student participation.
- Keep the discussion moving and on track.

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TUTORIAL

Tutoring (coaching) is usually defined as a method of instruction in which the instructor works directly with an individual student or small group of students. It may involve lecture, demonstration, theory, guided discussion or any combination of these.

Uses

Tutorials are used to:

- Teach highly complex skills and operations which involve dangers to men or to expensive equipment.
- Provide individualised remedial instruction.

Advantages

The following are the main advantages of the tutorial:

- Individual student needs can be diagnosed and instruction designed to meet those needs.
- Provides the highest degree of student participation and instructional effectiveness.
- Close supervision and control in hazardous situations limits the risk of injury.

Disadvantages

Following are the major disadvantages of the tutorial:

- Requires a complete mastery of subject matter.
- Expensive in time and manpower.
- Requires extensive preparation.

Instructors responsibilities

The responsibilities of the instructor are:

- Thorough preparation and planning of tutorials.
- Establishment and maintenance of communication

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DEMONSTRATION

The Demonstration method involves both giving information to students and showing them either how something ought to be done or what will occur as a result of an action. In teaching a motor skill this method is the link between explanation and practice. The Demonstration highlights the skill but does not challenge the student to perform the task.

Uses

Demonstrations are used to provide students with:

- Guidance to the skill or task.
- An overview of the skill to be acquired.
- A model to be imitated.

Advantages

The following are advantages of the demonstration:

- Promotes understanding of skills.
- Promotes visual interest for the students.
- Students are shown a step-by-step approach to the skill.
- Useful for all types of skills where the visual presentation of a procedure or activity will enhance learning.

Disadvantages

Following are disadvantages of the demonstration:

- The Instructor must provide a good 'model' for the students to follow.
- A demonstration is difficult for large class sizes due to possible visibility problems.
- Needs to be a simple process.

Instructor responsibilities

The following are the responsibilities of the instructor during a demonstration:

- Needs to be a Subject Matter Expert.
- Must accurately perform the demonstration.
- Must present demonstration in an accurate and structured manner using easily assimilated steps.
- Should focus attention on key points during demonstration and repeat key points where necessary.

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ROLE PLAY

A Role-Play, whilst similar to a simulation, doesn't use any props. Normally the only items required are a script, or an idea, and one or more participants. The situations that the participants act out are usually related to those that the players might be involved in.

Uses

The following are uses of role play:

- Good for developing attitudes.
- Students apply cognitive areas of knowledge to real life situations.
- Increases student involvement in the learning process.

Advantages

The following are the main advantages of the role play:

- Provides confidence for real-life situations.
- Efficient in changing attitudes and behaviours.
- Adaptable to most situations.
- Can be fun.

Disadvantages

Following are the main disadvantages of the role play:

- Time consuming and unpredictable.
- Feedback must be handled well.
- Threatening for some students.

Instructor responsibilities

The following are the instructor responsibilities during a role play:

- Plan and control conduct of the session.
- Conduct briefs and debriefs of the exercise.
- Ensure that session objectives are met.
- Ensure the involvement of all students (Players and observers).

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SIMULATION

A 'real life' situation, which must be resolved by acting out the roles of those concerned.

Uses

The following are uses of simulation:

- When learning involves decision-making, problem solving or judgment.
- To examine a problem in human relationship - for example, an interview with a *problem student*.
- To develop and practice new skills.
- When the real environment has uncontrollable variables, involves high risk or involves high cost.

Advantages

Some advantages of simulation are:

- Students learn and are assessed in realistic, but safe conditions.
- Faults/problems can be controlled.
- Inexpensive compared to learning by mistakes in the 'real' situation,
- A rapid task role change is possible.

Disadvantages

Some disadvantages of simulation are:

- Students can become used to the safe environment of simulation and react badly in the real environment.
- Requires experienced, active, well prepared instructors.
- Can be expensive to set up in terms of time, money and manpower.

Instructor responsibilities

The following are instructor responsibilities for simulation:

- Preparation must be thorough.
- Problems to be solved must be structured and managed.
- The situation must be closely aligned to the 'real' situation.

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INDIVIDUALISED LEARNING

Individualised learning incorporates a self instructional program from which a student can learn efficiently with little or no outside help. There are two types:

- *Self Paced learning* which permits students to proceed through course material at their own rate whilst demonstrating a required level of achievement in each unit before proceeding to the next (includes computer based training)
- *Self Directed learning* which involves the students' efforts to achieve specified objectives in as autonomous a manner as they are able, within a particular time.

Uses

Individualised learning can be used for:

- Provision of remedial instruction.
- Maintenance of levels of proficiency in infrequently practiced skills.
- Filling in gaps in instruction caused by late arrival.
- Acceleration of able students, thus permitting early completion of training.
- Consolidation of learning by review and practice of knowledge/skills.

Advantages

The following are some advantages of individualised learning:

- Self-pacing exposes students to subject matter at a rate which is appropriate for the individual.
- Students accept responsibility for their own learning.
- Active student involvement.

Disadvantages

Following are some disadvantages of individualised learning:

- Independent study requires well motivated students.
- Student may just be waste time.
- Difficult to assess level of retention without implementing tests..

Instructor responsibilities

The following are the instructor responsibilities during individualised learning:

- Facilitate and manage learning (providing assistance as required).
- Advise students of future study requirements.

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LESSON

The Lesson Method involves student participation and gives a good indication of whether the message is being received or not. It may indicate that some areas need to be revised.

The instructor should ask questions of the group often, making sure that they are relevant to the topic. The questions must be spread evenly around the group so that all the students are participating. If people are having trouble answering the questions the instructor must not give them the answer. The question can be rephrased or redirected.

