



Defence Instructor Handbook

(Defence Instructional Techniques)

WARNING

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FORWARD

In the ever-changing operational environment, a lot of money is spent on training equipment. However the vast majority of training still needs an instructor to make it all happen. The success of our training does, therefore, rely very much on the quality of our Service and civilian instructors.

Instructors have a responsibility, and a unique opportunity, to influence the development of personnel. This Handbook aims to provide MOD instructors with a brief reminder of a number of relevant issues within the training environment, and to provide some specific and practical suggestions to help improve training.

The handbook has been split into two sections. The first one looks at Service Core Values and Standards, emphasising the importance of demonstrating these key qualities, both as an individual and as a person in authority including the wider implications of training people such as harassment, standards of conduct and safety.

The second section is based upon the practical aspects of basic Defence instructional techniques, gives an overview of the techniques which help ensure that the learner is clearly presented with the correct information in a logical and easy to learn order.

The handbook is aimed at staff in instructional duties in phase three training establishments, but may be particularly useful to new instructors. It should also be a reminder to the experienced instructor despite years of instructing there are still some aspects that could be new and thought provoking.

I hope that the ideas and suggestions within this handbook will help you reflect upon, and develop, your instructional and personal style to benefit your students.

It is important to note that this handbook is an aide-memoir. It is not a self-study guide and does not take the place of the Defence Instructional Techniques or Defence Train the Trainer courses.

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Role of the Instructor

As an instructor you will have a great influence on your students. A major part of training is to ensure that all trainees achieve the disciplinary, personal and communal standards that make up the ethos of being a member of the Armed Services or Civil Service.

You are responsible for the maintenance of good order and discipline in the training environment. You should also have a good knowledge of the subject and present it in a clear, unambiguous and confident manner, maintaining eye contact and firm classroom discipline. Nevertheless, you should remember that the most effective instructors establish good rapport with the students.

Traditionally the role of the instructor has been as a purveyor of information: the teacher was the fount of all knowledge whilst the students listened passively and took their own notes. This is no longer the perception. The instructor today can be more of a facilitator: a person who helps students to learn. This change from the traditional model recognises that your students are adults and that not everyone learns in the same way or at the same pace.

Whenever you work with a group of students they are scrutinising everything that you do and say. They are forming opinions and making judgements on how you behave and on how they can behave. As an instructor you should be a model of integrity and good practice from which students can learn.

Duty of Care

As instructors you are responsible for ensuring students' welfare during training.

You should:

- **Create Safe, Sensible and Progressive training.** Students should not be pushed too quickly and must be allowed time and space to learn from mistakes.
- **Use Relevant Training methods & Media.**
- **Challenge students appropriately.** Stretch them mentally, physically and intellectually to allow them to grow.
- **Encourage healthy competition.** Create the desire to win and reward success but ensure appropriate support and balance to maintain motivation.
- **Appropriate Humour.** Appropriate humour in training is a powerful tool to enhance learning. However, be careful of misdirected humour as this could hinder learning and de-motivate students.
- **Ensure good practice in Equality and Diversity.** Instructors must lead by example by making it clear that they disapprove of any form of discrimination.
- **Ensure Respect in training.** Create an environment of mutual support and respect, where all contributions are recognised and valued. This will increase a student's self-esteem and confidence. An environment of humiliation, threats and abusive language or action would have the opposite effect and is not to be tolerated.
- **Maintain Discipline.** You should not put off giving legitimate orders for fear that trainees could challenge them. However, be sure of your powers as unofficial procedures could be classed as bullying.

- **Be Accountable for the training.** You are responsible for the quality of the training you deliver. Adapting your instruction to suit your students' strengths can help. This requires total commitment and is fundamental to keeping students well motivated and assist their learning.
- **Provide relaxation in training.** Relaxation is important to allow the students to recover mentally and physically. This is achieved by provision of proper meal and break times as well as appropriate periods of free time.

Defence Code of Practice for Instructors

Aim

This Code is for all Service and civilian instructors in the Ministry of Defence. All instructors are expected to adhere to the ethos and meet the standards set out within it.

The spirit of these instructions is to be applied to all training; even when circumstances described in this booklet may not appear to be directly relevant. The Code serves to unify and complement the various training courses provided for instructors.

The Defence Code of Practice for Instructors is divided into 5 sections:

The Training Ethos.

Conduct of Training.

Training Progression.

Safety Guidelines.

Prohibited Practices Between Instructors And Students

The Training Ethos

The Armed Forces have a unique training ethos. It is a combination of firm discipline, high quality rigorous training, maintenance of high standards, a sense of fair play, treating the trainee as an individual and encouraging people to achieve tasks and skills far beyond those that they first thought themselves capable of. Skill, strength and forbearance are admired and encouraged; there is no place for cruelty, callousness or meanness.

Our training is characterised by a strong sense of purpose, relevance to the operational environment and the will to develop the values and standards of the Armed Forces in the individual tempered by compassion for the less able. A strong sense of appropriate humour pervades the way in which this training is delivered. Training is successful if it results in a high level of skill, self-discipline, initiative and obedience to orders in the moment of crisis. This defines the challenge to the instructor, each of whom will be held as a role model to the trainee in all that they do. To attract the right quality of individual, appointment to instructional posts must be seen clearly as a valuable and rewarding appointment that enhances an individual's career prospects and general employability.

As an Instructor you must:

Motivate
Inspire
Challenge
Excite
Enthuse
Sustain

Even trainees who fail to complete training must feel that they are a better person because of their training experience. Base your efforts on team building as the hallmark of a successful military is where ten persons acting together see themselves as more effective than ten individuals acting alone. To young people of today this may not come easily but they must learn that they lose none of their freedom or individuality by becoming a fully contributing member of a successful team. While requiring obedience, you should not stifle initiative or independent action; instead guide trainees to learn to offer their contribution to the greater good of the team.

'Train in' not 'Select out'

A particular challenge to an instructor is to get the right balance between encouraging a weak trainee, whose true potential may only be faintly visible, and warning, perhaps even helping to discharge, those who are never going to achieve the required standard. This dilemma is compounded by the fact that people develop at different rates and because many individuals lack prior knowledge of the Armed Services and may be less prepared for what the Service requires of its people. Each case must be treated on its own merits and every effort must be made to encourage every individual to pass, but not at the expense of the standards required to maintain operational effectiveness. Emphasis should fall on 'training in' rather than 'selecting out'.

Leadership

Instructors are expected to set the highest standards of motivational and inspirational leadership at all times, and to demonstrate, by example, the same leadership expected on operations. Instructors should have the moral courage to demonstrate sound principles, high personal standards, values and a strong code of ethics at all times; but particularly when making decisions under stress. Good leadership is vital in this respect and the instructor should participate fully in the rigours and hardship of training and inspire their trainees through enthusiasm, commitment and example.

The Link between Training and Operations

Trainees should be reminded of the courage and skill shown by their forbears in the Armed Forces and of how the stewardship of that tradition now rests with them. A sense of tradition and history may help an individual to focus on the importance of the role they play in serving both the Armed Services and the nation as a whole. Instructors should regard themselves as commanders whose ultimate aim is to take their trainees on operations at the end of that training.

Conduct of Training

Course documentation is developed using the Defence Systems Approach to Training (DSAT), but it is very much the task of the instructor to bring the courses to life as inspiring, imaginative and effective pieces of training. Instructors have a vital role to play in DSAT as it is through the modification of attitude, skill and knowledge that operational effectiveness is achieved. This transformation is greatly enhanced through the delivery of high quality instruction and the passing on of experience. Instructors should provide encouragement and support through positive, constructive feedback. This section suggests how this might be done.

Guidelines for Under 18s

Recruits and trainees under the age of 18 are in full time employment and are therefore *not* subject to Protection of Children legislation. COs are not legally "*in loco parentis*". Nevertheless, COs have a duty of care and are to pay particular attention to the way U18s are supervised. The following is a minimum:

Units are to write to the parents/guardians of each U18 on arrival in the unit giving details of how they can contact the unit if they have any concerns.

Units are to have in place systems and instructions to ensure that U18s are not able to purchase alcohol in the Junior Ranks Club, shop or any other outlet in the barracks.

Units are to ensure that U18s are not able to use gaming machines in barracks. Amusement machines and "skills with prizes" are allowed.

Relevant Training

An instructor must provide training, which is relevant. Training Objectives must be clearly defined, regularly reviewed and then strictly adhered to so that precious resources are not wasted. Using DSAT leads to efficient and effective training. DSAT ensures that, by the end of a course, an individual can perform to the required standard that meets the needs of the customer.

Respect in Training

Every individual's unique contribution must be recognised, respected and valued. It is also important that a relationship based on mutual respect exists between instructor and trainee. Respect from a trainee cannot be demanded or expected but will be afforded naturally to good instructors who continually seek to develop the trainee's self respect with constructive criticism and encouragement. Physical humiliation or the use of threatening, rude or abusive language is counterproductive and is not tolerated within the Armed Services. Furthermore, instructors must never physically strike a trainee and must never abuse their position of authority.

Sensible Training and Safety

Training must be progressive, safe and sensibly achievable. Safe training does not mean being over-cautious, un-adventurous or dull but an instructor must not push trainees faster than they can learn and they must be allowed time to learn from their mistakes. Special care should be taken when planning training for individuals from the reserve forces whose background, military knowledge and experience is likely to be quite different from that of those in full time service. Furthermore, trainees from Foreign and Commonwealth countries may also require additional support and guidance. All training activity must be subject to a formal risk assessment.

Challenging Training

Phase 1 training, by its very nature presents a considerable challenge to a young person. Care should be taken to ensure that subsequent and further training also challenges the trainee mentally, physically and intellectually. If not, the trainee may feel patronized and their interest will fade quickly. This applies particularly to advanced training, which must always acknowledge the maturity and experience already gained by the trainee.

Competition in Training

An instructor must always strive to encourage healthy competition. Success should be rewarded and poor performance identified and rectified. Competition between individuals or teams involving mental or physical endeavour can be an excellent device for improving performance and for developing robustness and the desire to win. Balance and care are always required to ensure that trainees are encouraged and motivated but not demoralized.

Humour in Training

Humour is a powerful tool in the provision of effective training. An instructor should, where possible, aim to make training fun so that the trainee will find it memorable and will be looking forward to the next session. However, care must be taken to avoid misdirected humour that may belittle an individual or cause offence; this achieves nothing and is detrimental to the overall team building process. See also Role of an Instructor below.

Accountability in Training

An instructor is accountable for both the training and well being of all trainees, recognizing their individual strengths and areas for improvement. The task demands total commitment and a sense of responsibility by the instructor. The successful instructor will be prepared to spend extra time coaching or providing informal tuition to assist those trainees in difficulty. Trainees must be motivated and it is important to encourage the trainees to want to learn.

Equality in Training

All trainees of whatever rank, gender, sexual orientation, religion, social background, race or ethnic origin must be accorded fair and equal treatment. No harassment, intimidation, abuse, humiliation or unlawful discrimination of any kind will be tolerated anywhere within the Armed Forces. Instructors should ensure proper standards of conduct, lead by example, and make it clear that they disapprove of any form of discrimination. They should foster an environment where a complaint can be made without fear of retribution. All instructors have a duty to themselves and their colleagues to alert the Service to problems so that action can be taken. Instructors must always respect the confidentiality of the information they obtain and act swiftly. The current MOD Equality and Diversity policy statement underpins this guidance and outlines responsibilities for treating everyone with respect and dignity. See also the section on Equality and Diversity.

Discipline in Training

Instructors must clearly understand their disciplinary powers as published in the orders and regulations of their organization. Unofficial disciplinary procedures can be interpreted as bullying or as an abuse of authority and, for these reasons, all disciplinary action must be clearly recorded and open for inspection. Nevertheless, instructors should not defer giving reasonable but firm orders or taking appropriate action for fear that they will be challenged by a trainee on the grounds of, for example, harassment. Moral courage must be exercised at all times and any inappropriate behaviour or poor attitude/effort towards training must be challenged.

Personal Relationships in Training

The relationship between an instructor and a trainee is inevitably a close one. Some trainees, particularly young recruits, can develop a sense of awe and hero worship that goes beyond professional respect and admiration. Instructors must recognize this and not allow their egos to be inflated to an extent that might lead to an unhealthy abuse of their authority or afford the trainee the opportunity to take advantage of the situation. At all times a professional distance must be rigorously maintained and care should be taken so that the instructor does not become over involved. Failure to do so can lead to unacceptable personal relationships, accusations of favouritism or even allegations of misconduct.

Relaxation for Trainees

Trainees need breaks and time must be programmed into training when they can rest, relax and recover. Strenuous training (both physical and mental) over a long period of time may lead to fatigue and therefore proper time for meals, rest and free time must be given to trainees. Instructors should encourage trainees to take up recreational and extra-mural activities. This will develop a well-rounded person and consequently help build team spirit. Instructors themselves need time and opportunity to get away from their workload; otherwise they may become stale and less able to motivate their trainees. See also the section on *Working Time Regulations*.

Pastoral Care

All instructors should recognize the importance of providing pastoral care and the unique support that Service Chaplains provide in the training and development process. The instructor is to consider the Chaplaincy as a valuable resource that provides trainees and staff with pastoral care at critical moments during the training process. Trainees are to be informed of the availability of the Chaplaincy support both in and out of hours. This should be done in a positive and discrete manner that does not embarrass the individual seeking help. At no point should trainees be asked why they wish to see a Chaplain. Training staff should be aware of the absolute nature of Chaplain confidentiality and should reassure trainees accordingly. See also the Section 5; *Care of Trainees*.

Instructor Training

All personnel involved in the delivery of training and the supervision of trainees should be competent in terms of appropriate education, training, skills and experience. Training will be determined by the training organization and includes instructional techniques, care of trainees and coaching and motivational skills. If instructional and/or supervisory staffs are not fully competent, the physical safety of the trainee, their learning transfer, confidence or welfare may suffer as a result. See also Section 6; *Instructor Development*.

Training Progression

The Link between Phases 1 & 2

If at the end of training trainees have confidence in their physical, mental and technical abilities, it will be because several different instructors over two or more Phases of training have contributed to their success. Liaison between Phase 1 and Phase 2 training schools is essential and regular exchange visits are a key part of this process. On handing over trainees to the next Phase of training, full briefings are to be conducted by the relevant training and administrative staffs to ensure a smooth progression of training in accordance with local guidelines. This should make those undergoing training more comfortable and relaxed despite a change of location and staff. A review procedure is to be used where a trainee's performance is consistently below required standards. The procedure will be controlled at an appropriate level and documented.

The Link to Phase 3 Training

Phase 3 training is where the instructor builds on the foundation of knowledge and understanding that trainees have learned during earlier training and developed during their time within the military. These trainees are likely to be experienced military personnel with much to offer; they will probably have been on operations and will have developed their own views. Defence instructors need to understand the differing Service requirements of their trainees. Instructors must therefore be careful to research the previous training and experience of those attending Phase 3 Training and adapt accordingly.

Safety Guidelines

If training is to be effective, must include exposure to the conditions (real or simulated) that will be present in operations. This will often incorporate some level of risk. The duty of the instructor is to manage that risk in order to deliver that training as safely as possible. Whilst risk management is the duty of the chain of command, responsibility will also rest with the instructor in direct control of the activity. Where that instructor believes, in a particular situation, that the training benefits are outweighed by real risks to life and limb, they have a duty to step in and modify the training. Training safety will be enhanced by application of the following principles:

Risk Assessment

Prior to conducting training, a risk assessment is to be completed by a competent (qualified, experienced and current) individual. Nevertheless, the instructor must always conduct their own assessment prior to the start of training and, if applicable, record any deviations from the lesson plan. They should continue to review that assessment during training in order to adapt to changing conditions (weather, tiredness etc). If appropriate, trainees should be briefed on any changes in the plan resulting from a revised risk assessment.

Safety Instructions

Before any training commences an appropriate set of safety orders/instructions are to be published and a safety briefing must always be given based on those orders/instructions. Repetitive training may be covered by standing orders, provided that these are briefed at regular

intervals. Orders and instructions should include any actions to be taken in the event of an emergency.

Instructor/Trainee Ratios

For many training activities, including adventurous training and physical training, there will be a recommended ratio of instructors to trainees. The instructor must be aware of the guidelines and plan the training accordingly.

Prohibited Practices between Instructors and Students

The following are suggested practices that instructors should refrain from undertaking:

Pursue any personal or financial gain in dealing with recruits.

Accept gifts of any form or value from recruits for themselves or for others, to include charitable organisations, except when specifically authorised by the Commanding Officer.

Borrow money from or loan money to recruits.

Provide transport for hire to recruits.

As part of their position of authority, sell any items, whether personal property or commercially obtained, to recruits. This does not apply to sales personnel of the PRI or NAAFI and its authorised concessionaires.

Deal with recruits on behalf of or as an agent or sponsor for any commercial enterprise. This includes encouraging recruits to do business with any commercial enterprise and/or referral to any commercial enterprises, as well as actual sales. This does not apply to the PRI or sales personnel of the NAAFI or its authorised concessionaires nor shall it be a violation to advise recruits of the service available through the NAAFI.

Collect or take money from recruits for any reason, including cleaning funds, party funds, charitable contributions, etc. (Other than those authorised by the Commanding Officer).
Cause recruits to perform any personal service.

Enter into any public or private relationship with recruits, which are not required to accomplish the training mission. This includes but is not limited to Gambling.

Consuming alcoholic beverages or in any way socially mixing with recruits on or off camp other than at approved unit activities. Off camp these activities should be avoided where possible.

Engage in any action or relationship which involves or gives the appearance of partiality, preferential treatment or improper use of rank or position for personal gain.

Engage in any intimate or sexual relationship to include, but not limited to, dating, hand holding, kissing, embracing or caressing.

Further Information:

JSP 887: Defence Strategy and Social Conduct Code to Meet Public Sector Equality

Duties. This Code of Social Conduct explains the Armed Forces' policy on personal relationships involving Service personnel.

Policy, Rules & Guidance: Standards of Conduct and Behaviour

This document sets out the high standards of behaviour the MOD requires of all its civilian staff and explains the implications of failing to meet them.

DIN 2008DIN01-289: The Civil Service Code – Nominated Officers

This DIN supersedes DIN 2005DIN02-100: PI 71/05. This DIN details the conduct expected of Civil Servants, and handling matters of conscience and reporting concerns about your work – the introduction of Departmental Nominated Officers, which should be read by all civilian Personnel, and all line managers of civilian personnel.

Learning and Instructing

This section is a brief overview of learning and instructing in Defence. It covers the Defence Systems Approach to Training, which underpins all instruction in Defence. It also sets out what Defence expects of you as an instructor and gives some tips about how you can help your students learn. Finally, there is a short section on how technology can be used in training.

The Defence Systems Approach to Training (DSAT)

Introduction

The Defence Systems Approach to Training (DSAT) Quality Standard (QS) sets out the strategic principles to be applied to all individual training provided by, or on behalf of, the Ministry of Defence.

