Module 3 Instructional Techniques

Unit 3.1 Instructional/Learning Strategies

Revised October 1997
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Table of Contents

About this unit

Welcome to Unit 3.1 Instructional/Learning Strategies, the first of the six units in Module 3 Instructional Techniques.

This unit consists of three sections:

- Section One examines adult learning principles and learning activities.
- Section Two identifies methods of instruction and discusses the merits of each.
- Section Three reviews the characteristics of instructional strategies.

How to use this book

In addition to information on instructional/learning strategies, the unit includes activities and three assignments to be completed and submitted to your tutor.

The activities will not be considered as part of your assessment for the unit. Their purpose is to assist you to check your progress as you proceed through the unit.

How you'll be assessed

You will be assessed on your response to the assignments.

The assignments will require some research on your part.

Please contact your tutor regarding the time allowed for their completion.

Finding your way

As you work through the text you'll see symbols in the left margin of some pages. These "icons" guide you through the content.

Read

Important—take note!

Check your progress

Activity

Competency

The curricula of this training programme for Technical and Vocational teachers is competency based. The competency for each unit is expressed as a number of learning outcomes and assessment criteria.

Assessment criteria specify what you must be able to do to show you have gained the knowledge and skills needed to achieve each learning outcome.

Each unit has its own assessment criteria specified. Recognition of prior learning is encouraged. If you feel confident you have the necessary level of competence to successfully complete the elements shown under Assessment Criteria on the next page you may be able to take the assessment without studying the unit.

Learning outcomes

When you have completed this unit, you should be able to:

- Identify a range of instructional strategies
- Identify the characteristics, strengths, weaknesses and appropriateness of the following as instructional strategies:

  "chalk and talk"
  demonstration
  practical activity
  project work
  individual and team work
  types of media
  self paced study
  research
  live work
- Identify the characteristics, strengths, weaknesses and appropriateness of the following as instructional delivery strategies:

  Face to face
  Distance education

Assessment criteria

- State accurately the instructional strategy used in identified examples
- Select situations for which the following are appropriate strategies:

  "chalk and talk"
  demonstration
  practical activities
  project work
  individual and team work
  particular media
  self paced study
  research
  live work
  face to face
  distance education

Other resources you might find useful

- Bloom, B.S. 1964, Taxonomy of Educational Objectives, Longmans.

Section 1 Principles of adult learning

This section investigates adult learning principles and reasons for using a variety of learning activities when training adults.

When we design learning activities, what must we consider and why?

Any well-designed training program should allow for:

- prior skills, knowledge and experience of the learner
- the different learning styles of learners
- the appropriate level of information presented in a logical sequence
- cultural differences that prospective learners may have
- appropriate methods to make learning an active process which involves the learner in **doing** rather than just reading, watching or hearing

Quality training relies on the ability of a course designer to consider factors which will affect the outcomes of the training.

Factors include:

1. Motivation to learn
2. Adult learning principles
3. Domains of learning
4. Active learning
5. Learner characteristics and styles
6. Training environments

1.1 Motivation to learn

It is generally accepted that before learning can take place, the learner must have a reason to learn and must be prepared to learn.

When designing learning materials, we must consider four steps in the learning process and endeavour to incorporate them in the training.

(i) a desire to learn (motivation)

(ii) the learner's concerns (apprehension)

(iii) comprehension of the learning material (recall/retention)

(iv) demonstration of learning (performance)

Motivational factors should include:

- new material to be learned must have purpose and significance
- the new material must fulfil a need
- success at learning should be recognised and rewarded
- the recognition of prior learned skills/knowledge should be used to advance the learning of new skills and knowledge

1.2 Adult learning principles

As adults, learners have different needs, and unlike children, need to be able to direct their learning process themselves. To do this we must find ways of designing and structuring the learning process. Learning materials for adults should aim to accommodate the following:

- apply problem-solving ability rather than content need
- involve the learner in an active way: being interactive
- use the learner's past knowledge as a foundation for new learning
- ensure that the learning environment is suitably organised and arranged
- base new learning activities on an analysis of the learner's needs, in agreement with the learner
- ensure that assessment of learning outcomes is understood by the learner

It is important to acknowledge that the role of the instructor is to act as a resource, to manage and guide the learning situation, not just to deliver the course content.

However, culture has a bearing on this principle. While Western style cultures generally advocate a position where students are encouraged to be self reliant and to discover related information for themselves, and the learning is therefore more "student centred", in some cultures, this is not the tradition.

Some cultures are based on a strong level of respect and submission to authority, and as a teacher is seen as an authority figure, students tend to be more passive and expect the teacher to be the expert. They are more comfortable with a teacher centred approach to learning and wait for the teacher to direct them in their learning experiences. This variation must therefore have a strong influence on how a teacher relates to a class, and whether the emphasis of the role is as a "content specialist" or that of a facilitator of learning.

1.3 Domains of learning

Learning objectives can be classified broadly in three domains:

(i) the **cognitive** domain which deals with the learning of knowledge; comprehension; the application of newly-learned material

(ii) the **psychomotor** domain which includes the development of physical skills and abilities; the learning of practical tasks that require perception, decision and action

(iii) the **affective** domain which includes the learning of feelings, preferences, values; the development of attitudes, interests and appreciation

There is no one activity that is more suitable than any other for any particular learning situation or competency; however, the table below will provide you with a basic guide for selection of types of activities. It is up to you, the teacher, your creativity, your learners and the learning outcomes to determine the most effective learning activity for your situation.