Characteristics of the Lesson Method

The Lesson Method uses the technique of questions and answers to:

- Obtain feedback to guide students' thoughts,
- Encourage instructor/student Interaction,
- Check understanding, and
- Build up Key Points.

Uses of the Lesson Method

The Lesson Method is best used when:

- The instructor carefully plans and sequences the use of questions (use the student's opinions, common sense, or material they already know to arrive at a new concept);
- Time is available to establish the Key Points;
- Class size is not excessive (20 students);
- Establishing concepts and background information.

Advantages of the Lesson Method

The advantages of the Lesson Method are that it:

- Makes learning easier for students to accept answers if they solve the questions / problems themselves,
- Thoroughly teaches the concepts,
- Has a logical step approach,
- Provides instant feedback,
- Promotes active student participation.

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Instructor responsibilities

The instructor must:

- Ask questions to:
- Involve,
- Motivate,
- Test the students.
- Use training aids:
 - To emphasise, amplify and clarify,
 - To interactively build up ideas and solutions, and
 - For variety.
 - Amplify and positively reinforce students' responses, both verbally and visually.

Note

The lesson is usually the most suitable instructional method for Air Cadet Classroom activities. The techniques used by the instructor during a lesson will be covered in more detail within the following sections of this course material.

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Section 4 - Lesson Components

Objectives

- State the reasons for structuring a lesson.
- Describe the structure and characteristics of a lesson.
- Explain each element within the lesson structure.
- Structure a lesson.

Lesson Components

Experience has shown that students are more likely to remember what they are told at the beginning and the end, than what they are told in the middle of a lesson.

The way lessons are introduced and concluded is just as important as the way in which the information is developed the lesson.

It can be said, then, that any lesson just like any book or film, needs the following components:-

- Introduction,
- Development,
- Consolidation,

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INTRODUCTION

As the opening to a lesson the Introduction is an important lesson component and should create a lasting impression.

Characteristics of the Introduction

The Introduction to a lesson should be:

- Planned,
- Stimulating,
- Comprehensive,
- Confidently delivered,
- Of adequate duration (usually 3-5 mins).

Components

The Introduction should consist of these sub-components:

Title

- Clearly identified.
- Verbally stated.
- Visually displayed.

Objective

- Behaviourally worded.
- Verbally stated.
- Visually displayed.

Lesson objectives give direction to the lesson and let the students know the standard of performance they are required to reach.

Interest / Motivation

- Interest gaining.
- Relevant to lesson.
- A good reason why they need to know this.
- Creates readiness to learn.

Motivation is a combination of *interest* and *need*. Something new, exciting, different, challenging or at odds with our expectations will usually arouse our curiosity. If the instructor can plan an activity, tell a story or use what will be interesting to the students, and still be relevant, then the students will be motivated.

Following closely to interest, students should be given a *reason / need* to learn the information presented to them. The instructor should try to present the information into a related context; “*You will use this information when you*” or “*This is the sort of trouble you can end up in*”.

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Scope

- Outline the way the lesson objectives will be achieved.
- The lesson strategy should be appropriate to the lesson objectives and student needs.
- Some reference to methods and media to be used may be relevant.
- Outline the expectations of the student.

Revision / Link

- Of key points from previous lessons.
- Using question / answer.

Revision / Link gives the instructor effective feedback on the students existing knowledge. It also allows the instructor to tie previous information in with the new topic. It can also give the instructor a starting point for the new topic. (Note: the instructor may find the students existing knowledge poor. If so, what effect will extensive / extended revision have on the lesson timing? etc.)

Handouts

The Instructor should inform the students if there will be a handout issued during or after the lesson, and whether note taking is required.

Any Questions

- Lets students clear up any queries before you get into the Development
- Ask at end of the Introduction.

The order of delivery of each of the components for the Introduction (except *Any Questions?*) is up to you.

NOTE

An easy acronym to learn that covers the components of the Introduction is

INTROSHA

5. The aim of any good introduction is essentially to motivate the students and set the ground rules for them (ie; what is expected of them). Once this has been achieved, the instructor may then move onto the development phase.

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DEVELOPMENT

The development is the most important phase of any presentation and should:

- Consist of new information which will need to be firmly established and reinforced,
- Be delivered step by step,
- Be organised, and
- Constitute 75%-80% of the presentation.

Time

The time spent during the development of the lesson is used to:

- Establish the key points,
- Check student understanding and / or reinforce the key points, and
- Summarise the key points - both verbally and visually.

Development Components

For the development phase to be effective it should contain the following Sub-components.

Establish

This is where new information is given. How the instructor does this is dependent upon the strategies selected.

Check

After establishing new information it is essential that you check for student understanding. This can be done through class questions or quizzes. If a lot of 2-way communication has been used as part of your establishment, then you may choose to omit this part. The rule of thumb to go by is; *if you feel happy that they have displayed an understanding of what you intend to get across then don't check.*

Summary

Breaks the lesson into *bite sized chunks*. Allows repetition of the key points that you've established and questioned them on. It highlights the points that you want the student to get out of the step and helps form the basis of the review of the whole lesson when you get to the conclusion.

NOTE

The Development has an acronym to make it easy to remember;

ECS

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CONSOLIDATION

Remember that *things learnt last are remembered first*. It is important, then, that the Consolidation is carefully planned. The Consolidation is made up of the following sub-components.

Objectives

Refer back to the objectives so that the students can match up the key points of each step. This proves to the class the objectives have been achieved.

Key Points

Review all the key points. This allows the students to review the information. Repetition is vital for retention. The instructor should consider using different training aids from those used in the development - variety is good.

Link Forward

Re-establish the need. The instructor should show how the new information can be applied in future activities or lessons.