The DSAT QS provides:

A framework against which organisations can develop and implement compliant quality systems which best meet their operational/business needs;

A Defence-wide benchmark against which the management and provision of individual training can be evaluated and good practice identified and implemented across the MOD;

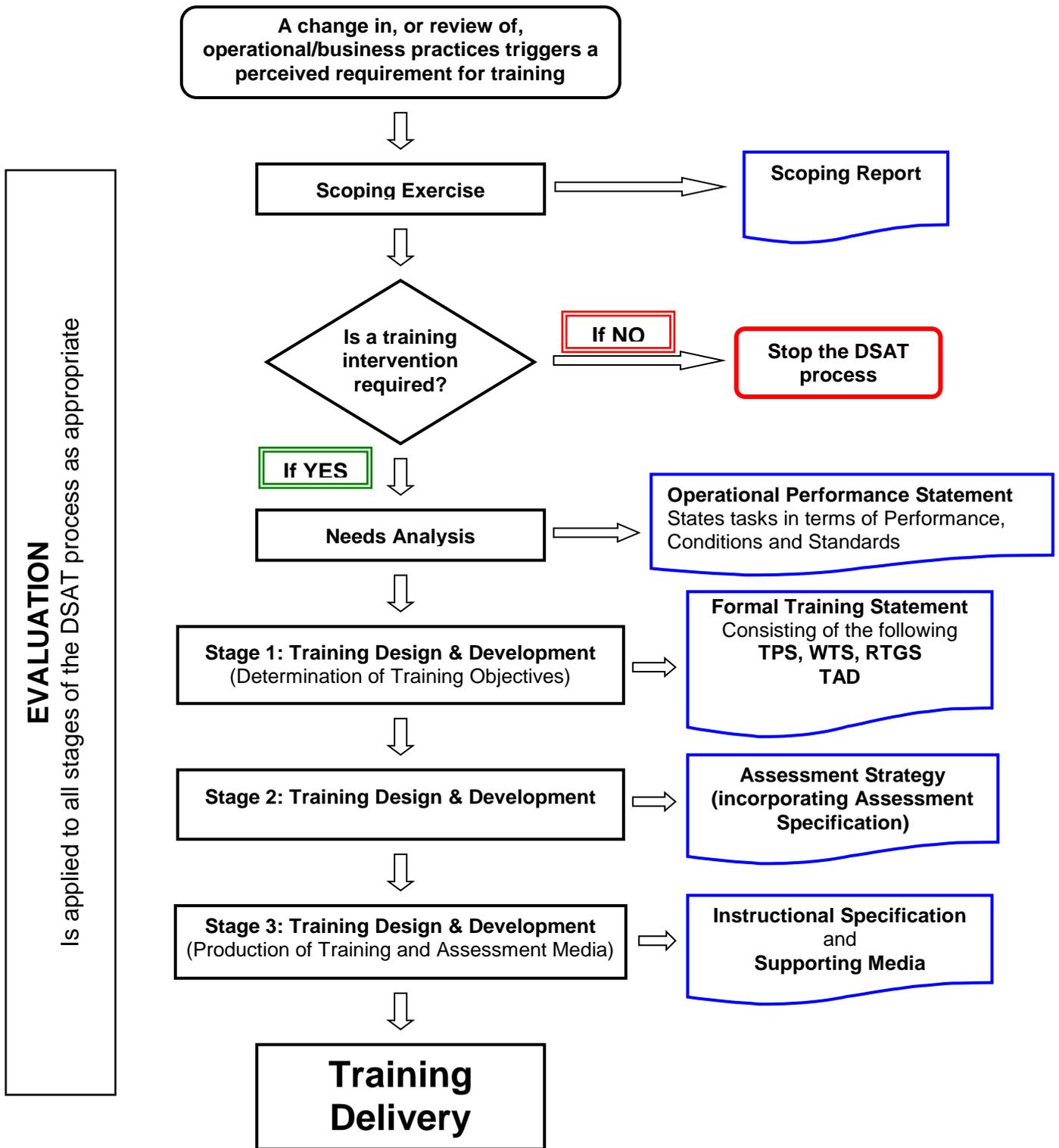
A means of ensuring that individual training is delivered to meet the operational/business requirements of the MOD.

The DSAT QS is intended to be applied intelligently in order to avoid the creation of a bureaucratic and unresponsive individual training system.

Overview of the DSAT

The DSAT is a method for organising and controlling individual training through a systematic process, illustrated by the models shown in Figures 2.1 and 2.2.

Figure 2.1 – The DSAT Process



DSAT Principal Activities

Where a change in operational or business practice (which may arise from a change in doctrine, business process, new legislation or the procurement of new capability) triggers a perceived need for training, the following principal activities shall be undertaken:

Scoping Exercise. The initial phase of the DSAT process shall be a scoping exercise. The scoping exercise shall involve an initial analysis of the training requirement and, where applicable, suggest the possible options for meeting the training requirement and make a broad order estimate of the resource implications associated with each option.

Training Needs Analysis. Once the requirement for a training intervention has been established to meet a change in operations/business, a training needs analysis shall be undertaken to ascertain the type and scope of the training required to meet the operational/business need. The complexity of the training needs analysis shall reflect the complexity of the training requirement. The outcome of the training needs analysis shall be documented.

Training Design and Development.

Training Delivery.

Evaluation of Training. Evaluation allows an organisation to monitor the impact of training and assess what has been achieved, whether it was effective and efficient, and how this has contributed to the achievement of the organisation's goals and targets.

DSAT QS Fundamental Principles

DSAT QS training shall:

Aim to prepare personnel for their current or future operational or workplace role;

Where provided by, or on behalf of, the MOD, have a clearly identified MOD Training Requirements Authority (TRA);

Be formally authorised and resourced;

Where provided by, or on behalf of, the MOD, be derived from an analysis of the operational/workplace requirements;

Be designed to achieve TOs based on the results of a training needs analysis;

Incorporate TOs that are endorsed by the TRA;

Achieve TOs by the most efficient and effective use of resources;

Incorporate an evaluation strategy;

Be evaluated for the efficiency and effectiveness of the analysis, design and delivery of training in meeting the operational/business requirements in accordance with the evaluation strategy;

Be kept current by applying the results of evaluation;

Comply with all relevant extant legislation.

The main documents involved are:

Job Scalar. This is a hierarchical diagrammatic representation of the component parts of any job. It is broken down into; Principal functions, Job, Duties, Tasks, Sub-tasks and Task elements (each of which has a unique number assigned to it for reference and cross-reference purposes).

Job Specification. A detailed statement of the activities associated with a job and of the qualifications, experience and personal qualities needed to carry it out.

DIF Analysis (Difficulty, Importance and Frequency). A method of analysing job information through the Difficulty, Importance and Frequency of the tasks within the job, with the aim of enabling decisions to be made regarding the priority and /or the necessity of the training.

Operational Performance Statement (OPS). States tasks in terms of Performance, Conditions and Standards and Training Categories)

Formal Training Statement (FTS). Consists of the following:

Training Performance Statement (TPS) Expresses Training Objectives (Performance, Conditions and Standards) to be delivered in the training unit.

Workplace Trg Statement (WTS) Training Objectives to be achieved outside the training unit.

Residual Trg Gap Statement (RTGS) The difference between the totality of training (TPS and WTS and the job (OPS). It is written in terms of resources and realism.

Defence Manual of Training Management JSP 822

Joint Service Publication (JSP) 822 – The Governance and Management of Defence Training & Education – brings together key aspects of the governance, management and delivery of Training & Education (T&E) activities within Defence. It is a joint policy that is to be followed in the single Service environment and issued at the direction of the Training & Education Policy Group (TEPG) – a joint committee representing all three Services and the Civil Service within the MOD. Ownership is with Training Education Skills & Resettlement Division (TESR), with maintenance conducted by Defence Centre of Training Support (DCTS), which supports its implementation through the delivery of training, consultancy and assurance visits.

One of the Defence Capability Lines of Development, T&E is a costly and influential activity in support of Defence Operations. The strategic direction for all Defence T&E matters is provided by the Defence Training Board (DTB), which brings together the cross-cutting training responsibilities for DCDS(Pers&Trg), DCDS(Ops), DCDS(Cap) as well as the single Services, Civil Service and other key stakeholders. In an era of extreme pressure on resources and increasing demands on our personnel, there is an even greater imperative to optimise T&E provision. To achieve this demands a thorough understanding of Defence capabilities, requirements and policies; a well designed production, delivery and optimisation model; and robust assurance policy and processes.

JSP822 directly supports the Defence Training & Education Strategy (DTES) by providing policy and guidance that ensures T&E is fit for purpose and provides effective, efficient and economic solutions to meet capability gaps. At the heart of the policy is the Quality Standard (QS), which provides the Assurance Criteria against which organisations will be audited – in sum, if the QS is applied, then the mandated policy has been achieved. Policy associated with meeting this QS is defined within the Defence Systems Approach to Training (DSAT), which provides a systems approach to the management of Def T&E and reflects good practice in the civilian training world. Guidance on recommended ways to implement the QS and DSAT, based on experience and academic theory of

learning and training management, is also provided within this JSP to assist managers and practitioners. This guidance aims to encourage coherence across Defence, and forms the basis for DCTS training, but should not stifle innovation or novel approaches that may deliver more optimal solutions, whilst still conforming to the QS.

Part 1 – Introduction and Readership

Part 2 – Terms and Definitions

Part 3 – Training management policy

Chap 1: Governance of IT & E

Chap 2: Management of IT & E

Chap 3: Assurance of IT & E

Chap 4: Defence Training Policy for Staff Delivering Formal Training

Chap 5: Learning Technologies

Part 4 – DSAT Training Quality Standard

Part 5 - Defence Training Support Manuals

Chap 1: Analysis, Design and Development of Training

Chap 3: Training Needs Analysis

Chap 4: Evaluation of Training

Chap 5: Technology based Training

Chap 6: First and Second Party Audit of Defence Individual Training

Chap 7: Methods and Media Selection Tool (MMST) User Manual

Training Delivery Documentation

Instructional Specification (ISpec). The ISpec provides the detailed information necessary to deliver a training session. ISpec's produced by the Training Development Team, developed from the Job Scalar. The ISpec ensures standardization of content and delivery.

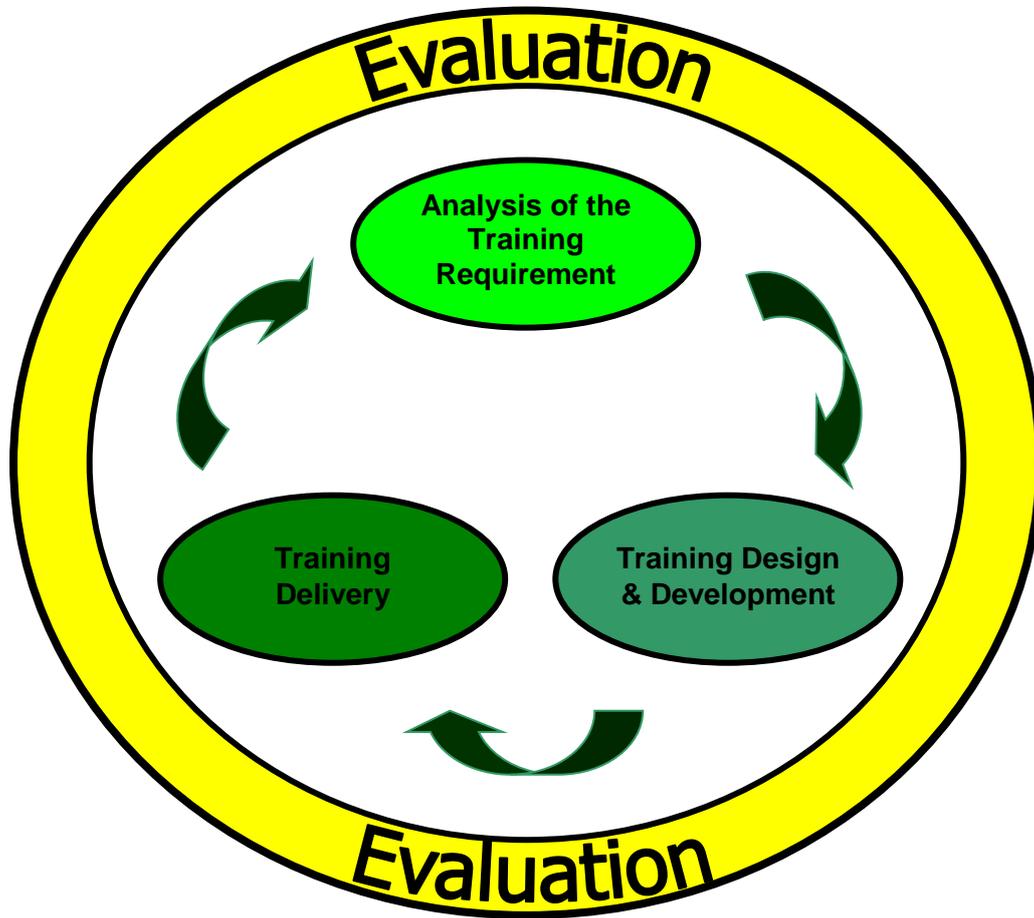
Trg Authorisation Document (TrAD). The TrAD provides admin details of how course is administered.

Assessment Strategy & Assessment Specification (AStrat & A Spec). The AStrat & A Spec provide information on how the Training Objectives and Enabling Objectives are to be assessed.

Quality Assurance (QA). Evaluation - Qualitative and Quantitative data. Training to be kept current by applying results of this evaluation. Validation – Ensures processes and products of training meet Defence requirements.

Figure 2.2 – The DSAT Model

DSAT Model



Armed Forces Policy for Remedial Training During Phase 1 and 2

The vision for Defence initial training (Phase 1 and 2) is to create an environment that attracts and retains high-quality people through the provision of training that, whilst stressing the importance of the team and team ethos, is focussed on the individual from the pre-recruitment stage to joining the trained strength. Military Training is necessarily robust, challenging and demanding as it must equip our personnel with the skills needed to work as a team and survive in the harshest environment: the high-tempo battle. It must inculcate in our people an attitude of responsibility, self-discipline and selflessness - fundamental components of the spirit and ethos that are essential to the military profession.

The 2 major components of initial training are to:

- a. Ensure that trainees learn the **skills and knowledge**, appropriate for their Trade/Branch/Corps and as a member of their chosen Service, to achieve the Training Performance Statement (TPS) so that they are prepared for their first productive tour of duty.
- b. Inculcate the right **attitudes** in terms of the **Military Ethos, values and standards** required of a member of each of the Armed Forces and ensure that all trainees embrace the disciplinary, personal and communal standards that constitute that ethos.

Phase 1 and 2 training is where trainees undertake to achieve these components and instructors continually assess trainees against specific Training Objectives (TOs) and behavioural standards to ensure satisfactory progress is being made. There will be a number who fail to achieve on occasions the required bench marks. When a shortcoming is identified, necessary measures are taken to help and encourage the trainee to improve his/her performance. The process for the management of these measures is outlined in this policy, and is known as Remedial Training (RT).

Whilst repetition of training serials may often be the most effective way of improving skills and knowledge, this is seldom the case when addressing an individual's poor attitude - as manifested by inappropriate behaviour.

Change will be achieved through a combination of factors including the reward of achievement, clarity of information, tackling of unacceptable behaviour and, most importantly, by the example set by instructors and those peers who have accepted and adopted the desired attitude.

Additional training to address inappropriate attitudes will not necessarily be effective if it just involves the repetition of a training serial. Hence, the need to be able to use alternative measures.

There are many factors which impinge upon the nature of action taken to address poor performance in trainees and this policy cannot address the specifics. The experience and judgement of instructors remain the most important factors when identifying the reason for poor performance and, hence, in determining the appropriate action. Training populations vary according to recruitment standards and the Operational Performance Statement (OPS) of their particular cohort. Measures which would be appropriate for one population might be entirely inappropriate for another. It is also important to recognise that in the early stages of training, recruits will be adjusting to military life and will take time to acquire the standards of behaviour that are expected of those in Phase 2 training, approaching front-line duty.

Poor performance may result from a deficiency of skill or knowledge, from poor attitude / behaviour or a combination of both. The problem may manifest itself as a skills or knowledge deficiency while the underlying cause is an attitudinal one, and vice-versa. An instructor's judgement is critical in determining the underlying cause and then deciding on the appropriate response that will remedy the situation. Many factors have to be taken into account, including the stage of training, the seriousness of the problem, and the performance to date of the trainee. It is vital that instructors apply their experience and judgement to the analysis of the problem to determine what action needs to be taken,

and it may well be that encouragement and reassurance are more appropriate in some circumstances than RT.

This is detailed in JSP 898 Part 2 Chapter 6.

Learning and Instructing

What is Learning?

Learning is the process whereby someone acquires the necessary skills, knowledge and attitudes in order to deal with the world successfully.

Instruction, in the Defence context, encompasses both Training and Education. Training and education are complementary aspects of the learning process. Training equips our personnel with the knowledge, skills and attitudes needed by modern battle winning forces and successful business units. Education provides the knowledge and understanding that underpins individual training; allows personnel to apply training in unfamiliar circumstances; expands the cognitive skills of our personnel that enables them to be achieve better performance; and fosters the development of ethos. In addition, education promotes a learning culture within Defence.

Learning is not an automatic consequence of teaching, reading a book, analysing a video or watching a great instructor. It involves a fundamental shift or movement of mind and it involves a relatively permanent change in the learner's knowledge, behaviour or performance. It is not just about taking in information – the learner must engage with the process.

There are different levels of learning. A useful mnemonic to remember them is **MUD**

- **Memorising.** The lowest form of learning – simply remembering facts;
- **Understanding.** Putting the facts into a bigger picture or context, or getting to grips with the ideas;
- **Doing/ Application.** Being able to use the knowledge practically is the final stage after the knowledge has been memorised and understood.

Our training needs to be as effective and efficient as possible. You should try to ensure that your students:

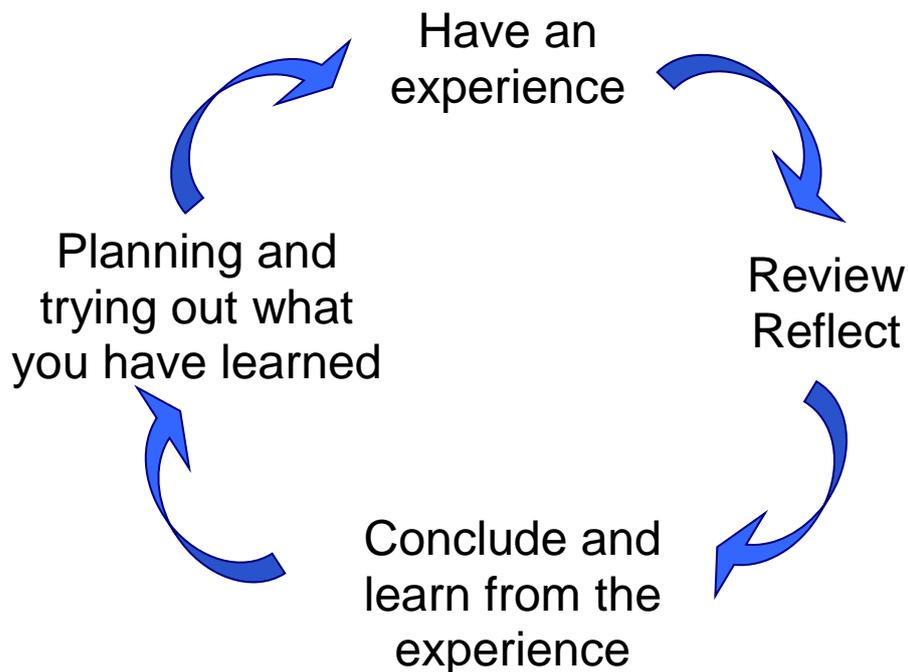
- Acquire information quickly;
- Are able to understand this information;
- Are able to apply and transfer this information to familiar and novel situations;
- Commit fewer or no errors;
- Are able to correct errors when they occur; and
- Can automatically perform the skills and tasks learned, requiring little mental effort or attention.

Types of Learner

People learn in different ways. You can best help your students if *you* adapt your lessons to match how they prefer to learn. Though there has been a lot of research into learning styles and learning preferences this section will concentrate on the Learning Styles based around Kolbs experiential learning model and the styles set by Honey and Munford.

Kolb speculated that a large amount of true learning stems from an experience. That experience can be physical or cognitive in nature. When we have an experience, we reflect on how it went both positively and negatively. We then conclude if it can be changed or has influenced previous experiences. Then we look at what or how we can change thing for the next experience.

Kolbs Experiential Learning Cycle



The learning cycle is natural and happens on a subconscious level. Our task is at times to guide and direct the process through formal or informal reflection.

From Kolb's four stage model we have derived the following learning styles. These fall into four broad categories of learner: Activist, Theorist, Pragmatist and Reflector.

Activists involve themselves fully and without bias in new experiences. They enjoy the "here and now" and are happy to be dominated by immediate experiences. They are open-minded, not sceptical, and this tends to make them enthusiastic about anything new. Their philosophy is: "I'll try anything once". They tend to act first and consider the consequences afterwards. Their days are filled with activity. They tackle problems by brainstorming. As soon as the excitement from one activity has died down, they are busy looking for the next. They tend to thrive on the challenge of new experiences but are bored by implementation and long-term consolidation. They are gregarious people constantly involving themselves with others but, in so doing, they seek to centre all activity on themselves.