For instance, role-play can be most effective for changing people's attitudes to a given situation, or even for providing a means for learning and applying knowledge. On the other hand, a demonstration activity will provide an excellent method for a learner to begin to develop a new practical skill.

DOMAIN	ACTIVITY	COMPETENCIES
COGNITIVE	• Research project • Simulation • Role play	• Analysis, problem solving • Written communications • Organisation/planning • Reading/comprehension
PSYCHOMOTOR	• Demonstration • Simulation • Workshop	• Hand/eye co-ordination • Physical skills • Analytic/diagnostic skills • Use of tools/equipment
AFFECTIVE	• Simulation • Case studies • Role play	• Counselling skills • Sensitivity • Interpersonal skills • Social skills

Now do Activity 1 on the next page.

Activity 1

Give examples of two learning activities that you use in your industry or employment.

Describe the type of learning activity and the domain it relates to

What are the competencies that these learning activities address or reinforce?

Discuss your responses with your tutor

1.4 Active learning

It is suggested that active learning, or the process of "doing" in learning, results in more effective retention and recall of knowledge and skills.

Active learning materials should include some or all of the following:

- **problem solving activities** such as giving students a case study that poses a problem and asking them to solve the problem and give reasons for their approach. The type of case study can be focused on a technical problem relating to equipment or on a more general topic such as a personnel issue.
- **practical exercises** could include working with equipment or tools, producing a product, or less concrete activities such as designing or planning for a given outcome.
- **experimentation or learning by experience** would include all types of laboratory or workshop activities where a student is given parameters in which to find out what the results might be from certain actions. The effects of raising or lowering temperature, mixing substances, removing oxygen, cooking, burning, etc. can all be part of experimentation leading to significant learning.
- **assignments/projects** include a chosen or assigned topic in which the student researches and presents the information to the instructor or to the group. It provides the opportunity for students to express their thoughts and to research a variety of topics.
- **brain-storming** is group interaction which allows individuals to express their opinions to the group without fear of criticism, to present ideas or re-think previous ideas.
- **reflective thinking** requires the student to reflect broadly to consider past experiences and relate these thoughts to current learning activities.

1.5 Learner characteristics and styles

Research into learning styles has identified:

- the ways in which most learners learn best
- the most appropriate methods for supporting this learning

Research also suggests that most learners should be encouraged to use the learning style they do not usually favour, so that they broaden their approach and their ability to learn in most situations.

Matching delivery of instruction to the style of learning with which the learner is most comfortable is important, but we should try to broaden the way in which a learner learns.

The research suggests that learning material should include:

- focus on factual information
- the opportunity for the problem solving
- information presented in a logical and orderly sequence and in a variety of forms:

  - visuals, movement, colour, sound, static
- practical exercises before theory lessons
- experimentation and activities rather than listening and/or reading
- projects and assignments that encourage creative and reflective thinking, brainstorming, and the development of options

Trainee characteristics: The success of your training sessions will in part depend upon how well you have analysed the characteristics and differences of your trainees.

Information about trainees can be viewed in terms of:

- Content
- Context
- Characteristics

Content:

- the particular skills and knowledge they require

Context:

- where they are located – city, country, workplace
- what training environments they require and are able to access
- the purpose of their training
- time constraints:

  is the need for training urgent/not urgent: must the training be intensive or long term.

Characteristics:

- details about the trainees themselves that can influence their approach to training and their ability to take advantage of particular training situations. Such details may include their:

  age
  family situation
  educational background
  preferred learning style
  cultural background
  employment situation
  life experience
  financial situation
  motivation
  experience with technology

In any one group that you are likely to encounter, the content they are seeking is probably identical, or at the minimum, similar. But their backgrounds will vary considerably. For instance, consider these three cases:

- a woman from a well educated and financially secure family, where education is highly regarded
- a young man of the same age with different cultural values and who lacks experience with any of the educational technologies
- a man from a lower socio economic background.

These differences alone can pose significant problems for the teacher, but when the constraints of context are superimposed on this, the challenge of accommodating a class full of disparate individuals becomes a reality. It becomes essential for a teacher to use every tool available to satisfy the learning requirements of such a group.

1.6 Training Environments

The importance of establishing a training environment which is conducive to learning is an aspect that can be overlooked by trainers.

Two types of environments can be created and described as formal and informal.

Formal:

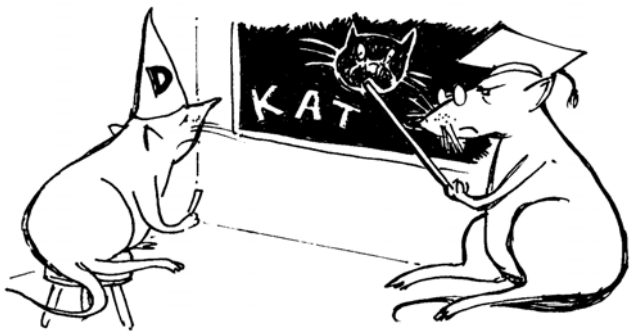
A formal learning environment is one in which the area has been specifically designed to represent a typical classroom situation with desks, chairs, markerboards and other support equipment such as overhead and slide projectors, videos and so on.