Any Questions

Students should be given the opportunity to clear up any last minute confusion.

Excepting for *any questions* which goes last, the order of delivery of the components of the conclusion is up to the instructor. The instructor should plan the conclusion and not just *let it happen*.

NOTE

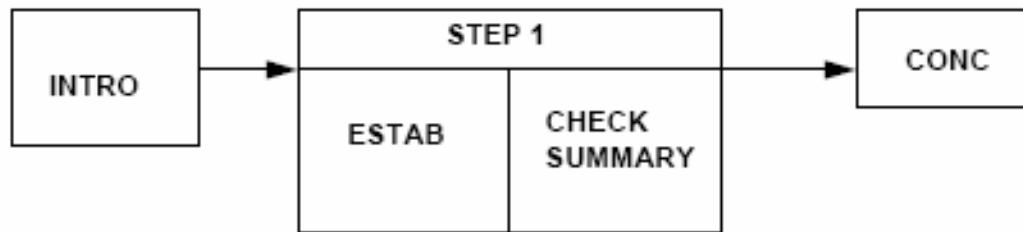
The acronym for the Conclusion is

OKLA.

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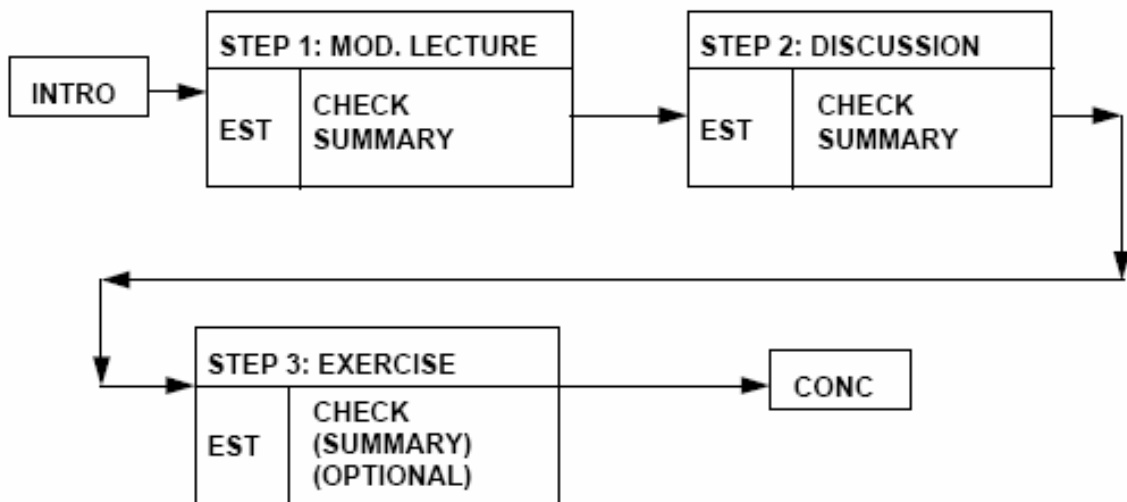
THE STRUCTURE OF A LESSON

An example of the structure of a simple one - step lesson is outlined below:



Model of One - Step Lesson

An example of a lesson containing a number of steps, employing different teaching methods, is shown below:



Model of Three - Step Lesson

NOTE

To plan a structured theory lesson, you need to remember:

INTROSHA - ECS - OKLA

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Section 5 - Lesson planning

Objectives

- State the purpose of a lesson plan.
- State the factors to be considered when preparing a lesson plan.
- Describe the content of a lesson plan.
- Write lesson plans.

Lesson planning

Lesson plans result in more effective and professional presentations by:

- Structuring the lesson,
- Keeping it on track,
- Cuing aids, time etc.
- Aiding instructor confidence.

Factors to consider

Before an instructor can actually start planning a lesson, there are a number of factors that need to be considered. These are:

Objectives

- What has to be taught / What do the students have to be able to do?
- Are cognitive and / or practical skills involves (knowledge or performance objectives)?

Knowledge of Topic

- Does the Instructor know the topic adequately?
- What is the student pre-requisite knowledge?
- What is the student knowledge (starting point - baseline)?

Student Numbers

- The size of the group will have an effect on activities and method of instruction.
- Number of instructors needed.

Time

- Allocation of periods - block of instruction or one lesson.
- Amount of material to be covered.
- Programming of practical work.

Instructional Strategy

- This has to be considered to choose the best method of instructing each objective.

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Training Aids

- Consider variety and effectiveness.
- Are notes, handouts necessary?

Sequencing of Teaching Points

- Consider logical flow and progression.
- Theory then practical.

Where to go for HELP

There are a number of avenues to explore to gain assistance in writing lesson plans. These include:

- Syllabus
- Instructor Guides
- Other Lesson Plans
- Other Instructors
- References/Textbooks (ACP's)

LESSON PLAN CONTENT

Lesson plans should contain the following detail:

- *Preparation Of The Classroom.* It is helpful to detail exactly what you wish to write up on whiteboards or chalkboard's, (for example, title, objectives) which OHT should be ready on the OHP, which video film is to be set up in the VCR, the positioning of desks, numbers of T/A's or T/D's required, and their serviceability etc. Knowing that you have everything set up can be a great confidence booster and it also serves as a last minute reminder of what you intend to achieve in the lesson.
- *Lesson Title, Objectives, Strategy.* The title and objectives must be clear to us, or we will not be able to communicate them to the students. Stating the objectives serves to keep the lesson on track, and tells the students what is expected of them.
- *Content of the Introduction / Development / Conclusion.* Remember INTROSHA, ECS and OKLA. The Key Points, the summary points, and the strategy. Detailing the strategy, (methods and media)
- Important Questions to be put to the class – Include answers where precise definitions are required.
- *Timings for each part of the Lesson.*