Generally

An Activist will want to get stuck in straight away! Explore and experiment by all means - they will discover all sorts of things as they do so. They may then be able to help others solve their specific problems and one can call on their help to rescue you. Try to remember, however, that not everybody has their enthusiasm and drive and others may wish to approach life (and learning) a little more slowly.

Recording learning

If they need to keep notes of what they have learned, mind-mapping is a quick and visual method of recording information that is probably suited to their style of learning.

Using IT

An Activist might like to use short-cut key-combinations but will also find the toolbar buttons useful. The UNDO button will come in handy for when they are experimenting does not produce the result they intended or wanted.

Pragmatists are keen on trying out new ideas, theories and techniques to see if they work in practice. They positively search out new ideas and take the first opportunity to experiment with applications. They are the sort of people who return from courses brimming with new ideas that they want to try out. They like to get on with things, and act quickly and confidently on ideas that attract them. They tend to be impatient with ruminating and open-ended discussion. They are essentially practical, down-to-earth people who enjoy solving problems (often through trial and error). They view problems and difficulties as a "challenge". Their philosophy is: "As long as it works, that's fine." - Although they may also be keen to experiment to find better ways to do things.

Generally

A Pragmatist will appreciate having a specific task or project to work on. This will help them to focus their attention as they seek to "come up with the goods". They may find it useful to break down larger projects into smaller sections - each of which has its own problems and difficulties to be solved.

Recording learning

If they have to record information, they can find flow charts a useful way of representing what they have learned. Using flowcharts will also help them to develop a more holistic view of their work.

Using IT

A Pragmatists will probably use the toolbar buttons to get things done. They tend to use the HELP pointer to find out what these do. There are EXAMPLES and DEMOS in the HELP menu where they can often find useful hints and tips to help them get the job done. The TIP OF THE DAY can also set them thinking.

Theorists adapt and integrate observations into complex but logically sound theories. They think through problems in a logical, step-by-step fashion. They assimilate disparate facts into coherent, holistic theories. They tend to be perfectionists who do not rest easy until things are tidy and fit into a rational scheme. They like to analyse and synthesise. They are keen on asking questions and challenging assumptions. Their philosophy may be: "If it's logical then it's good." They attempt to fit everything together into a single jigsaw that encompasses "life, the universe and everything". They tend to be detached, analytical and dedicated to rational objectivity rather than anything subjective or ambiguous. They may rigidly reject anything that does not fit in with their own particular mind-set.

Generally

A Theorist will want to ask lots of questions. They find it useful to make a list of everything that needs to be learned and then tick off each item as it is dealt with. They could even grade the list (e.g.: looked at - familiar with - confident). On longer courses, they tend to benefit from sorting out a study timetable.

Recording learning

They may find it useful to keep a notebook and jot down the main points that they have learned. Dividing the notebook into sections relating to different parts of the course will also be helpful. On the other hand, they sometimes prefer to make rough notes initially and spend some time later on organising these into order.

Using IT

The Theorist will probably use the drop-down menus much of the time - which will help them to see what else the application can do. They might like to browse through the INDEX or SEARCH FOR HELP in the HELP menu

Reflectors like to stand back to reflect experiences and observe them from many different perspectives. They collect data, both first-hand and from others, and prefer to think about it thoroughly before coming to any conclusion. They tend to postpone reaching definite conclusions for as long as possible. Their philosophy is to be cautious. They are thoughtful people who like to consider all possible angles and implications before making a move. They enjoy observing other people and prefer to take a back seat in meetings and discussions. They listen to others before making their own points. They tend to adopt a low profile and have a slightly distant, tolerant unruffled air about them. When they act it is part of a wide picture which includes the past as well as the present and others' observations as well as their own

Generally

The Reflector may find it useful to spend a few minutes thinking through what it is they want to get out of the course you are taking. As the course progresses, they tend to make a note of any questions or problems that they may have, together with the answers as they discover them

Recording learning

They may find it a useful exercise to keep a reflective diary as a means of recording what they have learned. This need not take long and is simply a summary of the main points and procedures that they learned each day.

Using IT

The Reflector tends to prefer the use drop-down menus initially but they soon discover what is best for them and their style. They might like to browse through SEARCH FOR HELP in the HELP menu.

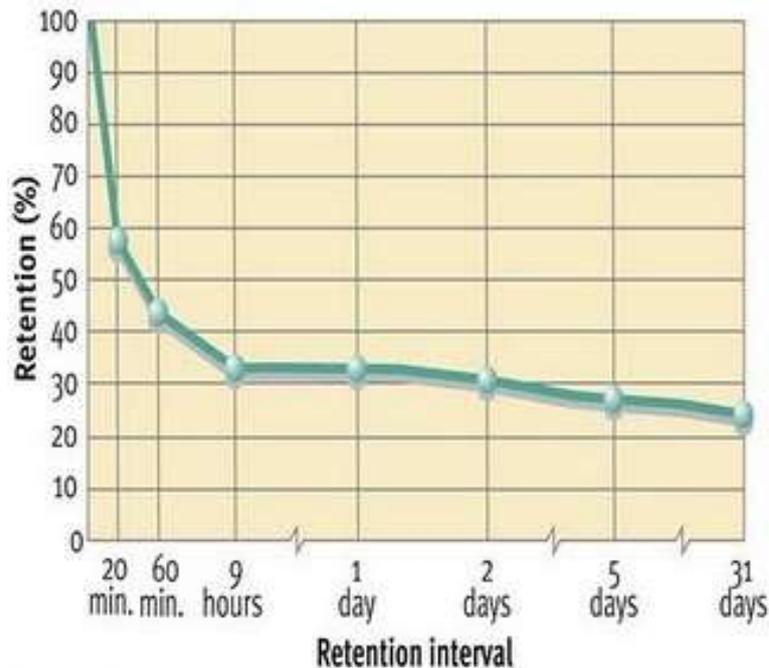
How Adults Learn

There are 3 conditions necessary for learning to occur: *practice*, *concentration* and *memory*. Other factors that affect the learning process, such as motivation and stress, are covered in other sections of the handbook.

- **Practice**
The more a student performs a skill or revises a topic, the more likely it is that he/she will become more proficient. This is a form of rote learning. To make your instruction more effective ensure your students have enough time and opportunity to practise what they are being taught so that they understand and can consolidate the new information.
- **Concentration**
Your students must concentrate and pay attention to lessons in order to learn. You need to create an environment where your students can concentrate on important information and 'screen out' distractions. Remember also that your students will not be able to maintain their attention continuously and you will have to build in mini-summaries, energisers, breaks or change activities to remain effective.
- **Memory**
Memory is the storage and retention of knowledge and skills. It is also linked to the access of the data. If a student does not transfer the information that they receive to their memory, learning has not taken place as they will be unable to retrieve it and use it at a later stage.

The speed and reliability of information recall depends on the time elapsed since the information was last used. Hermann Ebbinghaus (1885) said that 60% of knowledge learned is forgotten within an hour. It is important that you give your students plenty of opportunity to put learning into the long term memory by revisiting the material at pre-determined intervals.

Ebbinghaus' Curve – Diagram



Students can use a variety of memory techniques to help them commit accurate and retrievable information into the long-term memory.

Retention Techniques

Humans are bombarded with so much information everyday that some psychologists see the brain as designed to forget most of what we experience as it is irrelevant information.

Retention techniques are designed to help students store and recall information. It can be useful to think about memory as having two systems - the long-term memory and the working memory. Psychologists believe the process of remembering involves information passing from our working memory into our long-term memory. The long-term memory is like a filing system where permanent information is stored. The working memory is a temporary store where new information is processed until it is translated into action, stored in the long-term memory or forgotten.

How can you help your students remember information?

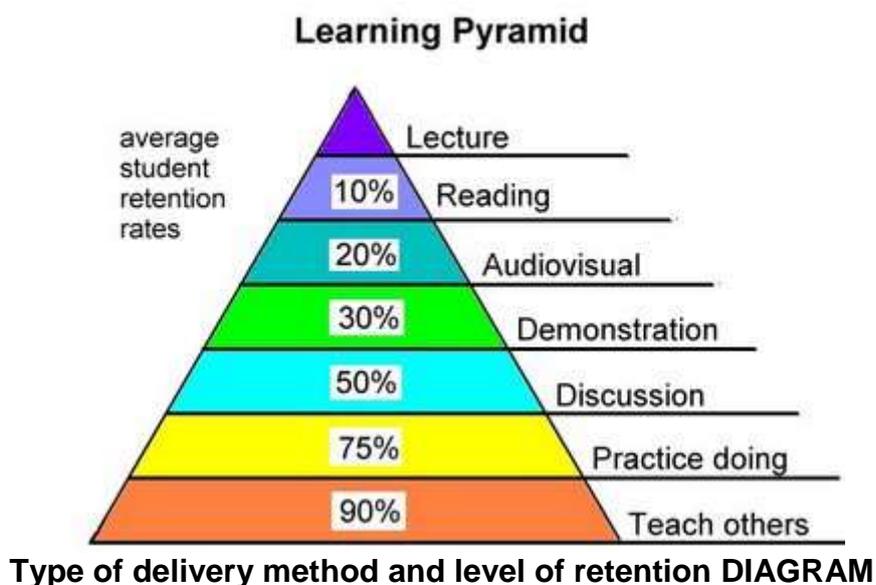
How you deliver the material will have an impact on the amount of information retained. The following may help you decide the most appropriate delivery methods:

- **Relevance.** When trying to memorise something new, a student will tend to see knowledge and skills as individual packages of information. You can help students remember information by giving it meaning and relevance, perhaps by relating it to operational experience.
- **Association.** You can also organise and group the information together in associated patterns or collections so that your students can see the relationships between lessons.
- **Revision.** Reviewing information frequently helps students remember information over a long period.

- **Primacy / Recency Effects.** Information near the beginning of a lesson is easier to recall than that in the middle (the primacy effect). Information near the end of the lesson is also easier to remember than that in the middle (the recency effect). This shows that items in the middle of a lesson or list are the most difficult to remember. You can help your students by making such items distinctive or repeating important information.

Senses. The more our senses are involved in learning, the more we remember. Using one or more of the following may help students retain information: music, colour, associations, humour, images and physical senses.

- **Action.** Getting your students to actively use the new information will make it more memorable and aid learning. Learners remember best that which they do for themselves.



Allow your students to see, listen and talk about the task. Get them to apply their knowledge by doing the task.

Remember:

See it, Say it, Hear it and Do it!

Simple tips to aid memory.

There are many ways of helping students to remember information and some students will prefer some techniques to others. Below is a list of examples of the more commonly used ways to aid retention of information.

- **Acronyms.** An acronym is a word made up of initial letters or parts of words, e.g. GRIT (Group, Range, Indication, Type of fire).
- **Rhymes.** Rhythm, repetition, melody, and rhyme can all aid memory. For example, Many children learn the letters of the alphabet to the tune of "Twinkle, Twinkle, Little Star."
- **Acrostics/Sentences.** Acrostics is when the initial letters of a list of words to be remembered are taken and made into a salient or funny rhyme e.g. Richard Of York Gave Battle In Vain = 7 colours of the rainbow.
- **Vivid Stories.** Used to remember a list of items by incorporating the items into a story.
- **Chunking.** Grouping digits, letters etc together, e.g. a list of numbers 1918106619451485 can be remembered as a series of dates or 1918 /1066/1945/1485.

- **Examples.** Real life examples can be used to aid information retention and show students how one piece of information can be associated with another.

Study Skills

For students to learn effectively, they need specific tools or techniques to assist them. While some students may have already been taught specific study skills or developed their own methods, others may need some help from you. Tips for effective study include the following:

- **Plan.** Plan and organise work using timetables and schedules, working backwards from the key dates and plan accordingly, prioritising tasks.
- **Set Targets.** Set realistic targets to help organisation and motivation.
- **Balance Work Load.** Balance work out across the week/term/course duration.
- **Study Environment.** Study in favourable conditions e.g. a quiet room. At times of revision, replicate the exam conditions, as they will then more likely be able to recall information during the actual examination.
- **Breaks.** Take frequent breaks to maintain concentration. 10-mins every 45-60 mins is a good idea.
- **Plan/Revise.** Revise topics more than once i.e. the more they practice, the more they will be likely to remember.
- **Motivation.** Determine what it is about the subject that interests them; this should aid motivation.

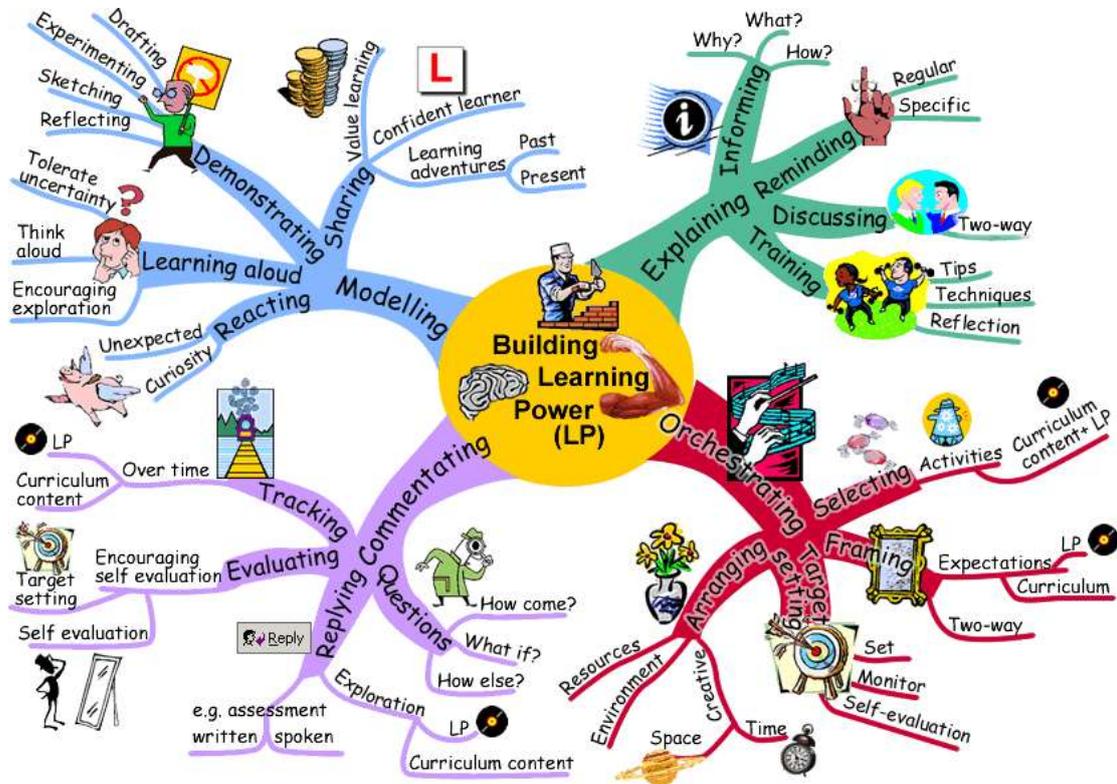
Note taking

Students will have to take notes in order to be able to learn for tests and examinations. When you are instructing you can signpost important ideas by giving clues, such as saying '*There are four main points which you need to remember...*' The three stages of note taking are:

- **Listen.** *The student listens to what has been said.*
- **Think.** *They think 'What is the main issue here?'*
- **Write.** *Students write a short note about the key points.* Your students will need to devise a system that works for them. However, there are some useful tips that may help:
- **Structure and organisation.** Headings or titles including subheadings for minor topics numbering and labels to show logical order and show how ideas and topics are related.
- **Key words.** Key words and and/or phrases help trigger the memory and may lead to other topics and ideas. These must be easy to identify within the notes so highlighting or signposting them are important.
- **Abbreviations/Symbols.** Abbreviations and symbols can save time and increase the volume of information that can be written down.

Mind Maps

This Mind Map is a very simple illustration of how the student can note Key Learning Points (KLPs) from your lesson from a general subject title. The format will be dependant upon the drivers of the individual and their preferences. Some will be stimulated by the pictograms whilst others will only want words or phrases.



Support For Specific Learning Difficulties (SpLD's)

The term "Specific Learning Difficulties" (SpLD) encompasses a range of learning difficulties which may affect an individual in their daily life. For the purposes of this section the term "SpLD" encompasses the following learning difficulties: Dyslexia; Meares-Irlen Syndrome; Dyscalculia; and Dyspraxia.

This section on SpLD policy aims to promote and provide systematic support to those personnel in the Armed Forces with identified needs to maximise their learning potential and their training. It complements the support that the MOD affords to all of its civilian staff in the Department under the provisions of the Disability Discrimination Act 1995 (DDA 95), which includes in its scope the specific learning difficulties that are the subject of this policy.

SpLD needs are not always easy to recognise and are sometimes confused with poor basic skills, because they affect the individual's learning processes, particularly in relation to literacy and numeracy. Most crucially for the Armed Forces, SpLD can have a strong impact on the individual's abilities in areas associated with: organisation; sequencing; memory; auditory and/or visual perception; spoken language; motor skills; and time management. No allowance is made during the recruiting process for personnel with a formal SpLD assessment and, because of the wide spectrum of effect, many personnel with SpLD are able to pass recruitment tests and enter the training pipeline. If left unaddressed, however, these constraints on the learning process can have profound repercussions on training effectiveness and on the individual's performance in their job. Provision of an 'inclusive learner environment' and support in terms of coping strategies for personnel with SpLD needs will enable these individuals to improve their ability to assimilate training, to cope with the demands of work, and facilitate their career progression.

Aim

To ensure that personnel in Defence with SpLD are treated appropriately and, in particular, that Armed Forces personnel with SpLD are identified, assessed and supported in a coherent and effective way.

The Approach

MOD policy aims to address the SpLD needs of Armed Forces personnel as early in their career as possible. This will maximise the benefit to both the individual and the organisation. Opportunities for SpLD screening and subsequent assessment are to be available to all within the Armed Forces and delivered by appropriately trained and qualified staff.

Procedures. Each Service (RNS, Army and RAF) must provide support to those individuals who have voluntarily come forward or have been identified by their line manager or instructors as possibly having SpLD needs. The single Services must ensure that these individuals have appropriate support and work time available to address these needs. To ensure consistency, reliability and validity in the process, the following procedures apply:

- Line managers/instructors are responsible for initially directing individuals with possible SpLD needs to the SpLD Adviser.
- The Service SpLD Adviser interviews individuals to scope their SpLD needs.
- The SpLD Adviser carries out an initial assessment using the appropriate diagnostic tool; relevant associations can provide these tools. Where appropriate (mostly because of severity or uncertainty of the specific need), a full assessment by an Educational or Occupational Psychologist leading to a formal statement of needs should be obtained.

- If an individual is diagnosed with a SpLD, the SpLD Adviser draws up the Individual Learning Plan (ILP) and, working with the line manager and relevant instructors, provides the support that has been agreed.

The main organisations are the British Dyslexia Association (BDA) and the Dyspraxia Foundation. The recognised Defence test for dyslexia is the Dyslexia Adult Screening Test (DAST).

RESPONSIBILITIES OF INITIAL MILITARY TRAINING ESTABLISHMENTS

Cmdts and CO's Responsibilities.

Cmdts and COs of Initial Training (Phases 1 and 2) Establishments are to:

- Within resources, provide appropriate support for students identified with SpLD needs, but must not compromise the agreed Training Performance Standard.
- Ensure that instructors and staff involved in student management are aware of the SpLD needs of students, and that training delivery takes these needs into account.
- Apply any appropriate exam concessions as outlined in para 9b of main body of policy.
- Ensure that the SpLD needs of students and details of the support provided to
- individuals are documented and forwarded to receiving/parent units when students leave their training establishments.
- Where appropriate, ensure learner achievement is given due recognition.

Individual's Responsibilities. Individuals are also responsible for addressing their own needs. Without direction from their line manager or instructors, individuals can seek help from the SpLD Adviser.