Formal learning environments are usually required to train groups of people, both small and large. There are significant advantages in having space with all the facilities and resources at hand, especially if the instructional methods chosen by the trainer require the use of audio-visual equipment, or space for role-plays, simulations or small group tutorials.

Informal:

An informal learning environment is more difficult to define, but can be any workspace that can be adapted for one-to-one or small group learning activities.

Some of these spaces could be meeting rooms, offices, cafeterias or outdoors. Informal learning environments are more conducive to success for adult learners than formal ones because many people relate formal classroom-type learning situations with past school experiences, and some of these may have been quite negative.



For example, you may be responsible for the training of learners who have recently left a formal learning environment.

They will probably benefit from being in a "work environment", where the informality of the learning is based on one-to-one interaction between the trainee and the trainer, and where the trainee can observe the day-to-day activities and feel part of the team.

If placed in a formal learning environment, the trainee's motivation to learn may be decreased because the environment is too similar to what the trainee has just left.

The case for and against formal or informal learning environments is not clear cut.

The choice of a formal or informal environment will be dictated by:

- the trainee(s)
- the kind of learning which needs to take place e.g. acquiring knowledge or manipulative skills
- problems with a work environment e.g. noise, interruptions by telephones or people
- the training methods and instructional materials to be used
- the subject matter or content of the training session

The amount of thought and effort that you, the trainer, put into creating a comfortable learning environment can directly contribute to the success or failure of the training session.

Assignment No. 1

Unit 3.1 Instructional Learning Strategies

You are now required to do **Assignment 3.1 – 1** which will be found at the end of this unit or distributed by your Tutor.

Section 2 Identification of instructional strategies

Lessons

The Concise Oxford Dictionary defines a lesson as:

> "*an amount of teaching given at one time; systematic instruction; the time given to this",*

which implies an instructor or instruction and a learner, but places no restrictions on the strategies that may be used.

A lesson is a form of classroom organisation in which a group of learners assemble, with an instructor, in a suitable place for a pre-determined length of time to take part in learning experiences.

A lesson can be used to co-ordinate the learning objectives of a group of trainees, and also stimulate discussion on relevant matters.

So let's start by identifying some often used methods of instruction, and follow that with the advantages they offer and the limitations that must be considered before choice of method is finally made.

2.1 "Chalk and talk"

Lectures

A lecture is an organised verbal presentation of information. A lecture can:

- provide a structure to guide learners in learning a topic.
- be used to give an overview of a complex topic, or it can provide a broad view with emphasis on parts of the topic.
- can provide information that is not available elsewhere.

Advantages:

- facts and figures can be presented quickly
- emphasis can be placed where the instructor wishes
- a means for providing background information
- allows flexibility in class size

Disadvantages:

- difficult to adjust to individual learner's speed of comprehension
- mostly a one-way communication
- limited trainee participation or activity to maintain interest
- no direct check on learning taking place
- difficult to maintain attention and interest
- effectiveness depends on lecturer's skill and personality

Discussion

A discussion is group interaction in which individuals can express ideas, opinions and thoughts. A discussion can:

- provide a means for seeking ideas and judgements concerning the topic.
- allow for differences of opinions and provides the instructor with an opportunity to get to know the trainees.
- allow you to listen to the opinions of others and to stimulate new interests.

Advantages:

- encourages trainee activity
- maintains interest
- shares experiences of trainees
- gives trainees a sense of responsibility for learning
- provides feedback to instructor on progress made

Disadvantages:

- can be time-consuming
- requires preparation of stimulating questions
- instructor must be able to think fast and adapt to thoughts presented
- requires instructor skilled in human relations, directing and controlling the discussion
- instructor needs to summarise clearly, remembering who contributed the main points

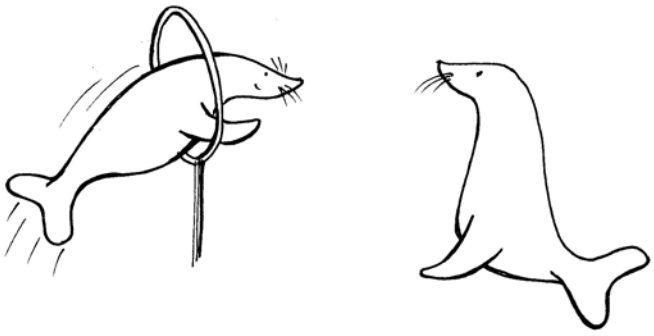
2.2 Demonstration

Demonstration calls for an organised, planned performance of procedures and processes which has at least two parts:

- a short preparatory period during which the purpose of the
- demonstration is presented
- the actual performance which can include verbal explanation.

This method can be used to demonstrate new skill experiences. Demonstrations can:

- provide visual experience of events or procedures that are difficult to describe.
- give an overview of a task or procedure before trainees begin to practise.
- be recorded on video for subsequent replay.