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Lesson plan - Example

| Classification: Leading Course: Expedition Training Subject: Route Cards | | Prepared by: Flt Lt Hincks Date: 20Feb05 |
|--|---|---|
| KEY POINTS | INSTRUCTOR NOTES | AIDS |
| | <u>Introduction</u> | |
| Title | Route cards | OHP.1 |
| Revise Link | Expedition training / Leading cdt. map reading Grid ref, Bearings etc. | 5 Mins |
| Objective | 1. State purpose of a Route Card 2. Plan an expedition using a Route Card. | |
| Scope | Introduction of Route Cards as a means of planning expeditions | |
| Handout | A Handout will be given but - Take Notes | |

| KEY POINTS | INSTRUCTOR NOTES | AIDS |
|-----------------|--|---------------|
| Interest / Need | | |
| Q | What is a Route Card? | |
| A | A Route Card is a detailed plan containing all the navigational information required to carry out an expedition e.g. Map ref. Bearings etc. | |
| Q | Why have a route card? | |
| A | <ul style="list-style-type: none"> ● To convey your intentions to others <ul style="list-style-type: none"> ● The group ● Rescue ● Supervision ● Avoids the need for extensive calculations & map work in the field. | 15 Mins |
| Any Q's | <ul style="list-style-type: none"> ● Avoids this happening to me. | OHP. 2 |

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| KEY POINTS | INSTRUCTOR NOTES | AIDS |
|--|---|--|
| <p>Required Data Q</p> <p>A</p> <p>Nasmith's Rule Establish Consolidate</p> | <p><u>Development</u></p> <p>What information is required on the card?</p> <ul style="list-style-type: none"> ● Purpose ● Date ● Time ● Grid Reference ● Bearings ● Description of Route ● Distance ● Height ● Time taken <p style="text-align: right;"> <ul style="list-style-type: none"> ● Distance & Time ● Height & Time Examples </p> | <p>OHP. 3 Example of blank Route Card</p> <p>OHP. 4 OHP. 5</p> |

| KEY POINTS | INSTRUCTOR NOTES | AIDS |
|---|--|---------------|
| <p>Additional Data Q</p> <p>A</p> <p>Any Q's</p> <p>Advantages Q</p> <p>A</p> | <p>What other useful information is required on the reverse side of the card?</p> <ul style="list-style-type: none"> ● Map data ● Rescue / Refuge ● Foul weather (Ref Snowdon Ex.) ● Phone numbers <p>To summarise What are the advantages of having a Route Card?</p> <p>You are all familiar with the route Dangers identified (Ref Snowdon Ex.) Avoids errors in the field.</p> | <p>45 Mns</p> |

Instructional Techniques

| KEY POINTS | INSTRUCTOR NOTES | AIDS |
|------------|--|--|
| Objective | <p><u>Consolidation</u></p> <p>1. State purpose of a Route Card 2. Plan an expedition using a Route Card.</p> <p>What is a Rout Card?</p> <p>What is Nasmith's Rule?</p> <p>Why do we record both G & M Bearings on an Route Card</p> <p>You will plan an expedition using a Route Card in your next lesson</p> | <p>Handout Copy of Rout Card</p> |
| Key Points | | |
| Q | | |
| Q | | |
| Q | | |
| Link | | |
| Any Q's | | |

Hints

- Use key words, phrases rather than whole sentences (except for important direct information): there will be a tendency to read if you have too much written.
- Use UPPER CASE (capitals) - cursive writing makes it difficult to find your place.
- Divide into sections - use headings, and horizontal lines.
- Use colour to highlight headings, main points, questions, aids.
- Cue Questions, Training Aids, Time. Use symbols in columns
- Despite all of this you call still run into problems so allow for *flexibility* and don't over-rely on the set plan; allow a bit of 'give and take'.

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Section 6 - Question techniques

Objectives

- Explain the purpose of Questioning Technique.
- Describe delivery techniques.
- Describe inappropriate techniques.
- Use appropriate Questioning Techniques.

Introduction

Questions serve several main purposes. Before asking one, ask yourself what you hope to achieve with the answer. A well put question might help you:

- adjust the level of instruction to match the level of participants;
- reveal misunderstandings, which you can then correct on the spot;
- permit participants to contribute experiences or ideas;
- emphasise main points to improve learner retention.

PURPOSE OF QUESTIONING

In the lesson structure, questions can be asked in the Introduction Development and Consolidation phase.

In the *Introduction* questions can be asked to:

- Stimulate interest,
- Revise or link to previous knowledge.
- Establish why students need to know the information contained in the lesson.

In the *Development* questions are asked to:

- Maintain interest,
- Establish key points,
- Check the application of key points,
- Check progress of students, and
- Ensure students are on the same *wave length*.

In the *Consolidation* questions are asked to:

- Check understanding of key points

Note: avoided questions, which allow new information to be introduced into the Consolidation, maintain a tight structure when reviewing the lesson.

Instructional Techniques

HOW TO QUESTION

One of the aims of effective training is to get the learner involved. One way in which this can be achieved is to ask questions. Questioning is a quick, easy and under-utilised method of improving student understanding and retention by giving the students ownership of the answers, thus their own learning.

Questions can be used as routine devices for maintaining communication and even as a control device for that *troublesome* student. One of the most important components in questioning is the delivery.

POSE - PAUSE - POUNCE – PRAISE

An effective question delivery technique utilises the following method.