Systematic Support. Those individuals identified with SpLD needs must receive appropriate support at the relevant time in their training and careers. This should be delivered irrespective of Service, location and job responsibilities (subject to operational requirements). Appropriate strategies are:

- Alternative methodologies and approaches to training delivery should be actively sought and promoted, subject to the individuals still meeting the conditions and standards set within the Formal Training Statement.
- Some Service personnel who have been formally assessed as having an SpLD need, may have a recommendation by a qualified Service SpLD Adviser or Educational / Occupational Psychologist to be permitted extra time in examinations. These allowances apply only to assessments which are explicitly dependent on information processing, knowledge-based or written examinations. They do not apply to skills-based examinations.
- In the workplace, where practicable and when operational conditions permit, a review of working practices should be undertaken to identify methods to improve effectiveness in personnel with SpLD needs. Such methods may include: changes to the working environment; balance between written and non-written communication; time available to assimilate information processing; and appropriate use of information technology.

Management

Confidentiality. There is no obligation for personnel to inform their line manager of the details of their SpLD needs, but it is in their best interest to do so as appropriate support can then be provided. The following principles apply to the management of a SpLD case:

- Reports and learning support programmes that are produced on individuals with SpLD needs are to be treated as “RESTRICTED-STAFF” and are to be held by the SpLD Adviser.
- Reports should identify learning and coping strategies that will assist the individual. These strategies, but not the full report, should be provided to the individual’s line manager and to the individual’s instructors.
- If appropriate, line managers may re-assign such individuals to other tasks if this is indicated as desirable within the strategies developed by the psychologist.
- After the individual has been provided with learning or workplace support, his/her case is to be reviewed regularly to assess the effectiveness of this support.
- Except in exceptional circumstances, the SpLD needs of an individual are not to be mentioned in annual appraisals.
- Where individuals with a SpLD need are, after suitable remediation, unable to achieve the Operational Performance Statement (OPS) for their trade group or Branch, the chain of command may, in the interest of the individual or the Service, allocate the individual to another trade group or Branch. Where there is evidence that the individual’s SpLD needs are so severe that he/she is very unlikely to achieve OPS in any trade group or Branch, then a case for dismissal from the Service can be made.

Training Delivery Standards. Training for Armed Forces personnel is to be delivered without discriminating against those with SpLD needs and, therefore, those individuals delivering training must have an awareness of SpLD needs and be sensitive to SpLD issues. Course format and style of delivery should be structured accordingly, to accommodate specific learning needs. Training delivery standards are to be reviewed on a regular basis and modified where necessary to achieve maximum effectiveness.

Tracking. On identifying an individual with a potential SpLD need, clear and concise individual records, marked appropriately (RESTRICTED - STAFF), are to be kept. There must be prompt transfer of individual records when an individual is posted or detached. There must also be close liaison between losing and receiving units to ensure that adequate provisions are in place for any SpLD requirements.

Data Capture. The Armed Forces are to ensure that rigorous and auditable records of SpLD support are maintained for statistical purposes. It is the intention that the Joint Personnel Administration System will record SpLD information on an individual’s record. In the interim, the Services are to develop procedures to capture and collate SpLD data for reporting purposes.

Specific Learning Difficulties (SpLD)

For the purposes of this policy the term SpLD is defined as including the following specific learning difficulties:

Dyslexia
 Meares-Irlen Syndrome
 Dyspraxia
 Dyscalculia

It is recognised that there is a considerable overlap between the characteristics of these four conditions and, in particular, dyslexia and dyspraxia will sometimes co-exist in the same individual. In general terms, those with SpLDs have particular difficulties, which may include: spelling; acquiring fluent reading and writing skills; manipulating numbers. Any of these difficulties may result in performances below their abilities in other areas. They may also have problems in other areas like: working memory;

organisational skills; receptive and expressive language; oral and auditory skills; maintaining concentration and coordination.

For each of these SpLDs, the difficulties described will vary in degree from person to person.

Dyslexia

Dyslexia is a combination of abilities and difficulties which affect the learning process in reading; spelling and numeracy. An individual may have an inability to express his/her ideas clearly in written form and in an appropriate style. Marked and persistent weaknesses may be identified in: working memory; speed of processing; sequencing skills; auditory and/or visual perception; spoken language and motor skills. Visio-spatial skills, creative thinking and intuitive understanding are less likely to be impaired and indeed may be enhanced. Enabling or assistive technology is often found to be very beneficial.

Meares-Irlen Syndrome

It is also known as 'Scotopic Sensitivity Syndrome' and is a broadly defined visual perceptual disorder affecting primarily reading and writing based activities. Because of this, it is sometimes categorised as a form of dyslexia. Individuals will experience distortions when they look at certain materials, in particular at texts. The distortion of text includes: blurring; movement of letters; words doubling; shadowy lines; shapes or colours on the page; and flickering. In adults this can cause headaches or eyestrain, when reading. These symptoms are alleviated, by using individually prescribed coloured filters and coloured lenses. A practitioner, trained by the Institute of Optometrists to use the Intuitive Overlays Test, combined with the Wilkins Rate of Reading Test, can carry out the assessment, and prescribe the coloured overlays or coloured lenses.

Dyspraxia

An individual with dyspraxia may have an impairment or immaturity in the organisation of movement, often appearing clumsy. Gross motor skills (related to balance and coordination) and fine motor skills (relating to manipulation of objects) are hard to learn and difficult to retain and generalise. Writing is particularly laborious, and keyboard skills difficult to acquire. Individuals may have difficulty organising ideas and concepts. Pronunciation may also be affected and people with dyspraxia may be over/under sensitive to noise, light and touch. They may have poor awareness of body position and misread social cues. There is no cure for dyspraxia, only coping strategies. The Dyspraxia Foundation has developed guidelines for employers to provide support and raise awareness. Occupational therapists can devise coping strategies to help with routine tasks, while speech therapists can help with language problems and communication skills.

Dyscalculia

Dyscalculia is a learning difficulty involving the most basic aspect of arithmetical skills. The difficulty lies in the reception, comprehension or production of quantitative and spatial information. Individuals with dyscalculia may have difficulty in understanding simple number concepts, lack an intuitive grasp of numbers and have problems learning number facts and procedures. These can relate to basic concepts such as: telling the time; calculating prices; handling change. Screening tests are presently under development by bodies such as the Mathematics Education Centre, Loughborough University.

JSP 898: Catalogue of Defence Policies with Impact on Training and Education

This Joint Service Publication (JSP) is principally directed at commanders responsible for the delivery of Initial Training but it has relevance to those responsible for delivering Individual Training throughout a Service person's career. It has been developed to guide and assist in the effective implementation of policy by listing relevant policies and providing other important information and guidance in one reference document.

Functional Skills

In Sep 10, national Functional Skills (FS) qualifications were introduced in England. The FS(English), FS(Maths) and FS Information Communication Technology (ICT) qualifications will replace the Key Skills (KS) awards that form an integral part of Apprenticeship programmes. The FS awards will also be offered as optional alternatives to existing Basic Skills (BS) awards in adult literacy and numeracy. The introduction of FS awards represents a welcome opportunity for the Service. These awards bring a shift in emphasis from simply learning how to do something to choosing and using skills to solve problems. This underpins the practical approach embodied in military training and complements well the day-to-day work of Service personnel. The Armed Forces will move from using BS awards as accredited measures of literacy and numeracy skills towards the wholesale adoption of FS qualifications and provision, by Sep 12.

General Approach

The aim is to address the literacy and numeracy needs of Service personnel as early in their careers as possible to maximise the benefit to both the individual and the organisation. However, the needs of both new entrants to the Armed Services and the significant legacy needs within the trained strength must be addressed. While parallel approaches will be taken for each group, the intention is to assess individuals and, as a result, provide systematic support to achieve agreed organisational targets.

New entrants will face training that places immediate demands on their literacy and numeracy abilities, particularly during technical Phase 2 training. It is essential, therefore, that they are operating at an appropriate level on joining that stage of training. Single Services should seek to improve the FS(English) and FS(Maths) abilities of all their recruits by at least one national level and to a minimum of Entry Level 3. Additionally, all new entrants must have appropriate English Speaking and Listening (S&L) abilities in order to cope safely with initial training from the outset and, therefore, these will be assessed against minimum Armed Forces standards during the recruiting phase.

Section 2

Defence Instructional Techniques

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Theory Lesson Structure

All lessons are given a structure. It helps the instructor plan and prepare the lesson. It also helps the student learn as it gives a clear, logical and consistent sequence of information delivery.

Introduction Phase

The introduction to a theory lesson should last approximately 10% of the overall lesson time. It is your chance to get the students' attention, tell them what you will be covering in the lesson and to stamp your authority as the instructor. A well practised introduction will gain you a great deal of credibility and help you get through those first few nervous minutes of your lesson.

An aide-memoir to ensure that you cover each area of the introduction phase is the acronym:

I	Interest
N	Need
T	Title
R	Range
O	Objective
Q	Any Questions

Each of these areas must be covered in your introduction. However, you can decide the order to ensure best effect.

Interest. It is very important to grab the students' interest at an early stage and encourage or maintain that interest throughout the lesson. Interest creates attention, raises questions, facilitates class participation and is a vital ingredient in the learning process. The important thing to remember is to be enthusiastic, but do not go too far - you are an instructor, not a family entertainer. Some common methods of gaining interest are:

- Relevant experience. Talk about your relevant experience of the subject matter. A general introduction will also give you credibility.
- Topical. Has there been anything in the news recently that relates to the lesson you are about to teach?
- Scenario. Set a scenario in which the students may realistically find themselves and highlight the importance of the knowledge that you are about to impart to them.
- Humour. Appropriate, natural and non-offensive humour can be an extremely effective tool for the instructor.
- Revision. Linking back to a previous lesson to raise the students' interest can give continuity and flow to a series of lessons.

Need. Clearly state why the students need to understand to the lesson. The following may be useful pointers in finding the need:

- Ability to do the job
- Job satisfaction
- Personal pride
- Promotion - more money, better lifestyle
- Safety
- Examination

Title. The title can be the first instructional aid shown and so will set the visual tone for your entire lesson and reflects your preparation and professionalism as an instructor. For this reason you must:

Use short simple titles (Avoid long and complex titles).
Ensure that there are no spelling mistakes.
Display the Title as a signpost for the lesson.

Range. The range sets clear ground rules for the lesson. In addition to giving a brief overview of the lesson length and content, you should also state your note-taking and question policy as well as how students should address questions to you.

Objectives. The lesson's objectives clearly tell the students what they will know by the end of the lesson. The objectives should be read directly from your notes and be displayed as an instructional aid.

Any Questions. By this time you have imparted a fair amount of information, you should therefore give the students the opportunity to clarify any issues before the main development phase begins.

Main Development Phase

The development phase is where you meet your objectives by helping the students learn. This is best achieved through class participation and should take approximately 80% of the allocated lesson time.

Main points. When planning a lesson it is important to understand exactly what you want to achieve and break this down into main points and derive your overall objectives.

Key Learning Points (KLPs). Once you have written your objectives you should break the subject down into its KLPs.

Each KLP should be given depth and clarity with a combination of amplification and visual reinforcement. The amplification is tied into Vital (what they must know) Important (additional information to give clarity) and Interesting (to give contextualisation). In order to stimulate the learning and separate out the KLP's visual reinforcement via a number of media types is vital.

Logical Order. Students learning can be greatly enhanced if they make sense of the subject being taught. It is, therefore, vital that you teach the subject in a logical and structured manner.

Instructional Aids. These can range from the object or item itself to Magnetic Aids and Power-Point slides. The visual aids are used to give impact and reinforcement to your KLP. The use of colour, size and shape is very important in order to maintain interest and stimulate the students.

Class Participation. Two-way communication between students and an instructor is a vital component in the learning process. Using teaching questions to get students involved in the lesson will enhance the speed of learning and increase the amount of information retained.

Any Questions. After each KLP encourage your students to ask questions. It can help students 'keep up', shows that you are interested in their experiences and indicates that you value their contribution.

Consolidation Phase

A professional and effective end to the lesson will enhance your credibility and reinforce student learning. The consolidation should take approximately 10% of your overall time. It should NOT contain any new information. You should summarize all of the lesson's KLP's in the same order as you taught them to reinforce the lesson in the minds of the students. Display and restate the objectives to show the students exactly what they have covered in the lesson. You should then ask the students questions about *all* of the KLPs, in the same order as taught, to confirm that learning has taken place and the objectives have been achieved. You should then refer the students to relevant reference material and give appropriate links to the next lessons.

Summary. You should summarise all of the Key Learning Points of the lesson. These should be brought out in the same logical order as in the development stage. This reinforces the learning. Referring to the instructional aids during the summary will give clarity. Do not include any new information or material at this stage as this may cause confusion among the students.

Objectives. Display your objectives again to refocus the students' attention on the subject and remind the class of what was covered during the lesson.

Questions:

Test the students. You should ask testing questions that cover the entire scope of the objectives. Every objective must be met and you must satisfy yourself that they have been.

You must also give your students the opportunity to ask their own questions. This will give them the chance to clarify any points of confusion.

Reference. You must give a reference for your lesson as it shows the students where your information originated and gives the students the opportunity to study the topic further. When giving a reference you must ensure that it is:

- Readily available.
- Up-to-date and accurate.
- Displayed.

Link. You must link your lesson into the overall aims of the course or with future lessons/practical sessions/real time job. This places your lesson in a context and gives it added worth.

Final Questions. It is essential to give your students the opportunity to clarify any issues or delve deeper into the subject.

Theory Lesson Structure

Introduction

Interest
Creating the desire to learn
“the hook”.

Need
Why is this lesson
important in context

Title

Range
The rules and parameters

Objectives
Stated and shown

Any Questions
Denotes the end of phase

Development

Each Key Learning Point
developed in a logical and
progressive sequence

Teaching questions used to
develop ideas and concepts
through class participation

KLPs then given depth and
clarity with Amplification and
Visual Reinforcement

Questions encouraged at
regular intervals throughout
the development

Consolidation

Final Summary
All KLPs covered in same
order as development
(Rote aspect).

Re-State and show
Objectives

Full test of
Objectives

Any Questions

Link

Reference
Stated and shown

Final questions

Lesson Objectives

Why do we need them? Objectives are extremely important to the instructor as they provide a clear target of what the trainee will be able to achieve by the end of the lesson. The instructor can then test the objectives at the end of the lesson. The results will give the instructor feedback on student learning.

Where do they originate? Objectives should be stated in the Instructional Specification and are derived from the Training and Enabling Objectives of the course or lesson.

What should I include in my objectives? Objectives should cover three specific areas:

PERFORMANCE	CONDITION	STANDARD
A statement of what the student will be able to do by the end of a training event.	The condition(s) under which the student must complete the performance.	The standard(s) to which the student must complete the task.

If we apply this to a cycling proficiency lesson - an objective might be that **“By the end of the lesson the student will be able to cycle.”** However, this does not give us enough information about the required performance. So it would be better to specify in the following areas:

PERFORMANCE	CONDITIONS	STANDARD
By the end of the lesson the student will be able to cycle.	In light traffic. Provided with a standard bike.	Safely within the regulations set by the Highway Code.

You need to know whether a student can actually carry out the performance to the standard and under the conditions imposed at the end of the training event. Objectives must therefore be specific, measurable and achievable. It is important to accurately define the performance required.

As theory lessons are carried out within a classroom environment there is no requirement to state conditions and the standard is generally without error or correctly. These two elements are therefore generally removed from objectives as they are considered as a given. Typical **examples** of pure performance objectives used within a Theory Lesson are:

By the end of this lesson you will be able to:

State the purpose of ...
List the component part of ...
Describe the function of those parts

The above can be moulded to suit your needs.

Poor objectives – how can we improve these using the information above?

Learn how to load a magazine.

Learn about climbing.

Understand the rules of football.

Lesson Preparation

Once the subject is known it is incumbent upon the instructor to have sufficient depth of knowledge to teach it effectively. In order to fully understand the subject the instructor must themselves be trained and qualified.

Checking the objectives confirms that the lesson achieves its aim within the course and underpins the Instructional Specification. If the lesson is a Theory based one it must contain the performance aspect but does not have to include conditions and standards as these are implied by the nature of the lesson format.

Breaking the subject or lesson down into its component parts gives a logical flow and development from Key Learning Point (KLP) to KLP. Teaching logic should be the main focus as opposed to build logic.

The lesson should then be developed using the structure advocated by defence.

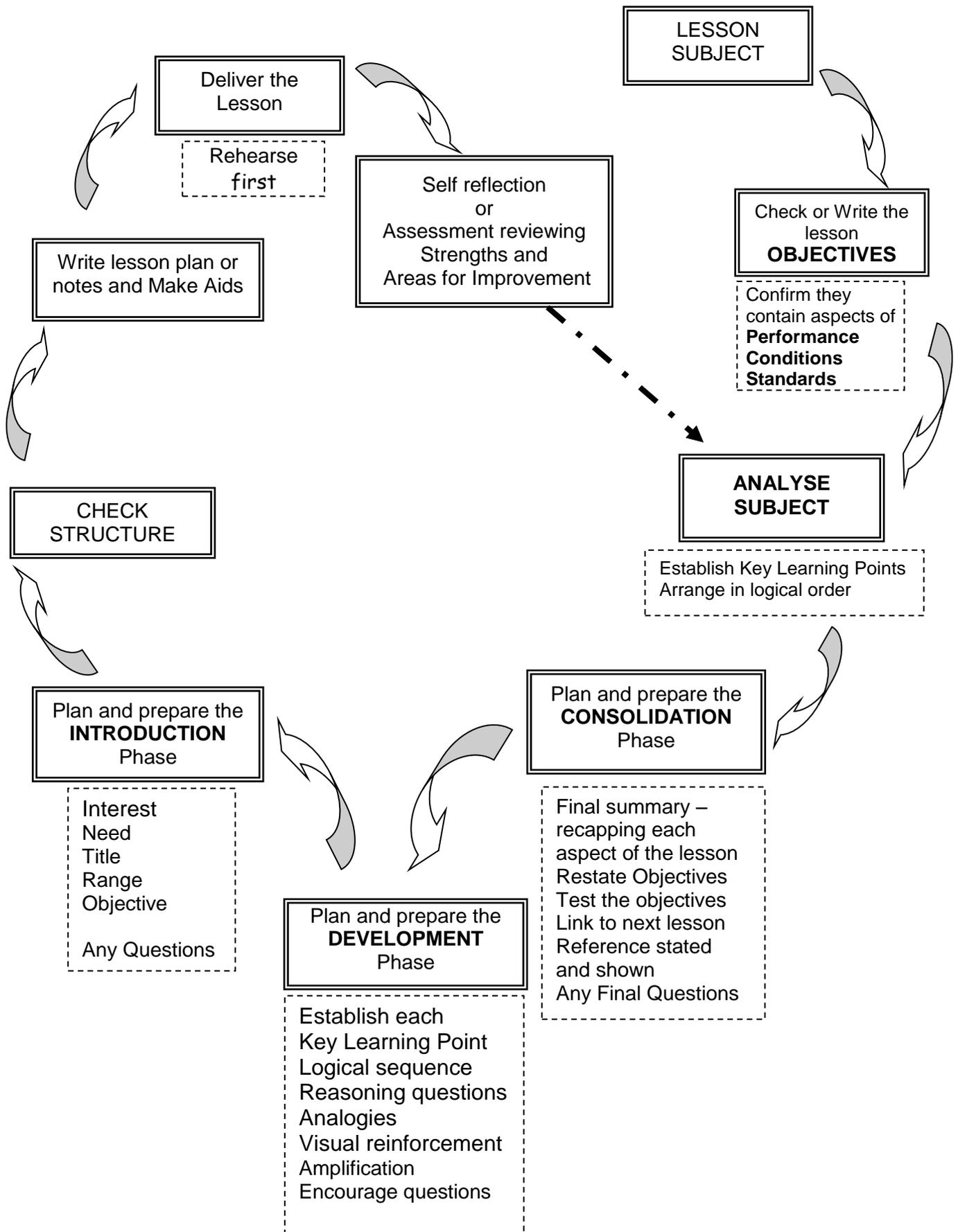
The structure should then be checked to ensure all appropriate elements have been covered and the balance is giving the learner the depth of knowledge required to achieve the objectives.

It is only after all of this underpinning work has been done to give the lesson a solid foundation that lesson plans and appropriate aids are developed.

Practice and rehearsals allow for the best learning experience.