Advantages:

- saves time and talk
- easier to watch than to listen to a verbal description
- helps assure understanding
- realistic: adds variety
- demonstration provides the model and standards for trainee performance

Disadvantages:

- requires preparation for effective demonstration
- outdoor demonstrations affected by weather
- may require expensive equipment and materials

2.3 Practical Activity

Practical sessions provide real experiences in procedures and processes.

Practise gives learners the opportunity to:

- formulate and investigate problems
- provides a "hands-on" approach to real work skills which in turn generates learner confidence.

Advantages:

- saves time and talk
- gives learners confidence when they perform adequately
- improves personal skills
- active trainee participation

Disadvantages:

- may be difficult to provide expensive equipment and materials
- requires skilled instructor to watch trainees practise
- requires careful scheduling of tasks for time allowed
- instructor may miss one or more tasks to be completed in a set sequence
- equipment used for practise may not be relevant to that used in industry

2.4 Project-based training

A project-based training activity is either undertaken by the trainee alone, or as part of a small project group of two to three trainees. The research area, topic or assignment may be determined by the trainer or chosen by the trainee. There are usually established standards set which meet the outcomes of the project, and a time when the activity must be completed. It is usually presented in written form, although it can be presented in other media. It may be necessary for the trainee or group to include verbal comments in the final presentation.

The **purpose** for this instructional strategy is to:

- increase self-reliance and self-learning;
- increase problem-solving, data collection, analysis and reporting skills;
- improve ability to communicate ideas, develop co-operation, participation and work team skills.

Advantages:

- allows trainees to research or analyse in depth, a topic of interest to them
- develops the trainee's ability to analyse problems and issues
- provides opportunity for the trainee to plan and organise a self-directed training activity

Disadvantages:

- in a group project, some trainees may not contribute fully
- it may be difficult to determine whether the project outcomes are the trainee's own work
- assessment can be time-consuming
- if the project criteria and "ground rules" are not clearly established, trainees may find this approach time-consuming and frustrating

Summary

For a project activity to succeed make sure that a clear set of rules apply.

1. Are the expected outcomes clearly stated?
2. How should the results be presented?
3. When should the project be completed?
4. How will the individual's contribution be measured?

2.5 Individual and team work

Many of our learning experiences take place when we are part of a group.

When a group of people come together there are many needs which require attention.

Task: Every group needs a worthwhile task, and all members of the group must know what it is, if the interest and commitment of the group is to be meaningful.

Awareness of the task, or the lack of awareness, often stimulates interaction between group members. Most groups will be aware of the task and operate accordingly.

Individuals and their behaviour: Every group is made up of individuals, each one bringing into the group situation their own background, experience, attitudes, prejudices. Each individual brings what can be described as their own needs as a person. These may be needs for status, recognition, acceptance, the need to belong, to participate in a worthwhile task, and so on.

Sometimes, for personal reasons, group members may hide their individual needs, but more often groups overlook individual needs because of the desire to get things done.

Team maintenance: It is important to have harmony between people. Group members should derive satisfaction from membership of the group. It is important to meet the requirements of the group's task. If group decisions are to be reached and carried out, the group must be held together. Group maintenance is the need of the group to maintain its cohesion and gain satisfaction from its activities.

Group maintenance is the responsibility of every member of the group.

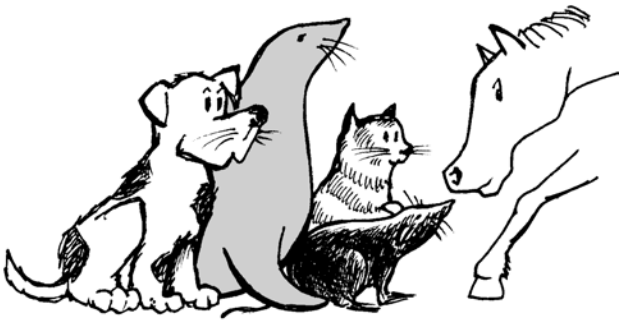
Group or team responsibilities

Group participants can:

- enter into discussion voluntarily
- share ideas and experiences
- help the group understand what is said
- listen actively
- draw all participants into discussion
- keep discussion on the track
- prevent domination by a few
- indicate agreement/disagreement
- indicate interest in discussion
- build on others' contributions
- help the group work out conflict and problem situations

The group leader must accept responsibility to:

- initiate discussion
- encourage free and balanced discussion
- handle dominant participants tactfully
- see that all persons participate freely
- draw participants into discussion
- remain neutral
- ask for and give clarification
- make sure differing views are heard
- see that all contributions are considered
- keep discussions on the topic
- act as a catalyst in discussion
- provide summaries when suitable



Advantages:

- involves trainees as active participants in the learning task, rather than as passive listeners
- helps trainees and instructors to get to know each other
- develops skills in teamwork and co-operation
- provides practise in applying knowledge for solving problems individually or in the group
- provides opportunities for trainees to have close contact with an instructor and to discuss any information they are not sure about

Disadvantages:

- instructors may be tempted to do most of the talking and possibly overlook valuable ideas from trainees and the sharing of them
- talkative trainees may dominate the group, making it difficult for quiet trainees to enter the discussion
- group discussion may become side-tracked from the main purposes of discussion, thus wasting valuable time

Now do Activity 2.