- **POSE** - Firstly pose the question to the whole group. By doing this the instructor will have all the students attentive and searching for the answer.
- **PAUSE** - How long the instructor pauses will depend on the type of question asked.
- **POUNCE** - Nominating a student to answer the question is done when the instructor feels the class has had enough time to organise one. Seeking and maintaining eye contact will assist the instructor to choose the particular student to answer.
- **PRAISE** - Once the answer has been given, positive feedback is given to the respondent. By responding positively to student's answers instructor's ensure continued participation by the student.

WRONG ANSWERS

Not every answer received will be correct. A wrong response should *not* be handled negatively. The following are the strategies to employ for incorrect responses:

- *Rephrase* the question and then ask the same student to respond.
- If the student still has a problem giving the correct answer then *redirect* the question to another student.

INTERROGATIVES

When asking questions try to use Interrogatives:

WHAT? WHEN? WHERE? WHY? WHO? WHICH? HOW?

Instructional Techniques

FAULTS TO AVOID WHEN QUESTIONING

The following should be avoided when questioning:

- Questions that are too easy or too difficult - decreases motivation.
- Ambiguous questions - 'I hope you know what we mean by this one'
- Word searching - question for concepts and ideas not specific words.
- Trick or guess questions - there is little value in asking a trick question or questions that the student can only guess at.
- Open ended questions - eg. 'what could cause your engine to seize?'
There are too many correct responses.
- Yes / No answers.
- Pre-nomination.

STUDENT QUESTIONS

There are different ways to respond to students' questions depending on the situation.

The instructor should do the following when asked a question:

- Where possible turn the question back onto the student who asked the question. The original question may need rephrasing, however, by allowing the student to discover the answer for themselves it may help confidence as well as increase the power of the students understanding.
- Redirect the student question to the whole class. This continues to keep the learning student centred, not instructor centred. It also gives the instructor time to think if needed.
- Answer the question if it specifically asks for an opinion.
- Answer the question if it deals with something specific that only the instructor would know the answer to.
- If the answer is not forthcoming, indicate to the student research will be carried out and an answer will follow. Additionally, it is imperative that the student is returned with an answer. Performing this function will maintain instructor integrity.

In summary

Remember that questions form a very important component of the 2-way communication process. If questions are delivered correctly then the instructor will find that the quality of the responses will be more meaningful to the whole class.

The effective use of questions may result in more participant learning than any other single technique we use as instructors. Questions play a key role in most teaching methods.

Instructional Techniques

Section 7 - Instructor Attributes

Objectives

- Describe the instructor attributes, which influence instructional effectiveness.

INSTRUCTOR ATTRIBUTES

Students will model their behaviour on you. If you have poor attributes then learning will suffer.

Preparation

A good instructor always prepares for the lesson by:

- Considering the content of the lesson to ascertain the best way to present it,
- Preparing a lesson plan,
- Ensuring they have a sound knowledge of the subject,
- Checking all aids and equipment prior to the lesson,
- Checking the student's background to ensure the lesson is pitched at the appropriate level.

Eye contact

Maintaining eye contact throughout a lesson:

- Personalises instruction,
- Allows the instructor to check for confusion,
- Keeps students alert, and
- Focuses student attention on the instructor and vice versa.

Stance and movement

When moving about the class it is important to:

- Be natural and purposeful
- Use movement to focus attention
- Avoid distracting movements eg; pacing, rocking, tapping and so on.

Gestures and facial expression

A good instructor should use:

- Natural and purposeful gestures
- Non-verbal cues to help students answer, eg. nod or smile
- Gestures and expressions as a management device.

Appearance

A good instructor displays a professional attitude by:

- Dressing neatly and appropriately
- Being well groomed.

Instructional Techniques

Students will model their behaviour on you. If you appear untidy, disorganised and slouch around the classroom you can hardly expect them to be different.

Level of language

Students may not have had the benefit of your experience of the subject, avoid:

- Jargon,
- Abbreviations,
- Technical language.

Obviously if the subject matter is of a technical nature which demands the use of the above, ensure that you introduce the new jargon, abbreviations and technical language in a controlled way. Introduce your students to it, don't just drop it in and expect them to know what you're talking about.

Voice

Your voice has a major effect on the communication process. Try to listen to yourself whilst you are talking. Listed below are some things to work at:

- Volume / projection:
 - Keep your head up,
 - Speak loud enough for the person at the back to hear, and
 - Maintain good eye contact.
- Clarity:
 - Pronounce words clearly,
 - Don't mumble.
- Modulation:
 - Vary pitch, tone and volume of your voice to add emphasis to your presentation.
 - The verbal delivery should flow smoothly,
 - Avoid 'ums' and 'ahs'
 - A well-timed pause can add emphasis.
- Pace:
 - how quickly you speak, and
 - how quickly the material is presented.

Organisation

The instructor who is organised and professional in their approach to the job instils confidence in the class.

Enthusiasm

Students will follow the instructions and guidance of an interested, enthusiastic, confident instructor more readily than those of a disinterested, lethargic instructor.

Instructional Techniques

An instructor who takes a professional approach to instruction and who is always thoroughly prepared and willing to assist students, will always be more effective than the disinterested, poorly prepared instructor.

SUMMARY

As the instructor you should set an example, keep dress standards at a level that your students should achieve.

Remember to use eye contact, stance and movement as well as the qualities in your voice to keep the students attention and maintain interest.

Be enthusiastic about the material you instruct. If you don't show enthusiasm about it then your students certainly won't.

Ensure that you are prepared and organised before the lesson begins. This means ensuring that:

- You have a sound knowledge of the subject which means keeping up to date with changes,
- The content you teach meets the demand of the course,
- You have a prepared lesson plan (refer to section 5 - Lesson Plan).