The diagram over the page lays out this process.

Lesson Preparation – Diagram



Questioning Techniques

Questions are important because they enhance the speed and depth of learning and help students retain information. The art of good question technique is based on understanding why, how and when we use questions. Therefore, to use questions effectively, the instructor must know what types of questions can be asked, their advantages and disadvantages, how to pose questions, how to handle student answers and how to avoid common questioning errors.

Why ask questions?

As an instructor you might ask questions for the following reasons:

- To establish how much the students know in order to find an appropriate starting point for your lesson.
- To get the students to think about and explore new concepts and involve them in the learning process.
- To tap into natural problem solving aspects of learning.
- To monitor the students' progress.
- To keep the students' attention.
- To gauge whether learning has taken place.
- To check understanding.

You should be aware of the following disadvantages:

- Questions can be time consuming.
- Good question technique relies heavily on the ability of the instructor.
- Some students may feel uncomfortable or even threatened by questions.

Question Framing

Questions must be well framed to be effective. It should be clear from the question exactly what is required in the answer, so you should start your question with a question word - WHAT, WHY, WHEN, WHERE, WHICH, HOW or WHO. Make sure your questions are concise and precise and are delivered without using complicated language or technical terms.

Procedure for Asking Questions

The sequence can be remembered as the 3Ps - **P**ose, **P**ause and **P**ounce.

POSE - Initially to the whole class.

PAUSE - For a few seconds to give all the students time to think (the time will vary depending on the complexity of the question).

POUNCE - Nominate an individual or syndicate to answer the question.

Nomination

- **Nomination Policy.** When deciding on your policy, consider what will make you and your students feel comfortable. Make your policy clear in the lesson introduction.
- **Nomination Technique.** Nomination should be random. Avoid pre-nomination.

Handling Answers

Correct Answers. If the answer is **correct** use the following sequence:

- Say it is correct
- Repeat it clearly - for the rest of the class to hear
- Consider giving praise (graded or appropriate)

Incorrect Answers. If the answer is **incorrect** there is still a recommended sequence to follow. This will minimise the impact on the student who has answered incorrectly:

- Say it is incorrect
- Rephrase - ask same student again
- If correct state, repeat and praise

If the response is still wrong:

- Ask another student or the group
- If correct state, repeat and praise

However if second student or group can not get the required answer:

- Give the answer yourself
- Ensure that the original student (and the rest of the class) are happy with the answer

Praise. Ensure you praise students appropriately. If you praise every answer it will soon lose its effectiveness. However, a lesson without any praise will not further your rapport with the class.

Dealing With Class Questions

First you must decide if the question is relevant or not.

Relevant Questions. If the question is relevant:

- Repeat it clearly (so all students can hear the question)
- Give a clear and concise answer
- If covered later say so - do not skip ahead.

Irrelevant Questions. If you consider the question to be irrelevant:

- Remain encouraging – but maintain focus and control.
- DO NOT WASTE TIME- easily distracted Instructors are good sport for students.
- Offer to deal with the question at the end /after lesson.

Answering Questions. If you are unsure or do not know the answer ADMIT IT - offer to find out and come back to the student.

Types of Questions

There are many types of questions. However, we will focus on 2 main types of question used by instructors to assist the learning process: teaching / reasoning questions and testing questions.

Teaching / Reasoning Questions. Teaching questions are used to introduce new material or ideas. They should be thought provoking and challenging. Teaching questions can be used to identify problems and to devise solutions to these problems; this allows the student to discover the Key Learning Point and helps students remember. Teaching questions take the form of Reasoning Questions, Analogies and Comparisons.

Reasoning Questions

These exploit our natural abilities to identify problems and hunt for solutions. It has been postulated that this process forms part of our survival instincts and therefore we store these problems and solutions in a readily accessible area of our memories. In order to fully achieve this we divide the situation into four distinct parts:

Lead In

This area set the scene and raises awareness of the situation or factors that lead toward the problem. Verbally painting the picture in order that the focus starts to be drawn towards the subject.

Problem

This is where the problem aspect is highlighted in order to stimulate a solution based process. This is achieved through an interactive question.
(What is the problem with / if ...)

Solution

Once the problem has been established it a natural process to address a solution or work-around for that problem. It may be necessary to guide individuals towards the correct solution with further detail prior to asking for the solution. Again this is achieved through an interactive question.
(How can we overcome this problem?)

Key Learning Point

The problem and solution are both guided towards establishing a Key Learning Point. This KLP now has meaning and depth. The students may not come out with the exact terminology, however if their solution is in the ball park then take it and develop the given answer to the KLP.

The KLP is further developed with amplification; this gives the item or subject depth. This amplification comes in a number of layers from 'Vital information the students must know' Important data that can give deeper meaning and contextualisation and additional detail which can further enhance the students understanding and give clarity.

In order to enhance the learning experience for the students the KLP should whenever possible should be given further clarity and depth with some visual or auditory-digital reinforcement.

Analogies

These are also considered as teaching questions as they are used to open up the students to new ideas and concepts. An analogy guides the student to see the similarity in some respect from something they may know or are familiar with towards the new aspect or Key Learning Point.

Testing Questions. Testing questions can be used to check that the student has learned what he/she has been taught, e.g. "What is the purpose of the indicator?" There should be only one correct answer to a testing question, even if that answer is made up of several parts.

Other Question Types. The following question types exist but are less useful in a lesson. For information these questions are:

- **50/50 Questions.** There are generally only two possible responses from the students such as Yes/No, Right/Wrong. They can be useful in push or directing a lesson. However, to an

effective and thought provoking question they need to be followed up with a '**Why**' question. This removes the temptation of the student to just guess the answer.

- **Rhetorical Questions.** A rhetorical question is one that requires no direct answer. We also refer to a rhetorical question as a self answered question where you pose the question and then supply the answer yourself. These can be useful in presentations, lectures, but can confuse/frustrate students in lessons with two-way communication.
- **Sensing questions.** Sensing questions refer to what can you see, smell, hear, feel etc. Make use of these where appropriate.
- **Open Questions.** Open questions have many correct answers they can be used effectively to draw out a list but if you are using Wipe-Boards or PowerPoint with pre-prepared lists be aware that very rarely will the list of answers given by the students be in the order as on the instructional aid.

Questions to Avoid. Some questions may at times be inappropriate in a structured lesson. Some of these types of questions are:

- **Ambiguous Questions.** A question is ambiguous if it can have more than one meaning or more than one correct answer. For example: "When dog-handlers are bitten by their dogs, why must they be destroyed?"
- **'What do you think'?** 'What do you think' questions are asking for an opinion, rather than a definite answer. Asking for an individual's opinion means that whatever they say is correct as far as they are concerned.
- **Double Questions.** These are questions, which are really two questions one after the other; therefore they require more than one answer. These may lead to some confusion on the student part and on yours. The students may not know which question to answer first and you cannot be sure which one they are going to answer.

Manage Instruction

Introduction

In a teaching situation the instructor must be aware of and control several factors at any one time. These can be broken down into two main areas: The Learning Environment and Themselves as the instructor.

Instructor Qualities

We can all recognise what we consider to be good qualities in other instructors even though instructors' styles can be very different from one another. What we need to consider are the common things that make instructors effective in terms of how they project themselves. An instructor has more impact and influence on the effectiveness of the lesson than any factor or indeed aid. Listed below are some of the qualities that a good instructor should be aware of:

- **Confidence.** You need to have 2 types of confidence to be fully effective – confidence with the material that you are instructing and confidence in your abilities to deliver that material. The first only comes with really knowing your subject and the second comes with practice and experience. Rehearse and prepare new material until you are fully satisfied with it.
- **Mannerisms.** Avoid anything that could be a distraction to the students. This may be something repeatedly said such as “ok” or “right” or constantly jangling keys or coins in your pocket or pacing up and down over the same area. Whatever the distraction, it won't be long before the students pick up on it and they are more likely to count these incidences than listen to your lesson. **Tip** – a video recording of yourself can help you to spot these.
- **Eye Contact.** Ensuring that you look at your students as you deliver the lesson, try not to be script bound, rehearsal is a good way of mitigating this.
- **Enthusiasm.** An enthusiastic manner adopted by the instructor can have a greater effect on the learning process than any other quality. It has the ability to make a mediocre lesson into a good one and conversely, lack of enthusiasm can turn a good lesson into a poor one. (Remember that enthusiasm will generate its own positive body language preventing 'negative vibes' from becoming barriers to learning).
- **Conduct & Behaviour.** Always ensure that your delivery is compliant with the Defence Equality and Diversity policy. Should you need to swear or show material in which swearing occurs ensure it is contextualised.

Classroom Environment

Having dealt with a variety of instructional aids, some thought must be given to the actual classroom environment where these aids will be utilised.

Questions to be asked are: -

- Can all students see the display media (wipe board) clearly? Are there reflections from lights or windows that could cause glare such that some students may not see the information displayed?

- Are there any displayed distractions on the walls that are irrelevant to the lesson that could be removed temporarily?
- Do you have an area in which you can place any aids out of sight of the students until they are required for use? Or place any aids after use if they may form a distraction for the remainder of the lesson.

Student - Instructor Relationship

It is important to remember that as an instructor you will be training adults, however young they appear to you. Creating and maintaining a good relationship with your students is obviously very important to them and to you. You should be able to create a balance between a relaxed, respectful atmosphere from both sides and also maintain order so that learning can be achieved. It is important not to patronise students or belittle them, as this will only cause resentment and possibly confrontation. It is best to create an atmosphere in which both the students and yourself will want to return to. It is up to you as the instructor to create this atmosphere. It is wrong to assume that this is easy and that there is one correct way to achieve a good rapport but here are a few pointers to consider:

- Do not allow your desire to be friendly come between you as the instructor and your students. As an instructor you have an important role to fill.
- As an instructor you need to control the group, not allow them to control you as this can cause resentment among the other students.
- Do not be afraid of taking action, which you may view as unfavourable, if it is in the interest of the class. Your relationship with your students should be viewed from the long-term perspective not the short term.
- Do not rush to the conclusion that the class is out to get you, try to judge each situation as it arises.
- Do show that you have respect for the students as adults and individuals with experience and a valuable point of view. It is easy to assume that a person is a certain type and if you treat them as such it can become a self-fulfilling prophecy.
- Do not talk over or under the heads of the class - this will appear patronising.

Instructional Aids

An 'instructional aid' is any object, item of equipment or display system that assists the instructor in helping the students learn. Training resources available to the instructor as standard in the classroom can vary widely from a basic wipe-board, to models or the actual item or component. Students tend to learn best by having a variety of stimulus by seeing, listening and doing. Training resources and instructional aids can help the instructor enhance the learning process by allowing students see and listen to instruction as well as take part in activities.

Uses. Instructional aids enable the instructor to portray instantly and with impact, things that are difficult or impossible to convey verbally. If used effectively they can save time, create interest, help students remember things and bring variety to a period of instruction.

Selecting an Instructional Aid. Instructional aids can be expensive, take time to prepare and can reduce instructor flexibility. If used incorrectly they can confuse the student. Accordingly, when selecting an instructional aid it is important to answer the following questions:

- Will it enhance the student learning?
- Will it give clarity?
- Can I manage just as well without it?
- Is there a simpler aid that will do the job?

Wipe-Boards

Uses. The wipe-board is ideal when used as a flexible support tool to quickly explain something that would either be difficult or time consuming to explain verbally. It can be used for text or diagrams, provided fine detail is not required. It can also be used as a jotter and is especially useful for calculations and flowcharts where flexibility and the ability to quickly erase or backtrack is necessary.

Advantages and Disadvantages. The wipe-board has several advantages: it is relatively cheap and easy to use, reliable and flexible. It provides excellent contrast and colour definition. On the other hand, board-work can get messy, it can be slow to use, and it can reduce eye contact with students. Some thought has to be given to the positioning of wipe-boards, as their surfaces are reflective.

Another disadvantage is that student inputs either have to be left displayed which is a potential distraction throughout the rest of the lesson or wiped off. Wiping student inputs off then means that they cannot be referred back to if required, such as during mini or final lesson summaries.

Writing on the Wipe-board. It requires some control that does need to be practised. The general rule is – unless your longhand writing is clear, always print text. **Tip** - It is often better to keep the use of capitals to titles and headings. **Tip** – use a yellow pen to draw hidden guidelines for text and diagrams before the students arrive.

- **Letter Size.** To be seen at ten metres, capitals should be at least 6 cm high and the body of lower case letters should be at least 3 cm.
- **Spacing.** Cramped writing is difficult to read, therefore allow at least 5 cm between lines of text.
- **Key Words.** When key words or terms are used, they should stand out. This should be achieved by a change of colour or emboldening of the text.

Colour. Black or blue is generally best for general text. Remember that colour has meaning and convention so consider the use of red and green as they may assume some significance.

Common Faults.

- Standing in front of wipe-board and obscuring the information.
- Running out of space for text or diagrams
- Too much information.
- Talking to the board instead of the students

The Magnetic Board - Many wipe-boards are also magnetic

Uses: Magnetic Boards can be used to build up block schematic diagrams; as a temporary display of posters charts and diagrams; to depict movement (e.g. changing the position of aircraft in a formation); to display lists where the order can be re-arranged later in the lesson; and for quick display and removal of information. (**Tip** – for recap purposes, have components with separate labels; in this way, only the labels need removing prior to testing).

Advantages and Disadvantages. Magnetic aids are clean to use, they are extremely durable when covered in 'fablon' type material and can provide high visual impact. They can speed up a presentation because of their ease of use and a wide variety of commercial magnetic materials are readily available. However, aids can be expensive and time-consuming to create.

Computer Programs

There are a number of computer programs that lend themselves to the learning environment and many lessons are based on MS PowerPoint. Some points to note when constructing a PowerPoint presentation are:

- Colour of the slide (both background, text and pictures) needs to be 'easy on the eye'. It is recognised that a blue background with yellow writing is deemed to have a good contrast and aid auditory digital input.
- Text size and quantity needs to be considered. It must be clearly seen by all students and we should avoid over cluttering the slide.
- 'Effects' that can be achieved within the program can be distracting.
- Font type needs to be appropriate for students with SpLDs. The recommended fonts are Arial and Comic-Sands. These should be kept simple to aid with word shape and patterning recognition, therefore avoid underlining and the use of block capitals.

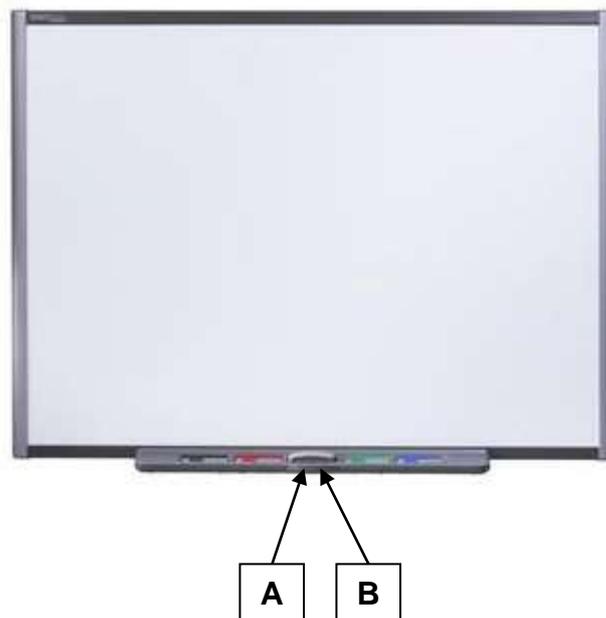
It should be remembered that these programs are an aid to the learning process and should not drive or take over the lesson.

SMART Boards

These are interactive boards that are linked into computer generated presentations. They allow for the lesson to be interactive and develop student participation. Though not specifically designed for the learning environment they do give the instructor a wide range of options to make the visual reinforcement relevant and give it impact. If you are to use one of these you should seek out specific training on the model that you are to use.

Here are some basic points to allow you to get started and experiment using the equipment.

- Touching the screen with your index finger and leaving it on the screen when moving it around is equivalent to using the mouse and moving the cursor around.
- Single tapping or double tapping any where on the screen is the same as single or double clicking the left mouse button.
- A mouse right button click can be achieved by first pressing button 'B' (see figure 1). The next screen touch will be the equivalent of pressing the right hand mouse button.
- Pressing button 'A' (see figure 1) will bring up a keyboard on to the screen. This is a floating window and can be moved anywhere around the screen.
- To accurately reflect where your finger is touching the screen you can synchronise the screen by pressing buttons 'A and B' simultaneously. Then follow the on screen instructions.
- To electronically write on the screen use the 4 colour coded pens adjacent to the buttons A and B. Only pick up one pen at a time and only have one point of contact on the screen. i.e. Do not rest your hand on the screen.
- To erase any writing, replace pen and pick up and use board rubber, which is again adjacent to the buttons A and B.



Learning Technologies

Methods and Media Selection

Emerging technologies have been available for many years however guidance to support their use has been sadly lacking and it is not clear how these new technologies compliment traditional methods and media. Over the last few years there has been considerable development of the concept of Blended Learning.



The JSP 822 Glossary defines Blended Learning as:

"A blended learning solution combines educational and training methods, media and environments to increase learning effectiveness and efficiency to meet specific training and education needs. These solutions can then be considered and prioritised within practical constraints such as cost, time, political and legal"

The Methods and Media Selection Tool (MMST) has been designed to assist instructors with "Blending Learning" and a suite of tools including e-learning, manuals and a decision making tool are available on the DLP. It has been developed to meet the following requirements:

- Includes all current and new emerging technologies.
- Also encompasses traditional learning methods.
- Flexible.
- Easy and fast to use.
- Easy to update.
- Reflects MOD guidance.
- Produces documentary evidence to support decisions.

Benefits of using the MMST to support decisions on methods and media will include:

- The most effective methods and media are selected.
- The most cost efficient solutions can be considered.
- Students experience more engaging learning.
- Prioritisation for funding is clearer.

The MMST first stage is to find which methods of delivery for the learning would be most appropriate. An example of a method of delivering learning is giving a lecture. This section will describe in detail the different methods, their advantages and disadvantages and examples of how they can be applied.

Once the most appropriate methods for the training have been found, there will be choices of various types of media that can be used. For example, if discussion is seen as an appropriate method, the media choices could include:

- Residential classroom.
- Virtual classroom (includes real time video and/or audio).
- Chat room (instant text messaging).
- Online forum.

Throughout the Methods and Media Selection Process there may be constraints that limit the options available. These should be considered at all times so as to avoid nugatory effort. Examples of constraints are given below:

- **Financial:** budget limitations may reduce the options available - for example a bespoke solution by a commercial e-Learning development company will be much more expensive than an in-house solution.
- **Time constraints:** if a solution is required quickly, Commercial Off The Shelf (COTS) packages may be the only option.
- **Accreditation and Security issues:** mobile platforms such as mobile phones and iTouches have rigorous security criteria that need to be overcome and could limit functionality and delay implementation.
- **Environment:** limitations to the learning environment, including the availability of PCs will constrain options

Methods Selection

In this section the 11 different methods of delivering learning will be explained. These are defined in JSP 822 DTSM 6. For each method, its advantages, disadvantages and examples of media applications are highlighted.