Activity 2

Select ***three*** of the Instructional Strategies we have discussed so far (lecture; discussion; demonstration; practical sessions; project-based and individual and group work), and list some of the ways you might overcome their limitations or disadvantages.

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_____(continued)

Discuss your responses with your tutor

2.6 Instructional media

Instructional media or training aids are anything that helps us to get our message across to our trainees.

With this in mind let us review some commonly used educational or instructional media, reasons for selection and how to use them.

The most commonly used instructional media in the education sector and increasingly in the business and industry sector are:

- chalkboards and whiteboards
- notes and handouts
- wall charts and diagrams
- overhead projectors and transparencies
- 35mm slide transparencies
- models and realia (the real thing)
- audio tapes and CDs
- motion picture film
- videotapes
- computer assisted learning
- computer screen projection
- computer technology
- simulators

Which is the best medium for a particular job?

Some people believe that the best medium is the least costly one that works.

How do we select the most appropriate medium ?

- Decide what the message is that you want to deliver

or

- Define the objectives of the learning experience

- Consider any constraints, such as:

  Costs
  Learner viewer limitations
  Space
  Availability
  Size of group

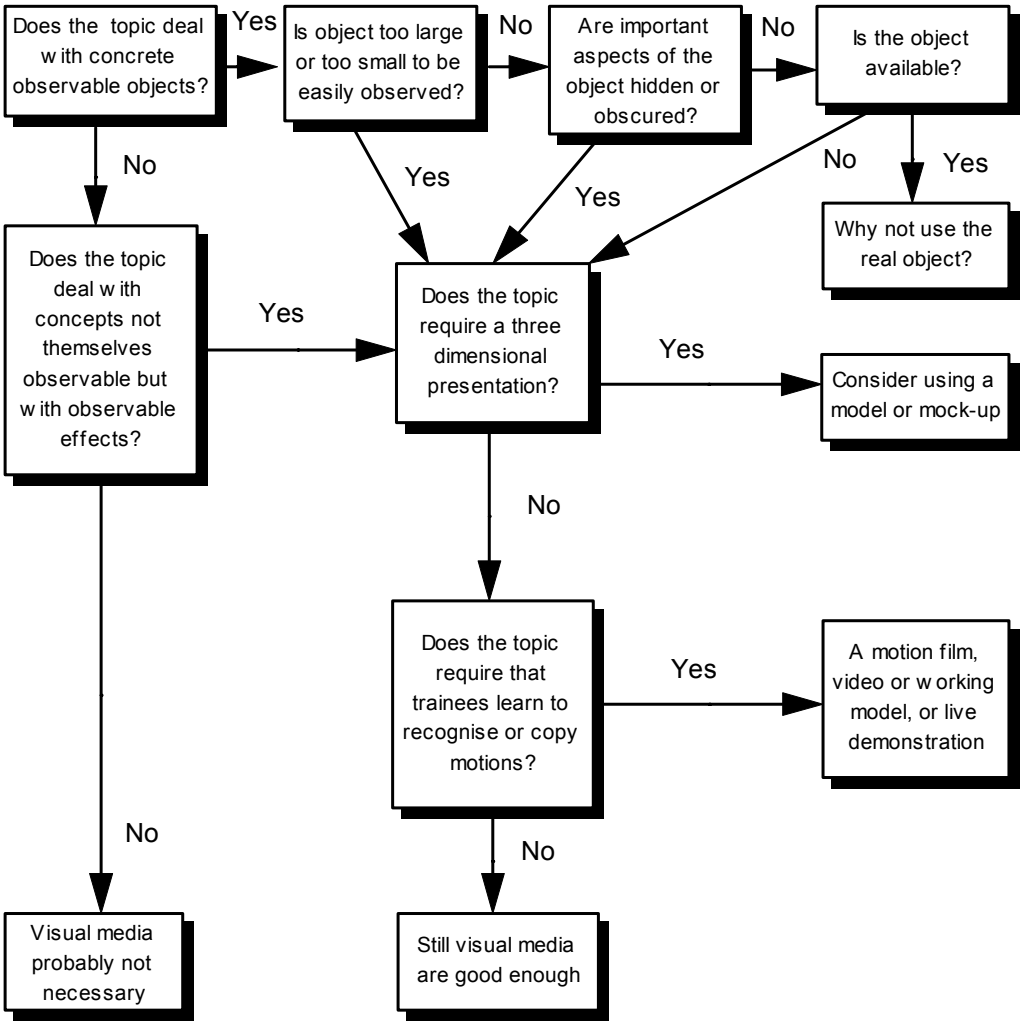
- Decide what the requirements of a training aid are that:

  you **must** have
  you **should** have
  would be **nice** to have

- Finally: Select the training aid which will give you:

  all your **must** haves
  the greatest number of **should** haves
  the greatest number of **nice** to haves

Selection and use of instructional media



Use of instructional media

In general, training aids should be on show only while they are in use and should not be visible when not in use, because they can distract the trainee's attention. The training aid should show sufficient detail to enable the training objective to be met without being cluttered with too much distracting detail.

Chalkboard/Whiteboard

This is the most commonly used training aid, and is used extensively in group instruction. It is versatile and easily used, but practise is essential if the presentation is to be neat and legible.