There is nothing more de-motivating for the student than to see the instructor scrambling around at the front of the classroom trying to get himself organised so he can begin the lesson.

Instructional Techniques

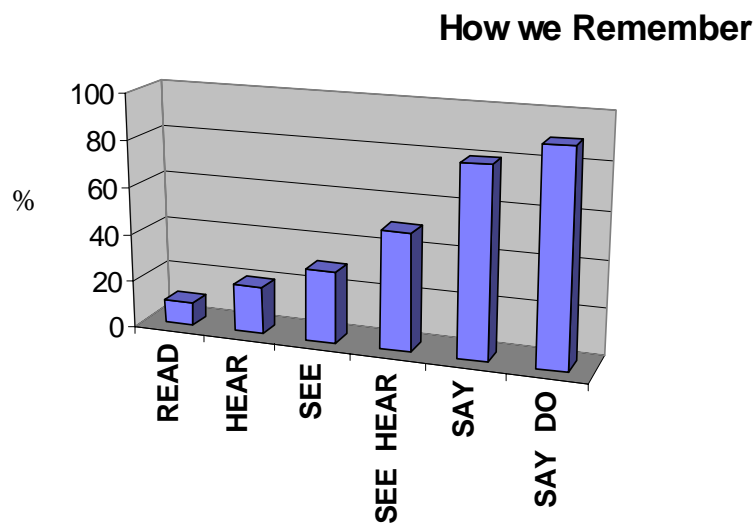
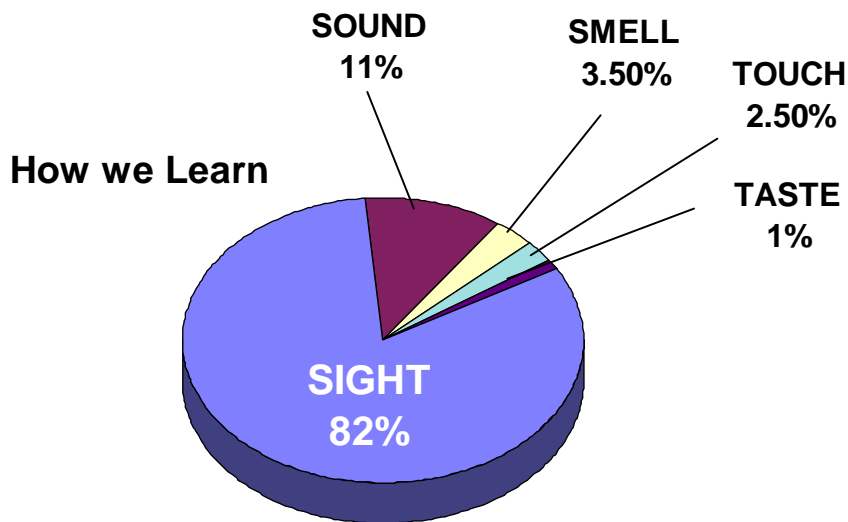
Section 8 - Training Aids

Objective

- State the purpose of Training Aids.
- List the types of Training Aids available
- Use of different types of Training Aids

PURPOSE OF TRAINING AIDS

The primary purpose of Training Aids is to assist the instructor and aid the process of learning.



Instructional Techniques

DEFINITION

A Training Aid is anything, which the instructor uses to promote student learning.

NOTE

Training Aids are strictly aids to learning. They are not a crutch for you as the instructor to lean on, or something that we feel we must use all the time.

EXAMPLES OF TRAINING AIDS

| Non-Projection Media | Projection Media |
|----------------------|--------------------------|
| Whiteboard | Overhead Projector (OHP) |
| Chalkboard | TV / Video |
| Charts | Computer |
| Handouts | 35 mm Slide Projector |
| Magnetic boards | 16 mm Film Projector |
| Models | Lite Pro (PowerPoint) |
| Real thing | |

Projection media

The importance of Projection Media in lessons is stressed for it:

- Breaks the monotony of hearing the instructors voice all the time,
- Uses the sight and sound senses which is the highest memory retention combination,
- Can have a very high impact on the students

Audio-visual aids are important tools. They accomplish a lot of things such as:

- Highlighting key points,
- Repeating material in a different way,
- Providing a common focal point for the students and keeping them on track,
- Gaining the attention of the students,
- Adding variety,
- Serving as the next best thing to actually demonstrating the real thing.

CHARACTERISTICS OF GOOD MEDIA

The characteristics of good media are:

- Accuracy,
- Visibility,
- Impact,
- Simplicity.
- Applicability

Instructional Techniques

Layout and balance

Important points to consider are:

- Centralise headings to focus attention,
- List information where possible,
- Use diagrams to enhance explanations,
- Colour should be used for effect and be consistent, no more than three (3) colours as a general rule of thumb,
- Writing should be legible - use clearly defined font without using too much variation in style.

Condense information.

- Do use large symbols and abbreviations.
- Do eliminate every unnecessary word or figure.
- Do design the material so that it can be read easily from the back row

HOW TO USE TRAINING AIDS

We do not intend to cover all training aids in detail within this section. The following should however address the key points that should be remembered when using those aids, which are generally available.

BOARDS

Boards are one of the most widely used training media, but are often misused.

A whiteboard is a smooth white-surface board, which can be written on with special Whiteboard markers. Remember to use the correct water based markers - ***DO NOT USE PERMANENT MARKERS***

The white surface is much easier to look at in contrast to the darker coloured chalkboards.

As with the use of most training media, there are a number of things to remember when using the boards:

- Visibility,
- Use of appropriate colours (i.e., dark colours on whiteboards, light colours on chalkboards),
- Legibility,
- Not generally suitable for complex time consuming diagrams

Instructional Techniques

HANDOUTS

Handouts contain guidance such as diagrams and summaries of key points of the lesson.