Method and Definition	Advantages	Disadvantages	Possible Media
<p>Discussion: "A group activity usually led by the trainer in which the participants examine suggestions, attitudes, ideas and solutions to problems."</p>	<ul style="list-style-type: none"> • Maintains interest. • Relaxed atmosphere for learning. • High level of student participation and development of opinions. • Shares experience. • Mature, co-operative way of learning. • Increases trainee commitment. • Experience and knowledge of trainees can be drawn out. • Good for attitudinal training. • Best employed in support of other methods and to reinforce main points drawn out of other sessions. 	<ul style="list-style-type: none"> • Requires control by a skilled instructor • Small groups only. (Under 12). • Requires high level of skilled communication. • Time consuming if not properly structured. • Need homogenous group for effective discussion. • Additional syndicate rooms required. • Required learning outcomes not guaranteed. 	<ul style="list-style-type: none"> • Classroom • Telephone Conference • Video Conference • Webinar • Online Forum

<p>Lecture: "A talk or presentation usually supported by visual aids in which information about practices, procedures and policies are described and explained to the audience."</p>	<ul style="list-style-type: none"> • Presents facts rapidly. • High concentration of information. • Large audience. • Easy to plan. • Trainer has complete control over content and sequence in which the material is presented. • Suitable for knowledge based training. 	<ul style="list-style-type: none"> • Mostly one-way communication. • Little student feedback. • Audience impassive. • Inflexible. • Poses problems for skill teaching. • Skill demand on presenter high. • Student retention is likely to be very low. 	<ul style="list-style-type: none"> • Classroom • Lecture Theatre • Video Conference • Webinar
<p>Seminar: "Meeting of interested parties or experts in a particular field."</p>	<ul style="list-style-type: none"> • Gathers together experts from many fields, therefore economical. • Stimulates active participation. • Permits adaptive instruction. • Can lead to innovative ideas. 	<ul style="list-style-type: none"> • Audience tends to be passive. • Requires lengthy question time to be valuable. • Requires highly competent instructors. • Poses evaluation problems. • Danger of learning nothing. • Not suited to new or inexperienced trainees. • Requires some "expert" knowledge. 	<ul style="list-style-type: none"> • Classroom • Meeting Rooms • Lecture Theatre • Video Conference • Webinar
<p>Simulation: "A means of reproducing, in a specially created environment, a representation of the real working conditions to enable a student to acquire and practice with minimal risk some of the Skills, Knowledge and Attitudes required in their job."</p>	<ul style="list-style-type: none"> • Trainees can practice in a realistic and safe environment. • Can be cheaper than the real thing. • Good for procedural training, multi tasking and attitudinal training. • Can reduce need for On the Job Training (OJT). • Risk-free environment. 	<ul style="list-style-type: none"> • Can be very expensive. • Requires careful planning. • Requires scenarios to be developed. • Requires good briefing and debriefing skills to be employed by instructors 	<ul style="list-style-type: none"> • Real World • High End Sim • Emulator • Part Task Trainer • 3D World • Serious Game
<p>Tutorial: "Structured training which is conducted on a one to one or small group basis. Can be coaching or even mentoring."</p>	<ul style="list-style-type: none"> • Small group, or even 1:1, high level of learning. • Suitable for complex learning skills. • Easy to determine 'gaps' in knowledge. • Stimulates active participation. • Permits instructor to adapt the instruction as required. • Constant feedback for student. • Long term relationship built between instructor and student 	<ul style="list-style-type: none"> • Costly in terms of time and manpower. • Requires highly competent and knowledgeable instructors. • Requires the student and instructor to be compatible. 	<ul style="list-style-type: none"> • Classroom • Video Teleconference • Webinar • Chat Room • Teleconference • Forum • Webcam • 3D World

<p>Demonstration: "An illustration by live performance of a task, skill or procedure accompanied by an explanation by the trainer."</p>	<ul style="list-style-type: none"> • Shows real situation. • Can be repeated. • Saves time and talk. • Adds variety. • Explanations more concrete. • Minimizes damage and waste. • Can be presented to large groups. • Easy to attract and retain interest of trainees. • Delivery can be adapted to suit level of group. • Student attention is likely to be much greater during a demonstration than in a lesson or lecture. 	<ul style="list-style-type: none"> • Intricate/rapid procedures difficult to view: although close up video possible. • Equipment cost. • Requires skilled demonstrator. • Needs careful planning. • Requires careful preparation and rehearsal. • Requires equipment and visual aids. • May be time consuming to gather materials, prepare and clear up. 	<ul style="list-style-type: none"> • Classroom • Video Teleconference • Webinar • Webcam • Vodcast • Lecture Hall • Visualiser • Augmented Reality • 3D World
<p>Theory Lesson: "Most used and versatile method . Ideal for teaching facts and mental skills. The structure of the lesson allows for a high level of interaction between trainer and learners through question and answer, practice and the giving of feedback"</p>	<ul style="list-style-type: none"> • Flexible: for all classroom topics. • Student can participate. • Permits control over content and sequence. • Encourages trainee involvement. • Student achievement easy to monitor. • Learning and retention are stimulated by active class participation. • Can be incorporated with most other methods. 	<ul style="list-style-type: none"> • Success depends upon good instructional techniques. • Requires detailed preparation to ensure correct procedures are shown. • Requires equipment and aids. • For effective student participation the size of class must be limited. • A class size of between ten and thirty is ideal. 	<ul style="list-style-type: none"> • Classroom • Video Teleconference • Webinar • Webcam • Vodcast • Lecture Hall • Visualiser • Augmented Reality • 3D World • Question Polling • Smart Board • Whiteboard
<p>Practical Lesson: "A procedure or skill is described and demonstrated to the students who perform the skill under supervision."</p>	<ul style="list-style-type: none"> • Close approximation to operational situation, reducing OJT. • Builds confidence with equipment. • Enables skill evaluation. • Reduces damage and waste. • Promotes safety. 	<ul style="list-style-type: none"> • Requires tools and equipment which can be expensive. • Requires skilled instructors. • Requires large blocks of time. 	<ul style="list-style-type: none"> • Classroom • Workshop • GFE • EPSS • IETM
<p>Self Study: "This normally takes the form of prescribed reading, project work, and case study, set assignments or correspondence courses. Can be completed online including e-learning."</p>	<ul style="list-style-type: none"> • Encourages self-disciplined approach to work. • Can be arranged out of hours. • Students work at own pace. 	<ul style="list-style-type: none"> • Difficult to monitor. • Is not suitable for all students, especially those who have not studied on their own before or who have learning difficulties. • No immediate feedback • Requires self discipline on student's part. 	<ul style="list-style-type: none"> • Paper based • Serious Game • Vodcast • E-learning (CBT) • Mobile Learning • Podcast • Web Quest

<p>Case Study: "Can be used as part of self-study or role-play. Students are required to study a given scenario or data before participating in group or individual tasks."</p>	<ul style="list-style-type: none"> • Requires students to make discoveries and decisions based on given data/scenarios. • Useful exercise to reinforce learning. • Increases coverage of material. • Reduces classroom time. • Reduces instructor interpretation. 	<ul style="list-style-type: none"> • Can involve self study or group participation and therefore requires some maturity. • Can pose evaluation problems. • Produces non-standard results. 	<ul style="list-style-type: none"> • Paper based • Serious Game • Vodcast • E-learning (CBT) • Mobile Learning • Podcast • Web Quest • Forum
<p>Role Play: "Students act out scenarios taking on various roles and tasks. Can be used as part of simulation."</p>	<ul style="list-style-type: none"> • Can portray attitudes more easily especially if coupled with discussion at the end of role-play. • Helps the players and audience gain insight into own feelings and responses to situations. • Gives the students confidence for approaching the real situation. 	<ul style="list-style-type: none"> • Only successful for limited circumstances. • Small numbers required. • Need maturity on the part of the students. • Requires careful planning. • Requires skilled trainer. • Required learning outcomes are not guaranteed. 	<ul style="list-style-type: none"> • 3D World • Webcam • VTC • Classroom • Forum • Teleconference

Media Selection

2. From the Methods Selection stage you should now have a clear idea of which methods will be most suitable for your training or education requirement. For example you may have a result for your course that includes: 10% Discussion, 50% Theory Lesson, 30% Self Study and 10% Case Study. In the Media Selection stage you will explore appropriate media for each of the methods from the previous stage.

Media	Advantages	Disadvantages	Examples
Audio "A variety of formats for delivering sound either through speakers or headphones"	<ul style="list-style-type: none"> • Cheap to produce. • Easy to update. • Realistic. • Easy to operate. • Flexible. • Realism. • Does not disadvantage poor readers. • Uniform instruction. 	<ul style="list-style-type: none"> • Must provide realistic representation of environment. • Pure audio has low retention rate compared to other media, best used in conjunction with other methods and media 	<ul style="list-style-type: none"> • Tape • CD • MP3 • Podcast
Augmented Reality "A combination of a person's real world view and a computer generated virtual scene that augments the world with additional information."	<ul style="list-style-type: none"> • Can negate the requirement for a tutor. • Allows GFE to be supported electronically. • Can be used at point of need. • Material may be reusable as a job support aid 	<ul style="list-style-type: none"> • Cost of hardware, software and development. • Currently immature technology. • Long development time. 	<ul style="list-style-type: none"> • Heads Up Display. • 3D Models via web cams
Chat Room "Synchronous text chat between students and instructors in an online environment"	<ul style="list-style-type: none"> • Synchronous text communication over the web • Easy to learn and use • Retains a record of the discussion • Low bandwidth requirement compared with video and audio • Open source (free) chat software available 	<ul style="list-style-type: none"> • Requires fast typing skills and literacy • Easy for discussions to get out of sync and participants to get confused • Needs to be monitored and controlled • Requires specific skills for instructors or facilitators to ensure maximum participation 	<ul style="list-style-type: none"> • MSN • Moodle Chat Room • MIRC (Microsoft Internet Relay Chat)
Classroom "Physical building for training with a capacity of normally up to 30 students." (For the purposes of the MMST, "Classroom" media combines all types of training in a building.)	<ul style="list-style-type: none"> • Inter-personal allowing physical interaction amongst instructor and students • Allows clear sight of body language • A more comfortable environment for "technophobes" 	<ul style="list-style-type: none"> • High initial purchase cost • Ongoing maintenance costs such as equipment and utility bills • Requires students and instructors to be in the same place at the same time • Number of students limited by the size of the classroom 	<ul style="list-style-type: none"> • Theory Classroom • Workshop • Laboratory • Syndicate room

<p>Computer Assisted Instruction (CAI) "CAI is the use of a computer as an aid to the instructional process. The computer is usually under the control of the instructor. Included in CAI are electronic reference databases of various forms of simulations, and electronic presentation media."</p>	<ul style="list-style-type: none"> • Flexible. 2D or 3D. • Good for demonstrating complex dynamic systems. Powerpoint slide shows are quick and easy to produce. • Slide amendment easy. • Constant good quality. • Allows complex drawings to be broken down or exploded thus simplifying the underlying principles behind the system. 	<ul style="list-style-type: none"> • Cost increases with complexity, especially dynamic productions. • Computer literacy and resources required to produce and execute. • Can be boring if used too much. • With CAI, there needs to be an instructor present if learning transfer is to be guaranteed. • CAI does not replace the human tutor, it merely assists them. 	<ul style="list-style-type: none"> • PowerPoint • CourseBuilder
<p>Computer Based Training (E-Learning) "CBT is the use of a computer as an interactive device with an embedded training strategy in which there are specific programmed responses that seek to aid learning. The computer primarily acts as a tutor/instructor and the trainee interacts directly with the computer."</p>	<ul style="list-style-type: none"> • Individualised tuition. • Student centered and self paced. • Guaranteed learning transfer. • Maximum trainee involvement in responding to stimuli presented on the screen. • Consistent quality of instruction. • Student retention of material can be high. • Lots of COTs solutions available. • Good for students with low motivation. • Suitable for mixed ability groups. • Suitable for teaching procedures and knowledge based learning outcomes. • Ideally suited to stable course content. • Immediate feedback to students. • Suited to procedural and knowledge based training • Can be used for attitudinal training if scenario based and media rich. 	<ul style="list-style-type: none"> • Requires careful analysis and design. • Can become dated very quickly. • If trainees reading ability is limited, then it may not be feasible to use simple CBT. • Long development time. • Assumes student population is computer literate. • Possible aversion or fear of learning through this media. Not suitable for physical skills training. • Costs increase with complexity. • Lack of human interaction. • If linked to platform equipment may require to be updated in accordance with incremental acquisition programme. • May lose face validity if "running " slower than latest models. 	<ul style="list-style-type: none"> • Basic Page Turner. • Rich media files
<p>Emulator "A simulator which is constrained to respond in a predetermined manner. Such computer- based devices may be</p>	<ul style="list-style-type: none"> • Allows students to experience and gain idea of actual situation. • Environment and teaching situation controlled. • Can be less expensive than a simulator. • Emulator trained personnel 	<ul style="list-style-type: none"> • Can be expensive. • Requires intelligent tutor to brief, monitor, and debrief for learning transfer to occur. • Incremental acquisition may require several updates of software. • Operators trained on 	<ul style="list-style-type: none"> • Flash Instrument Trainer

<p>used in CBT or CAI modes. They do not have to be high fidelity representations of the real equipment."</p>	<p>perform well on transfer to operational equipment.</p> <ul style="list-style-type: none"> • Can provide cues associated with forced feedback mechanisms. • Best results are obtained if students use real equipment shortly after emulation training. 	<p>emulators may not be initially as fast as operators trained directly on the equipment.</p> <ul style="list-style-type: none"> • Usually requires some training on GFE after emulation. 	
<p>Electronic Performance Support System Media (EPSS) "An electronic device which provides information, software tools and procedural knowledge, already available within the organisation, to an employee at their moment of need, in order to enhance their performance of the task in hand."</p>	<ul style="list-style-type: none"> • Reference material available as a result of Def Stan 00/60. • Provides reference and learning material at point of need. • Job aid, which also facilitates learning while doing, with high probability of learning transfer. 	<ul style="list-style-type: none"> • Cost. • Hardware specification must support EPSSs. • CBT material requires careful analysis and design. • Not suitable for initial training. 	<ul style="list-style-type: none"> • PDAs • PSPs • Netbooks
<p>Forum "An online website where users can create and reply to text based discussion threads asynchronously (not in real time)"</p>	<ul style="list-style-type: none"> • Discussions are captured for others to review and partake • Easy to set up • Easy to learn who to use • Allows sharing of a variety of media such as docs and graphics 	<ul style="list-style-type: none"> • Needs to be monitored • Can spread bad practice if not controlled • Requires a certain knowledge of IT and the web • Users may need to be motivated to post on the forum <p>"An online website where users can create and reply to text based discussion threads asynchronously (not in real time)"</p>	<ul style="list-style-type: none"> • Bulletin Boards • FAQs
<p>Government Furnished Equipment (GFE) "In a training context this is the taken to be the actual equipment found in a unit or on a platform."</p>	<ul style="list-style-type: none"> • Students can use the real thing and gain firsthand experience. Usually updated through incremental acquisition. • High Fidelity. • High credibility. • Able to train all learning outcomes. • Good for emotional fidelity (inducing stress, fear). 	<ul style="list-style-type: none"> • Cost. • Size. • Support services. • Convenience. • Mobility. • Maintainability. • Health and Safety restrictions. • May support training in small groups only. • May not be available when required. 	<ul style="list-style-type: none"> • Live computer database

<p>GFE With Embedded Training "Training that is provided by capabilities built into or added onto operational systems, subsystems, or equipment, to enhance and maintain the skill proficiency necessary to operate and/or maintain that equipment."</p>	<ul style="list-style-type: none"> • Training environment provided with the real equipment. • Allows perishable skills to be practised. • May be updated with operational equipment updates. Reduces training time away from unit. • Both refresher and continuity training are resident in the unit or ship. 	<ul style="list-style-type: none"> • Expensive to fit to legacy equipment. • Decision to provide embedded training should be made prior to design freeze of GFE. • May support training in small groups only. • May place added burden on processing capabilities of host processors. • May increase wear and tear. • Equipment may be operated in training mode rather than operator mode & vice versa. • Possibilities offered by embedded training may be limited because of operational security. 	<ul style="list-style-type: none"> • Built in Tutorials
<p>Modified GFE "In a training context this is the taken to be the actual equipment found in a unit or on a platform that has been altered in some way to replicate only those key tasks that require training."</p>	<ul style="list-style-type: none"> • Reduced maintenance costs. • Negates some Health and Safety restrictions. • Extended life expectancy. 	<ul style="list-style-type: none"> • Cost. • Size. • Convenience. • Mobility. • May not be available when required. • May support training in small groups only 	<ul style="list-style-type: none"> • Stripped out aircraft for airframes engineers
<p>Handout Media "Paper resources given to students to support their learning"</p>	<ul style="list-style-type: none"> • Can speed up course time, replacing note taking. • Can be read in student's own time. • Often wrongly overlooked for TBT solutions 	<ul style="list-style-type: none"> • Lesser degree of recall compared to notes written by student. 	<ul style="list-style-type: none"> • Handouts • Books
<p>Interactive Electronic Technical Manual (IETMs) "An electronic instruction manual, a book on a computer that describes how to operate or maintain a product."</p>	<ul style="list-style-type: none"> • Material available as a result of Def Stan 00/60. Provides reference material at point of need. • Job aid rather than training solution. • Locate information quickly • Less storage space 	<ul style="list-style-type: none"> • Hardware specification must support IETMs. • No guarantee of learning transfer. • Preference is to read from paper based products. • No set standards, or format. 	<ul style="list-style-type: none"> • eBooks

<p>Mobile Learning (mLearning) "Electronic learning that can be accessed at anytime and anywhere. Content is loaded on portable devices"</p>	<ul style="list-style-type: none"> • Provide learning for people who do not have access to pcs. • Can be accessed at anytime and anywhere • Can be tracked by a learning content management system • Easy to build mobile content • Most people are familiar with mobile devices. Computer literacy not required 	<ul style="list-style-type: none"> • Very limited amount of space (real estate) available for each screen view • Developers have to learn new instructional design skills. • Content needs to be built for specific devices. Eg for apple iTouch (although some mobile software is device "agnostic") • Security and accreditation needs to be gained from the mod for mobile content and use. 	<ul style="list-style-type: none"> • Nintendo DS • Ipods • PSPs • Mobile Phones
<p>Overhead Projector (OHP) "OHP projects content on transparent slides to a main screen"</p>	<ul style="list-style-type: none"> • Reliable. • Normal room lighting. • Cheap. 	<ul style="list-style-type: none"> • Can be boring if used too much. • Dated and not as versatile as CAI. • Requires some training to be used effectively. • Has to be carefully positioned to ensure all students can see screen. 	
<p>Paper "Traditional paper based media with training and/or job related content."</p>	<ul style="list-style-type: none"> • Relatively cheap and easy to produce • Reliable with no technology requirements • Portable and easily accessible 	<ul style="list-style-type: none"> • Costs compared to a technology based solution can increase significantly for a large number of copies • Requires careful version control and management • Difficult and time consuming to amend and distribute • Can easily become out of date • No moving images or interactions • Less secure than e-documents with password protection 	<ul style="list-style-type: none"> • Books • Handouts • Aide memoires • Checklists • JSPs • Manuals
<p>Physical Model "A scale model representing the actual equipment."</p>	<ul style="list-style-type: none"> • Can provide high level of fidelity. • Can model movement of internal components impossible to view with GFE. • Simplicity • Adaptability • Emphasising colour and texture can be added. 	<ul style="list-style-type: none"> • Can be expensive. • Only suitable for simultaneous instruction to small groups. • Cumbersome. • Must be true to life. 	<ul style="list-style-type: none"> • Model ship • Cut out engine model
<p>Podcasts "Digital media files* that are regularly released online and can be downloaded to PCs and portable devices (With the introduction of the more recent term vodcast, most types of podcast are just audio files.)"</p>	<ul style="list-style-type: none"> • Quick and easy to produce • Ideal for students with low literacy ability • Suitable for language training • Can be easily saved to mobile phones and portable music players 	<ul style="list-style-type: none"> • Requires recording equipment (hardware and software) • Podcasts need to be hosted on a website • Not suitable for training where visual content is important • Content within the podcast cannot be searched (meta data about the podcast needs to be created) 	<ul style="list-style-type: none"> • News podcasts • Vodcasts (Video podcasts - see vodcast section)