When using the chalk board:

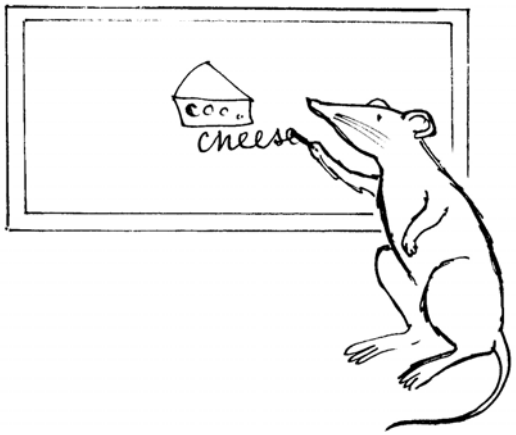
- Be careful to ensure that all trainees can see the board clearly. Check that reflected light does not impair visibility.
- Use colour where possible but ensure that all colours are visible to all trainees (some may be colour blind).
- Write carefully and neatly.
- Don't talk to the board: maintain trainee eye contact.
- Give trainees time to write down important points, remembering that they cannot write and listen at the same time.
- Write new terms on the board so that trainees see and hear the new words.
- Plan development to allow for earlier information.

Advantages:

- versatile in use, flexible in operation
- instructional messages can be progressively built up
- may be used by trainees as well as instructor
- can be cleaned and re-used many times
- useful for spontaneous writing, sketching, emphasising important points
- coloured chalk/markers can be used.

Disadvantages:

- information written or drawn on the board may be illegible to trainees
- size of board may limit/distort the scope of the instructional message
- information can be accidentally removed
- not possible to simulate movement
- can only display static two-dimensional image
- whiteboards can shadow, making it difficult to remove written work
- instructor has back to group when writing on the board

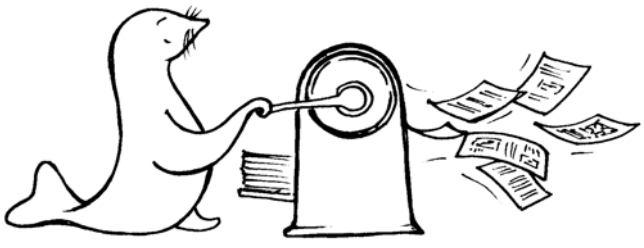


Notes and handouts

Notes and handouts are a tried and tested method of ensuring that trainees do have access to the main elements of instruction.

Print or text based materials can be easily designed and produced to include a range of various stimuli, including:

- text - the material to be learned
- visuals - supporting artwork and photography
- activities - problem solving, practical exercises
- interaction - allow the learner to make choices
- self assessment tasks/exercises
- feedback on activities and tasks
- checkpoints - interaction with trainers



Advantages:

- learners can work through material at their own pace
- material can be readily reviewed and updated
- visual material, artwork/photographs can be readily incorporated
- material can be cheaply produced and distributed
- very transportable
- can be electronically distributed
- can be used in a variety of environments—work, home, training workshop
- comprehensive and detailed

Disadvantages:

- printing costs can be high for high quality full-colour production
- not suitable for competencies that require motion as part of learning, e.g. demonstration of an action skill
- text-based material may not suit all learning styles: – may need to be combined with other media
- take time to prepare
- give to little or too much detail
- diagrams lose fine detail when copied or reduced in size

Wall Charts and Diagrams

Wall charts and diagrams can include display boards, and these can be either the regular pin board, magnetic or felt boards.

They are most often used to develop a progressive presentation and allow trainees to participate actively by assisting in the progressive development.

The strength of this form of presentation is its ability to show relationships.

Wall charts have a very valid use as an instructional tool when they portray a sequence of procedures and are placed strategically close to the equipment item to which they refer.

They can be used to display safety precautions as well as list the steps required to operate the equipment.

Whether you use a semi-permanent wall chart, or a display board which is used actively during instruction, the key requirements of legibility and comprehension must apply to their production.

Advantages:

- allow close up, detailed study at trainee's own choice
- require no equipment for use and can therefore be used in low resourced facilities
- economically and easily prepared
- can combine real life illustration (photographs) diagrams, cartoons and text
- production can be part of trainees learning process—ideal for project type work
- can be adapted from existing materials
- diagrams can be adapted for use in print, projection, video and computer format
- easy to transport

Disadvantages:

- charts are cumbersome to store and transport
- tend to be displayed beyond their usefulness
- can be time consuming to prepare in relation to their instructional impact
- not always easy to amend
- take time to prepare
- give too little or too much detail
- diagrams lose fine detail when copied or reduced in size

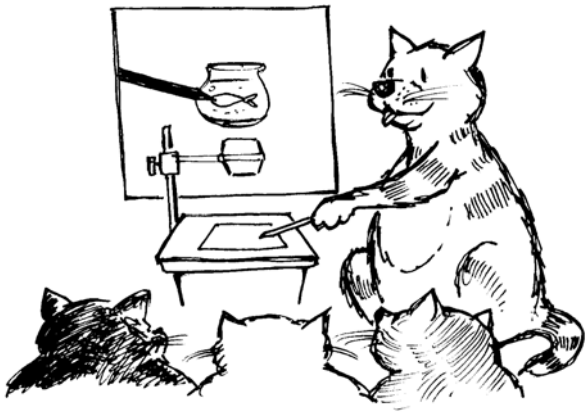
Overhead projector (OHP)/overhead transparencies

The OHP can be used to show diagrams or information that would take too much time to put on a board and again is a medium most suited to group instruction.