Specific characteristics of handouts are they:

- Aid reinforcement of learning,
- Are a ready reference for participants, which can be issued before or after instruction.

Like any visual aid, handouts need careful planning for maximum impact.

Handouts must:

- Be simple,
- Be directly related to the lesson,
- Have high visual impact.

OVERHEAD PROJECTOR

The Overhead projector has become one of the most popular forms of training aids in use today.

OHP Preparation

- Arrive early and check the room and equipment.
- Ensure the OHP is clean and in working order.
- Ensure the OHP does not block the view of any students.
- Tilt the mirror head and project onto the screen as a test.
- Place your transparencies on the table in order of viewing.

OHP Presentation

- Place the transparency on the OHP the right way up.
- Don't get in the way
- If you use a pointer, use it on the transparency - not on the screen.
- If you mask to reveal points one-by-one, place the mask under the transparency so you can read what is still unrevealed.
- Turn off the Projector light when changing transparencies or if not using the OHP.
- Keep eye contact with your audience. OHP is just your aid you are the presenter.

Instructional Techniques

Preparing OHP Transparencies

- Make them clear
- Keep them simple.
- Ensure they are easy to understand.
- Don't use normal-sized typed text it is far too small.
- Remember, a picture is worth a thousand words.
- Bring it alive with colour, cartoons, and pictures.
- Ensure the layout is balanced and logical.
- Use a frame - this makes for easier handling and frames can be used for notes.
- Ensure that it says exactly what you mean.
- Maintain a consistent format. A horizontal format is best when producing OHPs because most people are accustomed to reading horizontal lines.

Pointing and revealing techniques for OHPs

- Pointing techniques - put the tip of a pen or pencil directly on the transparency item that you want to highlight. A less preferred alternative to this is to use a pointer and point directly to the screen.
- Revealing techniques - use a sliding mask (paper under the OHP to cue you) for sequential points, or overlay flaps attached to the OHP for disjointed points.

Methods of transparency production

- Pens and stencils.
- Use photocopies of text or graphics from books or magazines.
- Use pencilled text or graphics.
- Use computer generated text or graphics.

VIDEO / TELEVISION

The RAF and ATC have produced a large number of readily available videos many of which address specific areas of our training syllabus. Many general interest aviation subjects are also available.

With the advent of relatively affordable digital cameras and computer editing equipment It may even be possible to produce your own training videos.

The following points must be remembered when using Video / TV:

- Don't just sit students in front of any old video for something to occupy time when you can't think of anything better to do with them.
- Introduce students to a video in much the same way as you would do an introduction to a lesson, INTRODASHA. And close out with OKLA.

Instructional Techniques

LITE PRO

Lite Pro's are portable presentation management systems that incorporate easy to use electronic slides. To create images and slides for presentations, you can use the software application called Microsoft PowerPoint. Using this software, slide presentations are captured on diskettes. Because each diskette is a slide show, slide presentations can easily be managed and transported. Microsoft PowerPoint has the capability of adding movement to slides and therefore the creation of presentations is only limited by the users imagination.

A major disadvantage of Lite Pro's is that it can lose its impact very quickly (and seem like a slowed down video), and the instructor can very easily and quickly start to *lecture* the audience (ie; very little student interaction). It does not lend itself easily to highly interactive forms of instruction (eg; the lesson method, discussion, skills etc).

COMPUTERS

The following are some uses and advantages of computers in the classroom:

- Students learn at their own pace.
- Students participate actively in their own learning.
- Instructors can supervise large numbers of students and still be able to personally assist slower students.
- Can be used as an aid by the instructor in the following lessons:
 - Tutorial,
 - Flight simulation,
 - Demonstration.

When to use what

It is important to remember that the training aid is not the be all and end all of training.

Whatever you do, don't become a mere presenter of training aids. Some general rules may assist you when deciding when to use the projection aids that are available. These rules are:

- Use projection aids to help reduce your involvement; this also provides variety from the students hearing your voice all the time.
- Slides, OHPs and films work well when you, the instructor are an integral part of the learning environment. They should support you, not dictate what you do.
- Video and computers work well when the learner is more in control of the learning process. Make them interactive, give them tasks to achieve and then follow them up.

Instructional Techniques

Section 9 - Classroom management

Objective

- Describe the range of individual differences.
- Describe instructor strategies for managing individual differences.
- Describe the types of problems which may be experienced in the classroom.
- List the causes of problems in the classroom.
- Describe the strategies for overcoming problems.

CLASSROOM MANAGEMENT

Instructors should not be thinking of discipline in the military sense of not following orders for it would be impossible for anybody to order somebody to learn. Here the focus is on looking at problems that arise for reasons that generally can be dealt with without recourse to punishment. If, for example, several students are talking to each other instead of paying attention or continuing with their practical work, it may be because the work is not challenging or interesting enough and a classroom management problem results as they will be distracting the other students.

The difference in meaning (in this context) between discipline and control is:

- Discipline - behavior according to established rules.
- Control - power of direct command.

Causes of Classroom Problems

The following are the common causes of classroom problems:

- Environment / climate,
- Distractions,
- Poor preparation,
- Personality clashes,
- Lack of interest / attitude,
- Differing ability levels,
- Pressure, and / or
- Rivalry.

Three phases of classroom management

Classroom management can be divided into three phases:

- Constructive phase,
- Preventative phase,
- Remedial phase.