<p>Polling "In a classroom context this is students voting on questions using remote bluetooth or wireless devices ."</p>	<ul style="list-style-type: none"> • Students can contribute to the output shown on the main screen • Interactive and engaging • Gives feedback to instructor • Useful tool for evaluation • Data can be recorded for future use • Novelty factor 	<ul style="list-style-type: none"> • Initial cost and maintenance. • Only supports closed questions • Can lead to irrelevant content • Accreditation for bluetooth or wireless required 	<ul style="list-style-type: none"> • Quizdom • Turning Point
<p>Part Task Trainers (PTTs) "A device, which enables trainees to learn and practise a particular skill or set of skills which, are part of a task for which they are being trained." <i>(Often GFE or part GFE with partial simulation)</i></p>	<ul style="list-style-type: none"> • High level of fidelity. • Permits multiple fault injections whilst not contravening Health & Safety regulations. • Provides realism for specific tasks 	<ul style="list-style-type: none"> • Cost. • Size. • Mobility, Accessibility. • May support training in small groups only. • Expensive and difficult to modify. • At risk of subsequent updates to GFE. • Requires extensive analysis to identify key tasks. 	<ul style="list-style-type: none"> • Instrument trainer
<p>Reconfigurable Skills Trainer "An adaptable trainer that can be re-designed for different training requirements"</p>	<ul style="list-style-type: none"> • Negates the requirement for expensive multi console training equipment. • Allows team, sub-team and individual training. Hardware can support other training media. 	<ul style="list-style-type: none"> • Negates the requirement for expensive multi console training equipment. • Allows team, sub-team and individual training. Hardware can support other training media. 	<ul style="list-style-type: none"> • Microsoft Flt Sim • Virtual Battle Space
<p>Serious Games "Using computer games 3D environments for Learning"</p>	<ul style="list-style-type: none"> • Engaging learning for gaming enthusiasts. • Includes advantages of simulation • Generally much cheaper than simulation • Some versions can be updated by SMEs 	<ul style="list-style-type: none"> • Not all learners enjoy 3D games. • Can require large files and increased bandwidth • Generally only suitable for training which requires simulation 	<ul style="list-style-type: none"> • Virtual Battlespace 2 • Virtual DCTS (on the DLP)
<p>Simulator "A device which presents trainees with a representation of the important features of the real situation and reproduces, as far as possible, operational conditions which enable them to practise directly, safely and</p>	<ul style="list-style-type: none"> • Allows students to experience and gain idea of actual situation. • Environment and teaching situation controlled. • May be the only possible training medium due to danger of real environment. • May be networked for federated and confederated training systems. • Ability to replicate most fidelity requirements. • Good for attitudinal training. 	<ul style="list-style-type: none"> • Can be expensive. • Requires instructor to brief, monitor, and debrief for learning transfer to occur. • Assessments tend to be subjective, relying on the experience of the instructor. • Must be well designed to ensure maximum benefits both intellectually and emotionally. • Requires careful project management to ensure that only required learning 	<ul style="list-style-type: none"> • Flt Simulator • Small Arms Trainers

<p>economically, tasks which cannot be practised on the job itself, e.g. a flight simulator."</p>	<ul style="list-style-type: none"> • Can provide the opportunity to improve unit collective performance wherever people need to practise expensive or dangerous activities under realistic conditions. • Actively involve the learners in making decisions, playing roles and adopting attitudes. • Simulators allow instructors to progress from simple to complex scenarios. • The operation of certain equipment or scenarios may lead to environmental damage and could therefore be constrained in time and realism. In such cases the only way in which practise may be allowed is by simulators. 	<p>outcomes are provided.</p> <ul style="list-style-type: none"> • Requirements likely to be over specified. • ☐ New software must be developed each time a change is made to operational equipment. 	
<p>Smartboard "PC driven interactive white board combining audio-visual support with an instructor. It allows the user to drive software via a touch screen. "</p>	<ul style="list-style-type: none"> • Professional look • Good for motor skills when used with photo realistic software • Puts instructor in front of the class. • Can record actions and display for later use or demonstrations. 	<ul style="list-style-type: none"> • Expensive • Instructor may mask some of the presentation when using the touch screen. • Rear projection units are slicker, but more expensive. • Can dominate classroom. • Front projection units are masked by the instructor 	
<p>Online Social Networking "Learners interact with tutors and other learners via the web. It can be both synchronous (instant interactions in real time) or asynchronous".</p>	<ul style="list-style-type: none"> • Learners can continue to receive support from tutors and other learners outside the classroom. • Learning is captured and can be viewed and shared by tutors and other learners. • More efficient management of learning resources which can be centralised and easily accessed 	<ul style="list-style-type: none"> • Online tutors will require new skills as opposed to classroom delivery. • Learners and tutors require access to the web. • Cultural change required for both tutors and learners. • Efficient and accredited IT infrastructure required. 	<ul style="list-style-type: none"> • Virtual Learning Environment (VLEs) • Webinar • Chat Room • Forum
<p>Stimulated Government Furnished Equipment (GFE) "Controlled inputs directly to a piece of equipment that has been embedded in the training system, thus allowing it to be used as a simulator.</p>	<ul style="list-style-type: none"> • High fidelity • Key inputs generated without the need of live inputs. • Cues can be programmed in increasing complexity. • Cheaper than simulation over long term. • Ability to freeze and reset features. • Most effective when a large or complex function needed for training can be totally provided 	<ul style="list-style-type: none"> • High up front costs. • May require changes as operational equipment develops. 	

<p>Stimulation is most effective when a large or complex function needed for training can be totally provided by the embedded special purpose computer and its internal software. "</p>	<p>by the embedded special purpose computer and its internal software.</p>		
<p>Teleconference "Conference over the telephone involving more than 2 people."</p>	<ul style="list-style-type: none"> • Synchronous audio comms • Only requires a telephone line - no PCs or Internet required • Well established with capabilities at most units • Optional recording available 	<ul style="list-style-type: none"> • Some extra equipment may be required • Telephone provider will charge extra for conferencing services • No visual implies unable to read body language. • Needs to be carefully facilitated to ensure all contribute and people are not talking simultaneously • Unlike chat room records, content in recorded teleconferences must be searched by a human rather than a fast search engine 	
<p>Video "Video media refers to several storage formats for moving pictures. Can be analogue or digital."</p>	<ul style="list-style-type: none"> • High visual fidelity. • Provides movement, colour, brings events/demonstration into classroom that would be difficult and expensive to repeat. • Can be used for attitudinal training (Alcohol & drug education, Equal Opportunities, safety). • Time saving substitute for field trips 	<ul style="list-style-type: none"> • Can be costly to produce and up-date. • Can become quickly dated and loose of credibility (c.f. Open University). • Passive, requires instructor present to be effective, followed up by questioning to check understanding. • Trainee passiveness. • Equipment requirement. • Requires supplemental methods. • Can become dated. • Copyright laws. 	<ul style="list-style-type: none"> • VHS • DVD • Blu-ray
<p>Virtual Reality "Simulation of dynamic information and the immediate work environment, possibly including sight, sound, smell and touch simultaneously. VR technology typically involves using powerful computers.</p>	<ul style="list-style-type: none"> • Allows visualisation and training on equipment's and platforms that do not yet exist. • Material may already be in existence from CAD drawings. • Can use cues to enhance trainee performance. 	<ul style="list-style-type: none"> • Cost of hardware, software and development. • 'VR sickness', visual lag in eye and/or head track systems. • Technology now maturing requires very careful targeting. Long development time. • Typical update rate of 20-30 frames per second required, trade off is lack of detail. • No standards for hardware and software when applying VR technology to training. 	<ul style="list-style-type: none"> • VR parachute Trainer • Welding Trainer

Commonly seen in helmet mounted displays."			
Virtual World "A virtual world is an interactive simulated environment accessed by multiple users through an online interface."	<ul style="list-style-type: none"> • Allows participants to collaborate remotely in an environment representing the real situation • Personal representation through life like models (avatars) • Real time audio or text chat available • Ideal for team training • Events can be recorded for "After Action Review" from any participants perspective 	<ul style="list-style-type: none"> • Costly to develop initially • Bandwidth intensive if high fidelity required 	<ul style="list-style-type: none"> • Second Life • VBS2 • Virtual DCTS
Vodcast "Online video accessed over the internet."	<ul style="list-style-type: none"> • Easy to produce: eg. most new mobile phones are capable of producing video suitable for vodcasts • Easy to distribute via the web and update. • Easily accessed. • Can be downloadable to a portable device. • Can be streaming with controls to skip sections 	<ul style="list-style-type: none"> • Normally low quality video means full screen not advisable • Increases bandwidth • Passive with no interaction for student • Internet required 	
Video Teleconference (VTC) "Realtime conferencing normally over a broadband network involving high quality video and sound and the sharing of electronic resources"	<ul style="list-style-type: none"> • High Quality (HQ) compared to Web Cams • HQ enables large screen projection viewable in a conference hall • Includes flexible software for sharing electronic resources such as documents. • Enables collaboration of a large number of people distributed over a wide area 	<ul style="list-style-type: none"> • Significant bandwidth and comms infrastructure requirements • Expensive and difficult to set up and maintain • Training required for operation of VTC • May not always be available due to technical issues • Security issues of using VTC in areas with classified information being disclosed (both through visual and audio media) 	
Wall Charts "Posters on classroom walls showing training content"	<ul style="list-style-type: none"> • Useful for showing complete electrical and mechanical systems. • Constant reminder to students of key learning 	<ul style="list-style-type: none"> • Preparation is time consuming and expensive if produced commercially. • Not easy to amend. 	
Web Based Training "CBT delivered over the Internet or an Intranet, often via a Learning Management System. The usual meaning of the term	<ul style="list-style-type: none"> • Lots of COTS packages. • Ability to access anywhere, anytime. • Can be hosted on LAN, local intranet or the Internet. Flexible. • Good for stable course content. 	<ul style="list-style-type: none"> • Can be costly to provide a good bespoke product. • Many COTS packages are educational. • Need to consider security risks (especially if using INTERNET). 	<ul style="list-style-type: none"> • DLP Courses

<p>'e-Learning' when used by industry. Synonymous with On-Line Learning."</p>			
<p>Webcam "Small video camera designed to transmit video images over the web in real time."</p>	<ul style="list-style-type: none"> • Cheap to purchase compared to standard video cameras • Small, Light and portable • Includes standard software for working with applications such as MSN Messenger • Highly compressed video output requires low bandwidth • Very easy to learn and operate • Includes both audio and visual 	<ul style="list-style-type: none"> • Low quality compare to standard video • Security issues of using webcams in areas with classified information being disclosed (both through visual and audio media) 	<ul style="list-style-type: none"> • Free Standing • Intergrated (above Laptop screen)
<p>Webinar "Short for Web-based seminar, a webinar is a presentation, lecture, workshop or seminar that is transmitted over the Web."</p>	<ul style="list-style-type: none"> • Transmitted over the Web to provide highly interactive Synchronous learning. • Sessions can be recorded and the learners can replay back the session in their own time (Asynchronous) • Instructor and students can be seen via webcams, communicate via the use of a phone or VOIP and utilise a text chat function. • Easily upload PowerPoint slides to deliver a lesson, presentation or lecture. • Learners can be directed to break out areas to work in smaller groups. • Up to 1000 personnel can login and listen in to a webinar session at any given time. • No T&S outlay as the students are either at their place of work or home. 	<ul style="list-style-type: none"> • Cost: Companies charge a monthly subscription fee which is dependant on the amount of sessions a training organization wishes to run per month. • There are additional charges for using VOIP or telephone calls which is either levied against the training provider or students. • Technical issues cannot be easily rectified as the students can be anywhere in the world. • You need to have at least 2 people running a session. One person presenting whilst the other is monitoring the text chat area and answering any questions raised as well as dealing with any technical issues. • Hard to gauge if students are actually listening. 	<ul style="list-style-type: none"> • GoToWebinar • Webex • Adobe Acrobat Connect Pro
<p>Web Quest "Students are required to do directed research around a topic via the web"</p>	<ul style="list-style-type: none"> • Software available for structured Web Quests • Student led learning • Enables later discussion and sharing of information found • Minimal preparation required by the instructor 	<ul style="list-style-type: none"> • Requires motivated students who are able to direct their own learning • Internet access required • Students can digress from the main objectives • More complex assessment required by instructors during and after the Web Quest 	<ul style="list-style-type: none"> • Compare and contrast US and UK foreign policy using websites for information.

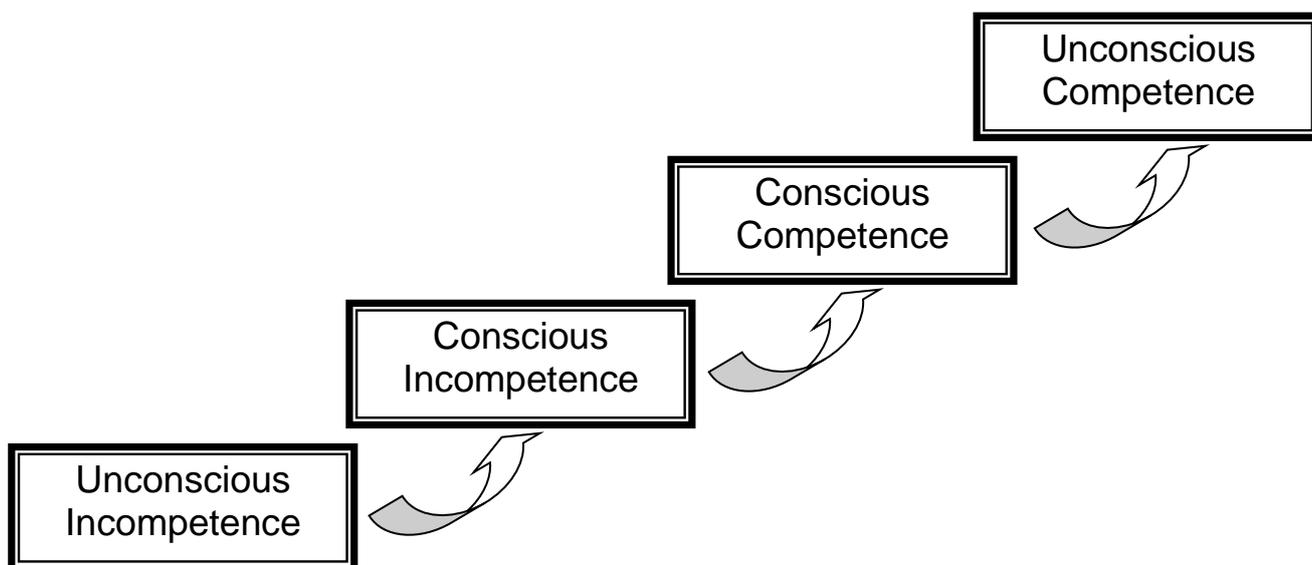
<p>Whiteboard " Display board used with marker pens - can be magnetic"</p>	<ul style="list-style-type: none"> • Can be seen by whole class. • Visual confirmation of student's input • Easy and fast to update • Flexible content 	<ul style="list-style-type: none"> • Requires careful use and planning. Can become a scribbling pad. • Neat handwriting required. • Cannot be saved for future review. 	
<p>Wiki "Short for Wikipedia: an online reference resource similar to an encyclopaedia however content can be updated regularly and users can rate content and leave comments"</p>	<ul style="list-style-type: none"> • Useful for large amounts of reference material such as terminology. • Easy to navigate with hyperlinks • Easy and fast to update content • Allows comments by users 	<ul style="list-style-type: none"> • Initial set up is time consuming • Requires regular updating • Content needs to be monitored to ensure accurate and up to date 	<ul style="list-style-type: none"> • DLP Wikis • Moodle

Skills Analysis

The Purpose of Skills Analysis

Before we can start to teach a student to carry out a practical skill we first need to break it down so that it can be clearly understood. Correct analysis of a task will ensure that you understand the skill and therefore are more effective in helping your students to achieve positive results.

It should be remembered that we are taking students from potentially unconscious – incompetence towards conscious – competence.



If we are unaware of a skill or requirement it is said that we are effectively at the level of Unconscious – Incompetence. When our attention is drawn towards a task or skill then our conscious level increases, however, at this stage we still have little or no understanding of how to perform the skill (we are at Conscious – Incompetence). When we have been trained in the skill then it could be said that we are at Conscious – Competence. We know what is required and how to do it but we still need to focus on what we are doing. This could be said to be at the level of Training Performance Standard. Unconscious Competence would be looking at Operational Performance Standard.

The Three Elements of Skills Analysis (What? How? Why?)

What? The first stage in analysing any task is to break the skill down into ALL of its component parts by going through the skill ourselves, step-by-step writing down the elements as they occur.

How? If an untrained person tried to follow the basic sequence of events poor technique could be adopted, mistakes could be made and safety could be compromised, endangering both student and or equipment. The How begins with an action which is monitored using the SENSES. DECISIONS are made based on what is sensed and MOVEMENTS make the corrections or adjustments. Try and make comparisons that your students can picture and be precise and accurate “Turn it a quarter of a turn”, or, “ Turn it 90 degrees”.

Why? It is vital that your students understand why things must be done in a particular way. The reasons why things are done a particular way can fall into three main categories:

Safety. The Health & Safety issues for why a skill must be carried out in a particular way or sequence.

Importance. It may be vital to the functioning of the equipment that an element is carried out in a particular order or way.

Difficulty. It may help students learn difficult skills if they are broken down and learned in order.

Analysis of Skills

1

What:

Procedure sequence

In order to determine **Procedure & Sequence**
Do task and record **What** you do. This should be backed-up with logic and reasons to give added depth and understanding.

2

How:

Senses

Decisions

Movements

Examine each procedural step to determine and record **How** the experienced tradesperson carried out the step or steps and overcame any potential problems.

Include useful 'tips' and 'hints' These show that not only do you have the skill but also wish the student to gain the skill and understand it. In addition it builds deeper rapport with the students and increases instructor credibility.

in use of

in making.....

and achieving difficult.....

Senses

Decisions

Movements

3

Why:

Key procedures

Ask yourself:
What hazards exist and What faults most often arise when carrying out the task. To help identify those aspects of the procedures that need stressing because of:

Safety.....

Importance.....

and/or **Difficulty** for students to master

Task Sequence	Method Of Achievement	Reason For Method
	SENSES - DECISIONS - MOVEMENTS	SAFETY - IMPORTANT - DIFFICULTY
'What'	'How'	'Why'
Handle Fitting	Initially align the square drive on the file tang with the opening on the handle. Guide the tang into place and secure by pushing the handle into place. To firmly locate the Handle to the File – allow the file and handle to drop onto a hard surface. (Note: the drop should be approximately 4" - 6" (10 – 15 cm) The base of the handle should impact on the hard surface.	Safety Protect Hand Better Control Avoids Damage To Handle
Grasp Handle	"Handshake" Grasp - Thumb Or Finger Extended Along Top Of Handle	To Guide File
Stance	(Vice, Elbow Height), Body 45° To Bench, Arm's Length, Left Foot/Vice, Right Foot Comfortable Pace Rear-Balanced - Like Boxer	Comfort, Balance
Filing Action (Right Arm) Additional Weight Co-Ordination	"Feel" - Lock Wrist, File Extension Of Forearm - Easier To Sense Action Horizontal. Lh Apply Extra Weight Sufficient To Produce Cutting Action On Forward Stroke. Reduce Lh Weight And Counter-Balance Rh. As Stroke Progresses Forward Distribute Lh Pressure Via Thumb (At Centre) And Second Finger (At Forward End Of File)	Difficulty To Keep Horizontal Difficult To Sense Angled Cut

Technical Skills Lesson Structure

This type of lesson is designed to involve students in the learning process by observing a skill or task twice. To give depth and clarity to the learning the first demonstration involves the students with teaching questions. Establishing problems and reviewing the solution to that problem. The second demonstration is designed to give conformation of the steps and show student understanding through testing questions. The last aspect is the students performing the task or skill to show that they have fully achieved the lessons stated objectives.

Technical Skills Lessons have a recognised structure as shown below:

Introduction		10%
Development	1 st Demonstration	40%
Consolidation	2 nd Demonstration	50%
Application	Brief, Supervise, Appraise Final Components	

The Introduction

The introduction phase follows a very similar format to that of the theory lesson:

Interest – Generating a motivational aspect to the subject

Need – Ensuring the context driven areas are highlighted

Title – Signposting what is to be taught.

Range (this may now have specific Health and Safety aspects included)

Objectives (including the Performance, Conditions and Standards)

Any Questions. – Confirming understanding and delineating the end of the phase.

Development - 1st Demonstration

The 1st Demonstration should fulfil the following criteria:

Contain all of the Key Learning Points and vital information in a logical order. Assume nothing!

Instructors should ask *teaching* questions to aid development and maintain class participation. Remember – Why?, What?, How?

Reinforce each Key Learning Point with explanation and amplification (how, why).

Allow the students ample opportunity to question the instructor after each KLP.

Ensure students have a clear view of the demonstration.