The OHP can be used to show limited movement and to stress important points.

The following will ensure the best results can be obtained from the use of the OHP.

- The screen should be viewed between two and six screen widths from the screen.
- Transparencies should show less than eight lines of information.
- Each line of information should not be more than six or seven words long.
- Normal type script is too small for use on a transparency.
- Transparency lettering should be a least 4 mm high for viewing at four screen widths from the screen.
- Place the transparency on the projection plate so that you, the instructor, can read the transparency when facing the learners.
- Before the training session, check that the OHP is properly framed on the screen.
- Turn the projector off when it is not in use, or when changing transparencies.
- When pointing to features on the transparency use a small pointer (pencil) on the projector plate—don't point at the screen.
- Use the recommended materials when making transparencies.
- When making a transparency remember that diagrams are more effective than words.



Advantages:

- images can be prepared easily and quickly
- transparencies can be produced by hand or by photocopying
- viewing takes place in normal room lighting
- instructor faces trainees when operating the projector
- coloured images can be projected
- can be used with small or large groups
- information can be revealed gradually
- information can be built up with a series of coloured overlays
- can allow information to be added during a session
- can be photocopied to double as handouts

Disadvantages:

- poorly-prepared transparencies (e.g. small lettering, intricate diagrams) may be difficult to comprehend
- images are static
- use is mainly teacher-controlled
- equipment can fail (blown bulb) interrupting the session
- faults in transparencies are magnified on-screen
- projector can be difficult to position satisfactorily

35 mm slide transparencies

35 mm slides, viewed via a slide projector, have given way to more sophisticated media today, but they are still a very valid educational medium. A few slides, taken by the teacher in a local environment, can be a motivating and enlightening addition to a lesson.

They have the capacity to show close up detail in an enlarged format to a large group or individual and can bring to the classroom the real experiences of both the teacher and the trainee.

Transferred to video, they have an added value as they can often capture visuals that cannot be obtained with a video camera.

Advantages:

- are easily transported and stored
- are suited to large and small groups
- use full colour, economically
- use projectors that are relatively simple and trouble free
- give flexibility in the order information is presented
- can be easily prepared, duplicated, updated or replaced
- can be used to produce colour prints or transferred to video

Disadvantages

- producing and preparing slides takes time
- the classroom must be darkened
- the teacher looses eye contact with the trainee
- requires detailed cataloguing for most efficient use
- student use can produce difficulties such as lost slides or spilt slides.

Models and Realia (the real thing)

Generally, the real thing is the best training aid but for various reasons a model might be preferable. The real thing might be too big, or too small, or hazardous, or hidden from view.

Another problem with the real thing is availability. A modern airliner can cost hundreds of millions of dollars and so is expected to earn revenue rather than be available for training.

Simulators often provide an ideal training situation. They can provide a copy of real life where errors may be made with little consequence. They can be made for individual or team training. Simulators seek to mirror real-life situations. It can be as simple as a paper and pencil simulation or as complex as a computer-controlled engineering function.

Models should show all of the important points while cutting out the irrelevant parts.

It is possible that a number of models might be required, each being more complex in order to build from the basic concept to the practical system.

Good training aids can be made from out of date or unserviceable equipment or parts. These can be sectionalised to show movement process or layout.

Be careful to ensure that people are protected from injury by moving parts

Advantages:

- presents reality to training
- increases trainee confidence
- gives "hands-on" experience
- encourages teacher/trainee co-operation
- experience with the real thing can help foster links with industry
- offers a 3 dimensional view
- involves more than one sense (ie sight, touch, and smell)
- opportunities for practical demonstration
- involves students in design/building/operation of models

Disadvantages:

- may be expensive to arrange
- may not justify the time and expense required to prepare the operation
- safety factors may demand special consideration
- may be unsuitable for large groups
- may represent a limited sample
- can be fragile and easily damaged

Audio tapes and CDs

Audio tapes and CDs can be used to support a lecture, or written or visual material. They are often a valid component of a self study package.

In some instances, the tape or CD can be the prime instruction, as in distance education packages, or in teaching subjects or topics that depend on sound. They can be a necessity for many who have problems with comprehension or language differences.

Advantages

Audio tapes and CDs are:

- readily available
- easy to transport
- can be paused at critical points for discussion
- provide variety in delivery
- are easy to integrate with visual presentations
- tapes can be produced by teachers and trainees for specific projects
- trainees can be given copies of tapes and CDs for private own study

Disadvantages

- require equipment and power for use
- tapes deteriorate with frequent use
- individual segments can be difficult to locate

Video Tapes

Video has become a popular training aid for both group and individual instruction because of the availability of professionally produced training tapes, and the range of easily used video recording and playback equipment for in-house productions. It is now possible to produce simple, but effective training material quite easily and cheaply.