Instructional Techniques

CONSTRUCTIVE PHASE

The first or *Constructive phase* involves creating a climate in which problems are not likely to occur. The classroom rules should be set so that every student knows what is allowable and what is not. Instructors have found that by being positive and basing discipline on telling students what they can do, rather than being negative and telling them what they cannot do gives the student responsibility for their own actions and they tend to react in a more positive and mature manner. Instructors should also be well prepared for each and every lesson that they teach; if the students can be kept busy there will be very few problems arising that will require any disciplinary action. Lessons should use a variety of training aids and methods to actively involve the students and allow for differing student abilities and preferred method of learning.

The following points summarise the Constructive phase:

- Creating a situation in which Problems are not likely to occur.
- Base discipline on *do* rather than *do not*.
- Actively involve students.
- Respect the personality of the student.
- Be professional / business like during teaching and dealings with students.
- Allow for different student abilities.
- Use a variety of training aids.
- Minimise distractions.
- Prepare / plan your lessons.

PREVENTATIVE PHASE

The *Preventative phase* is concerned more with the instructors control of the classroom environment and the non verbal signals that can be used to advantage. Learning the students names will put the instructor on a more personal basis and make it easier to control the group; people respond very quickly to hearing their name rather than a vague *he you* which is easy to ignore. Eye contact, pauses, expressions and volume of voice are all means of controlling a situation. A pause, if held for long enough, will silence any noisy student. As they realise that their voice is the only one in the class, embarrassment sets in and they will stop talking as they do not want to be the center of attention.

Following are points that summarise the Preventative phase:

- Resort to *tricks of the trade* to control the situation.
- Use a seating plan.
- Eye contact.
- Pregnant pause.
- Volume of voice.
- Don't avoid / ignore problems.
- Don't display anger.

Instructional Techniques

REMEDIAL PHASE

The *Remedial phase* is only used if the first two phases have not been successful. The instructor should deal with this phase in the same way as any discipline problem in the classroom. The instructor should be frank and honest with the student, explain what the problem is and give the student the opportunity to explain as well. The instructor should never ridicule a student or deal with the student in front of the class as the student may resent the instructor and could be a problem for the rest of the time that they are in class.

This should be the last step in dealing with any problems that arise and that if the instructor has concentrated their energy into the first two phases they should very rarely have to use the Remedial phase.

The following points summarise the Remedial phase:
Handling the problem and punishment.

- Give student opportunity to answer allegations.
- Be frank. State complaint fairly.
- Don't publicise offences / treatment before class.
- Avoid punishing whole class for faults of a few.
- Don't display anger.
- Don't force an apology.
- Don't make an issue of something that is trivial.
- When the case is settled, drop it.
- Don't ridicule a student.

TYPES OF STUDENTS

Fast Learner,

A fast learner is usually the first to finish, but after a while the work may be found unchallenging and boring. If this happens a lack of motivation will develop and the fast learner can become a disruptive influence in class.

Once the fast learner is identified the instructor may give this student more advanced work. The instructor should use the fast learner to help the slower students if their personalities are suited to the task. But whatever action is taken the instructor should be careful not to appear to be favouring the fast learner. Any extra work that is given must be of benefit, not just act as a time filler.

Slow Learner,

The last one to finish, always a day behind but they have mastered the theory or skill by the next day. These students present no real problem, apart from frustrating the instructor. The ones to watch are those that steadily fall farther behind the rest of the class. The instructor must then find out why. Do they lack aptitude for this field? Are they slow to comprehend but capable of retaining? Do they have a limited vocabulary?

For this type of student extra coaching or tuition may be the answer.

Instructional Techniques

Talker,

Long winded, tedious and always ready to express their views, this student is relatively harmless but takes up an unfair portion of the class time. Encourage them to express themselves concisely and help by asking questions which call only for short answers.

Fault Finder,

Anti-everything, this student will find fault with what is supposed to be being learned, the methods of instruction and with the whole environment. This presents a genuine challenge to the patience and ingenuity of the instructor. The instructor should never get involved in a personal argument with this student as it wastes class time. Either admit the grievances as a problem, if this is the case, or settle them, if possible.

Know All,

The instructor should find out if the student is really knowledgeable or merely a pretender. Ask more questions and the pretender's lack of knowledge will show through. If the person is knowledgeable, the instructor should treat them as a fast learner by involving them in the class. The instructor should not despise them because they may know more. Instructors should remember the reason they are there; to instruct and pass on knowledge.

Side Tracker, Joker and / or Sleeper.

The remaining types are all combinations of the ones above, and may be trying to cover the fact that they are having problems with the course by telling jokes or side tracking stories. On the other hand it may be because they are bored and not interested in the subject because they know it already. It is up to the instructor to decide what the problem is and take appropriate action.

Instructors should be careful of classifying trainees; most times the problem trainee is a mixture of the above types. The instructor should also make their own judgment rather than accepting other instructors previous assessments, as they may have had a personality clash or personal problems which were affecting their work.

Instructional Techniques

Section 10 - Practice lessons

Instructional Techniques

What Next

You have now completed your Instructional Technique course, but what does that mean?

Your learning of instructional techniques should not stop as soon as you've finished this course. Very much like passing your driving test, you really start to learn when you get behind the wheel on your own, likewise, when you go back into the classroom and put what you've done on this course into practice you will truly start to learn what being an Instructor is all about.

Make use of your fellow instructors, especially those that have experience. Bounce ideas off them looking for ways to improve your teaching methods. Don't be backward in asking for assistance from the Squadron Training Officer.

Continue to evaluate your own performance. When you feel comfortable in your teaching environment seek peer evaluation by getting other instructors to sit in on your lessons.

Looking at the big picture you now have a good technical understanding of the theory behind the art of Instruction, however you will only become a good instructor and improve the standard of instruction given to cadets if you put the theory into practise each time you take a lesson.