Safety points should be stressed throughout.

Ensure the students can see the product clearly at appropriate times for clarification.

Any Questions? – Give the students opportunity to ask questions.

Consolidation - 2nd Demonstration

The 2nd Demonstration forms part of the 'consolidation' and should fulfil the following criteria:

The 2nd Demonstration must be conducted in exactly the same way and order as the 1st Demonstration.

Instructors should on this occasion ask *testing* questions and gain the answers before completing that part of the task. Remember – What? How? Why?

Allow the students further opportunities to ask question about the process and skill.

Stress safety throughout.

Ensure the students can again see the product clearly.

New information should **not** be included in the 2nd demonstration.

Application

Brief The briefing should be used to focus students' attention on the subsequent exercise. It should provide the necessary information to enable the student to do the task correctly and safely. The following is to be covered in the briefing:

State and reshow the exercise objectives - what the students are expected to achieve.

Cover all relevant safety precautions.

Inform the students of any time constraints.

Clearly explain what you expect from the lesson in addition to any rules, procedures, or any special conditions.

List of tools and materials required.

Procedures if students encounter problems.

What to do on exercise completion.

Ask if there are any questions

Supervise

Observe: The instructor must observe the activities accurately, but without interfering, taking over or getting in the way of the students. Instructors should consider how they intend to mark / record observations carefully.

Control: The instructor must control the exercise ensuring safety at all times. The instructor must intervene if safety is compromised. Effective questions should be used to elicit appropriate actions.

Record: Any recording of the skill or task should be balanced with the need to accurately observe, if we are observing the being distracted by making notes may mean that we miss

other students actions. It may be the case that we need accurate records of performance in order to give effective feedback to the student.

To fulfil the criteria above, the instructor must:

Ensure both the students and equipment are safe and are being properly controlled.

Check that the students understand and develop the skill.

Be able to provide an assessment of the students' performance.

Appraise This is to be a general appraisal to individuals in the group, including encouragement of positive and negative aspects of the task. Appraisal points should be integrated and presented in such a way as to be concise, logical and designed to motivate the students. Performance must always be summarized in terms of the objectives.

Final Components

Finally, finish off the lesson with a link to the overall aims of the course or future lessons as applicable. As with all lessons you must ensure that your students have the opportunity to ask final questions and that you give a reference for your lesson.

Technical Skills Lesson Structure

Introduction

Interest

Creating the desire to learn 'the hook'.

Need

Why is this lesson important in context

Title

Range

The rules and parameters Safety aspects of skill emphasised

Objectives (PCS)

Stated and shown

Any Questions

Denotes the end of phase

Development

1st Demo

Reasoning Questions

Why

What

How

Create the Problem

So what must you do

This is how you do it

Pass around final product

Any Questions

Safety

Consolidation

2nd Demo

Testing Questions

What

How

Why

What did I do next

How did I do it

Why did I do it

Pass Around final product

Any Questions

Safety

Application

Brief students on safety and objectives

Supervise/Monitor

DO NOT TAKE OVER

Appraise

Any Questions

Link

Reference Stated and shown

Final questions

EDIP Skills Lesson

Overview

EDIP lessons give an additional aspect to the learning experience by tapping into 'Rote Learning'. The students see the task being performed and then copy the instructor doing the task in exactly the same order. They are then allowed to develop the skill, increasing their confidence and dexterity by practicing the task (if the practices are focused on the standards aspect of the objectives they in turn aid learning). All this leads to a formal test that the students can perform the given task with the parameters set in the objectives.

The EDIP Lesson should have the basic structure shown below. Note that the timings are for a 30 min lesson and should be considered as guides only:

Introduction	10%	--24 mins--	}	Explanation	10% (2 - 3 mins)
Development	80%			Demonstration	15% (3 - 4 mins)
				Imitation	25% (5 - 6 mins)
Consolidation	10%			Practice	50% (12 mins)

Single Stage EDIP

Remember to emphasise safety at each stage of the EDIP

The Introduction

The introduction phase follows a very similar format to that of the theory lesson:

Interest – Generating a motivational aspect to the subject

Need – Ensuring the context driven areas are highlighted

Title – Signposting what is to be taught.

Range (this may now have specific Health and Safety aspects included)

Objectives (including the Performance, Conditions and Standards)

Any Questions. – Confirming understanding and delineating the end of the phase.

Main Lesson Development Phase (EDIP)

Explanation. The Explanation covers the factual aspects of the skill/task giving a short and clear description of any facts concerning the finished skill e.g. naming of parts and material, explanation of uses, limiting factors and safety. Wherever possible the finished item should be used to identify parts and characteristics. It is **NOT** to be used as a verbal description of how the Skill is to be performed.

Demonstration. The instructor may choose to begin this section with an optional demonstration of the task/skill carried out **without** commentary, performing the task at the normal speed. The skill/task should be broken down into small chunks, in order that the students can absorb the information. Then we give the mandatory slow time step-by-step demonstration clearly showing

each step with commentary and emphasising safety. Note: one of the tricky aspects to this section is that we must **not** give commentary whilst doing task/skills. Remember – Talk then do!

Imitation. This is often referred to as the monkey see, monkey do phase. The instructor emphasises safety, performs the first step of the skill and is then imitated by the student. The instructor controls the class ensuring that each student has performed to the required standard. The instructor monitors the students throughout, adjusting and amending where necessary; motivating and praising achieves this. This would then be followed by the next step and then every step thereafter until the skill is completed. Remember – Talk then do!

Practice. The practice phase should commence slowly and then gather momentum giving the student the opportunity to build confidence, speed and accuracy. The instructors’ main role during this phase is observation, appropriate intervention and safety. In addition, we should motivate and praise whilst being on hand for guidance and advice.

Consolidation Sequence

The instructor may choose to begin this section with an optional demonstration of the task/skill carried out **without** commentary, performing the task at the normal speed. Consolidate the lesson by summarising the content i.e. briefly revisit the Key Learning Points. The objectives of the session should be restated or shown to remind students of what they have achieved. A final test of the students’ competence must be carried out. The instructor may use testing questions to confirm student understanding if required. Further confirmation should be gained by asking, “Are there any questions?” before giving and displaying a Reference and finally a link to the next lesson.

Multiple Stage EDIP.

In some cases a complicated skill may be broken into various stages and joined together to produce an entire lesson as shown below.

The Flexibility of E-D-I-P		
Introduction	Introduction	Introduction
Explain	Explain	Explanation
Demonstrate	Demonstrate	Demo – Demo
Imitate	Imitate – 2nd Imitation	Imitation – Imitation
Practice	Practice	Practice
Consolidation	Consolidation	Consolidation

EDIP Lesson Structure

Introduction

Interest

Creating the desire to learn 'the hook'.

Need

Why is this lesson important in context

Title

Stated and shown
Or stated twice

Range

The rules and parameters Safety aspects of skill emphasised

Objectives (PCS)

Stated and shown

Any Questions

Denotes the end of phase

Development

Explanation

Terms and definitions used also sight of the end product to give clarity

Demonstration

Showing the skill
(Optional Demo) Full speed
(Mandatory Demo) Step by step avoid talking and doing at the same time

Imitation

Same order as Demonstration (Rote learning) Maintain control

Practice

Designed to develop skill, confidence and dexterity.
Give variety and challenge appropriately

Questions encouraged at regular intervals throughout the development phase

Safety should be emphasised throughout the development phase

Consolidation

Final Summary emphasising the safety aspects

Re-State and show Objectives

Full test of Skill / Task

Appraisal and feedback

Any Questions

Link

Reference Stated and shown

Final questions

Brief – Monitor - Debrief Lesson

Practical exercises allow students to apply existing knowledge and skills either to consolidate or enhance their existing skills or to develop new skills. Because practical exercises are designed to provide a learning experience for students, the quality of the pre-exercise briefing must be of a high standard.

The Brief

A briefing should not be used to teach new theory. Briefings usually contain testing questions to check that the necessary theory of the task is known and to check that the student understands the briefing. Reasoning questions may be necessary to identify solutions to problems that the student is likely to encounter and new skills required to meet the objectives.

Briefings are structured so that they:

Ensure that the student knows exactly what is expected of him/her.

Ensure that the student has the necessary skills and knowledge to carry out the task.

Briefings are structured as follows:

Motivation (Interest/Need). The trainee must understand why the task is necessary and how it relates to the individual in his/her future sphere of employment.

Objectives. The objectives of the exercise must provide a precise statement of what the trainee is expected to achieve. A copy of the objectives should be given to the student for reference. As the task is likely to be practical the objectives must comprise of 3 elements:

- *Performance.* What the trainee is expected to do.
- *Conditions.* Details of the resources available and the environment where the task is to be performed.
- *Standards.* Observable and measurable references which will allow assessment of the finished product.

Confirmation of Previous Knowledge. It is necessary to test the trainee's understanding of all known elements of the task before it is attempted. The analysis will form the basis of the test and will fall into one or more of the following areas:

- *Safety.* Relating to the trainee, the equipment, the working area and occupants.
- *Importance.* Actions that have a direct bearing on the finished product and achieving the required standards.
- *Difficulty.* Elements of the task the instructor (as the expert) feels are demanding and difficult to achieve.

Outline Rules/Directives. The instructor must inform the trainee of any rules, or timings, or additional information, including Health and Safety Regulations etc, necessary for the trainee to complete the task.

Teach new information/Review of Problems. There could be gaps in the students' knowledge of the task. These gaps must now be addressed; this is best achieved by using reasoning questions.

Check Understanding of Brief and Objectives. You are to test whether the trainee has understood the essential elements of the brief and is competent in any new aspects of the task. The trainee should restate the rules and objectives to confirm understanding.

Any Questions. The trainee should be given the opportunity to ask questions.

Appropriate visual support, effectively managed, will be necessary throughout the briefing. The instructor should remain flexible with his/her application of the ideal structure.

Monitoring

The instructor should monitor a student throughout an exercise to improve student skill as follows:

- Observe
- Control
- Record

Observation. Accurate and effective observation provides the instructor with the required information about student performance and is essential for effective control, recording and debriefing.

Control. The instructor must control the student and the exercise to ensure that progress is being made and there is no danger to personnel or equipment. Control can be achieved either by direct intervention or manipulation of the exercise variables.

Intervention. There are 4 main elements to effective intervention: Purpose, Timing, Method and Consequences.

Purpose. There must be a valid reason or purpose for the intervention. The following are some valid reasons to intervene:

- Safety
- Serious error
- Student unable to cope or stopped making progress
- Student has exceeded exercise parameters
- There is the possibility of making a teaching point

Timing. The timing of the intervention will significantly affect its effectiveness. Timing is a matter of common sense coupled with an awareness of the probable effects of the intervention. The purpose will have strong influence on timing; if the student appears to be not coping with a problem, then he/she should be given sufficient time to recognise the problem before there is any intervention - unless, of course, there is a safety hazard. It is important to remember that observed errors which do not result in intervention **must** be addressed during the debrief.

Method. Whilst there are 3 methods of direct intervention, you can use more than one during a single intervention.

- **Take over.** This may be necessary for safety. However, it is the least effective intervention for learner and should be followed by a full debrief of what went wrong and how to avoid a similar event in the future.
- **Talk through.** Telling the student what to do is more effective than taking over but is still not the best intervention for the learner.

- **The 'interrogative' approach.** This is the most effective intervention method, whereby the instructor uses reasoning questions to elicit the problem / situation / error and identify the appropriate corrective action from the student.

Consequences. An awareness of the possible consequences of intervention will enable you to select appropriate method/timing. The consequences can affect the exercise and the student:

- **The Exercise.** Interventions can make the exercise disjointed and can alter the exercise variables. The instructor must ensure the primary purpose of the exercise or the associated standards are maintained.
- **The Student.** The effect of intervention on the student is more complex. While competent students may resent intervention, weaker students may benefit. To minimise the disruption, the instructor must consider the possible consequences and only intervene if appropriate. Nevertheless, reasoning questions either during or after the event is likely to make the student more receptive and lead to a better learning environment.

Recording. You must keep an accurate record of the student's performance during an exercise. You can use:

- **Memory.** This is the least reliable data source, and should **not** be used exclusively except for short, simple, exercises, or when it is physically impossible to use an alternative.
- **Written Notes.** However, while you are making notes, there can be no observation. The instructor should prepare an assessment sheet or checklist, which requires minimum effort and time to record various aspects of student performance.
- **Student Notes.**
- **Video-Recordings.**
- **Tape Recordings.**

Demonstrations. Some briefs like the procedural BMD may contain a lot of new information and so demonstrations can be beneficial.

Debriefing

The purpose of the debrief is to appraise the student of their performance with the aim of improving their skill.

Planning. There are 4 steps in planning a debrief:

- **Determine Strengths and Areas for Improvement.** Identify the student's strengths and areas for improvement.
- **List Strengths and Areas for Improvement in order of importance.** The strengths and areas for improvement should be listed separately and the prioritised in order of importance.
- **Consider Time and Emphasis.** The instructor must now decide whether the strengths and areas for improvement as listed can all be covered in the time available. If not, then the least important may be 'struck off' the list until the remainder will fit into the time available.

- **Select Opening Comments.** Select your opening remarks very carefully to ensure that the student starts the debrief with a positive attitude.

Structure. Thorough and accurate planning is critical. The ideal structure is as follows:

- **Establish Rapport.** Ensure that the student is in a receptive frame of mind.
- **Student Self-Analysis.** Ask the student to give a self-analysis of his/her overall performance. The instructor should listen carefully but not allow the student to 'bog down' in fine detail.
- **Review Objectives.** Review the objectives of the exercise.
- **State Strengths.** State the student's strengths, starting with the most significant strength and continuing with the remaining strengths in decreasing order of importance.
- **Elicit Areas for Improvement.** Elicit the student's areas for improvement, including causes and solutions, beginning with the most serious area for improvement. Generating ownership and giving clarity of the AFI.
- **Re-state Strengths.** Re-state the same strengths as above in reverse order, ending on the strongest point.
- **Elicit Corrective Actions.** Elicit from the student any corrective actions required. This is the student's formal acknowledgement of the required remedial action.
- **Assess Progress.** If appropriate, give the student a clear indication of the grade/standard that has been achieved.
- **Any Questions.** Ask for student questions.
- **Encouragement.** Finish on a note of encouragement.

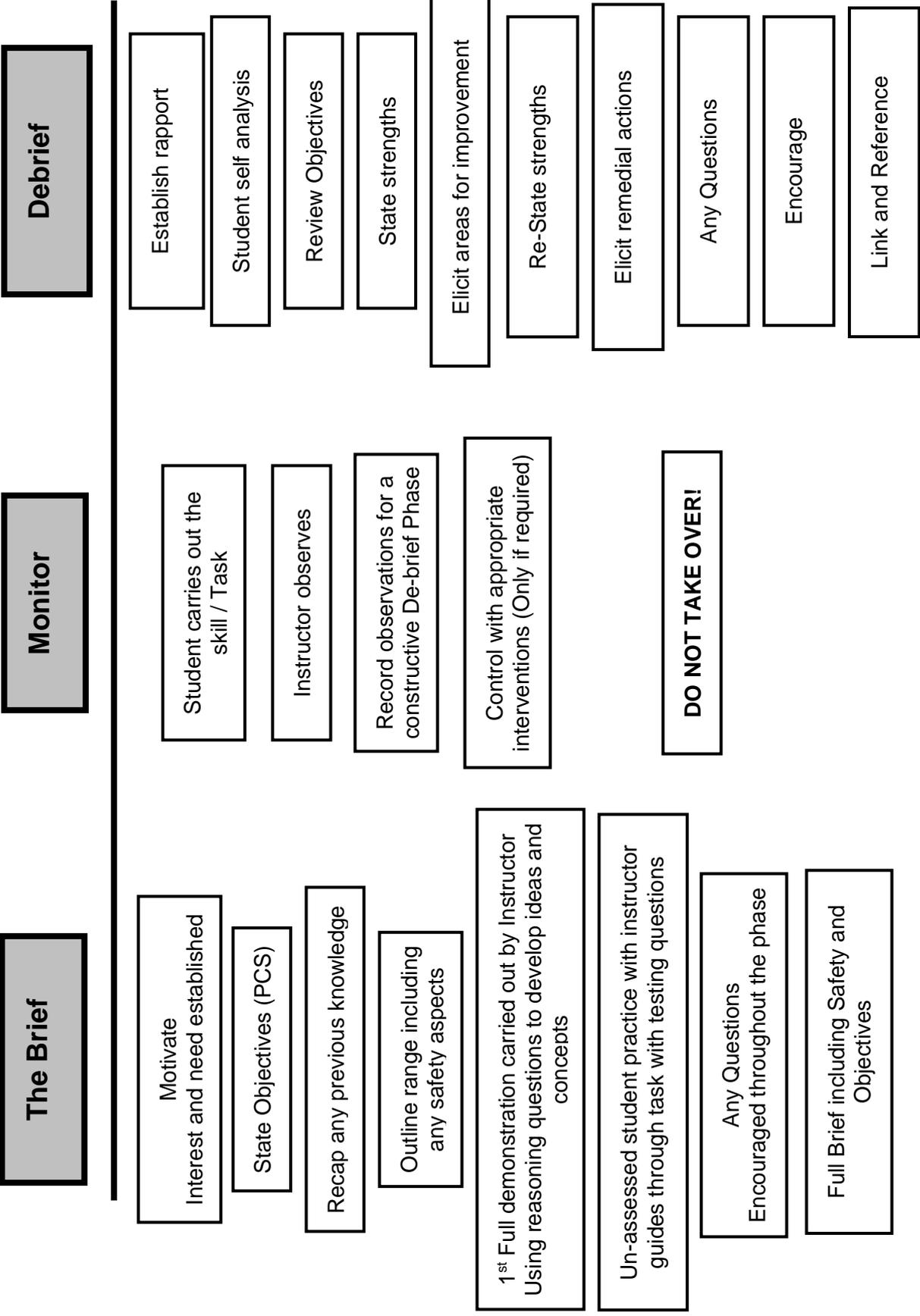
Problem Areas. Some apparent problems are worth considering:

- **Student has no Strengths.** If the student's performance is completely without merit then the Development phase should start with the most serious area for improvement. However, in most situations, the student will have done something correctly, and these points should be reinforced to avoid total demoralisation.
- **Student has no Areas for Improvement.** Give praise accordingly. Once the instructor has dealt with the student's strengths, the 'areas for improvement' should be replaced with 'greatest room for improvement'.
- **Very Long Exercise.** If the exercise has taken several hours, the instructor should give a 'Hot' Debrief, incorporating the debrief introduction, and conduct the full debrief at a more suitable time.

Timing. Debriefs should not exceed about 30 minutes. Using the structure advocated will result in content-efficient debriefs, even for relatively long exercises.

Attitude. The instructor must always treat the student with due respect, but this should in no way be an obstacle to strong or serious criticism where this is warranted.

Procedural Brief Monitor Debrief Lesson Structure



Constructive De-Briefing Proforma

Establish Rapport (setting instructor at ease)	Brief rapport established to relax the instructor and allow them to be much more receptive to constructive feedback.
Student Self Analysis (A balanced view of how they think the lesson went)	Allowing the instructor to voice their views which can be linked to when in the 'Bath-Tub'.
Review of Objectives/Aims (Refocus on the TO)	Refocusing on the lesson outcomes.
State Strengths (Give Priority)	From your observations and perspective what you thought worked and aided student learning.
Elicit Areas for Improvement (Generate Ownership)	Again from your observations and perspective establishing an agenda for change.
GROW Goal Reality Options Will	Generating ownership and a responsibility for change. This is achieved through effective questions and the use of coaching models such as GROW.
Restate Strengths (Reverse Priority)	Re-establishing strengths, stroking the ego and more importantly allowing for a positive motivational environment in which change is seen as natural.
Elicit Corrective Action (So next time you deliver what will you focus be?)	A vital aspect is to confirm their understanding of the areas for change and establishing the degree of ownership and motivation.
Any Questions (Clarify any outstanding points)	Clarification of any points on both sides.
Encouragement (Let student leave on a positive note)	Reminding of support available, the vision of the proposed changes and the challenge set. A final positive reflection on the feedback session.

Judge
ment /
Tides