Because the general public has become accustomed to lavishly produced TV presentations, trainees can be critical of poorly produced training videos. The closer the trainees are to the production of a tape, the more forgiving they are of poor quality. High production standards would not be expected of an in-house production of a procedure, but if the tape was of a more distant process, professional standards would be expected.

If video is to be used for self study, the design of the materials needs to be carefully considered to allow learners the necessary control over the program. This control can be achieved simply by advising the trainee to push the “stop” or “pause”, giving time to think or reflect, do a problem solving activity, or do a practical exercise.

When using video tapes as an instructional strategy, either for group or individual use, the following should be noted. Video tapes can be used as either an advance organiser, a specific training activity or for revision. The tape can be stopped, paused, or backed up to a specific section to point out or discuss important points. In using video, the following should be noted:

- Brief trainees on what to look for, either verbally or by written instruction
- Ensure the exercise is not a passive one by making the trainees respond in some way
- Remember, you don't have to show the entire tape, just the relevant parts.
- Stop the tape, or request the trainee to stop the tape, pause, back up to a specific section and point out or discuss important points.

Advantages:

- can bring reality into a training facility
- full motion vision
- allows inclusion of graphics and animation
- ability to display colour
- extreme close up capability
- can simulate time lapse
- replay equipment widely available
- can be utilised without further processing—instant replay
- final product is readily transported
- can pause or rewind the tape for discussion

Disadvantages:

- high quality production equipment is expensive and requires specialist personnel
- production costs are high
- production planning is very time-consuming and requires specialist skills
- difficult to make video production interactive and self-paced
- expensive replay equipment required
- is often used indiscriminately

- size of the screen limits group size
- equipment often not compatible
- in-house productions often amateurish

Computer Assisted Learning

Computer assisted learning is an instructional strategy that is more pertinent to self study than to group instruction. However, with the advances in technology that allow for direct projection onto a large screen, it is possible to utilise this medium as a group instructional strategy.

Computer assisted learning or training relies on the technology of computers to present stimuli for learner response. After some form of response is offered by the learner, the computer can then assess the appropriateness of the response and provide the relevant feedback.

This interaction between learner and computer is the most powerful single benefit of computer-based self-paced learning programs.

A learner can be provided with a very high degree of learner control by making an almost indefinite number of choices that will affect what is learned and in what sequence it is learned.

Computer assisted learning can encompass programmes on local area networks (LAN), computer discs, or Internet access.

Advantages:

- provides high levels of interaction
- highly structured/organised
- high levels of learner control - user driven
- modern equipment allows full movement, colour and sound
- provides ability to assess and record results
- can track trainee progress
- can accommodate a range of learning levels
- can be distributed easily on disc
- lap tops and discs provide high transportability
- a wide variety of software and computer packages are available
- Internet provides access to international resources for teachers and students
- Internet information can be downloaded and printed

Disadvantages:

- programs expensive to develop
- complex equipment needed by developer and learner
- program transferability dependent on the learner having matching equipment
- lacks interpersonal contact (this could be organised as part of a learning exercise)
- suitable for group learning situations only when specialised replay equipment is available
- special facilities required
- computer skills required

Computer Screen Projection

Amongst the latest technology for group presentation is Computer Projection. This allows you to create high quality graphics and "screens' on the computer, save them as a file, and then project them using a specialised computer screen projection unit.

Software packages allow for the easy production of professional, colour presentations that can be prepared in far less time than that required for the preparation of an OHT by more traditional methods. The images can also be printed out and duplicated for handouts.

Advantages

- laptop computers and computer discs are readily transportable
- material can be changed during presentation
- material can be reorganised easily
- presents a very professional image
- caters to large groups

Disadvantages

- although you may have the equipment to produce the presentation, equipment may not be readily available at the site of the presentation
- both the developer of the presentation and the ultimate user need computer skills
- equipment is expensive and very quickly outdated
- computer equipment needs to be compatible
- equipment failures and lack of appropriate equipment at presentation site indicate that a "back up' should be carried (such as OHT)

Simulators

Simulators, or simulation, are the closest instructional tools to actual reality. Simulators were once considered well outside the scope of most educational or training institutions, but the advent of the computer has meant the development of an incredible range of simulation – from playing golf to flying an aircraft. Video games also provide experience via simulation.

But simulation can also be as simple as a role-play exercise, requiring little equipment or props. Telephone techniques can be taught with simple simulation, using little more than two phones and a role play exercise. Customer Relations can also be very effectively taught using role play, as can Management skills.

They provide a safe learning environment where trainees can take risks knowing that the consequences of an error are not critical to life or equipment.

Advantages

- a controlled interactive learning environment
- no interruption to normal production or process
- no potential for damage to systems, equipment or personnel
- an opportunity to learn and assess skills in a working combination
- immediate feedback on performance

Disadvantages

- can be expensive to set up and maintain
- can be difficult to keep up to date
- time and access for trainees may be limited
- they may not incorporate important elements of the real environment
- learners may become overconfident of their skill level

Now do Activity 3 on the next page.

Activity 3

(a). In your educational or industry environment, are your training session group instruction, self-study, or a combination?

_____

(b). What training aids do you use in your training sessions?

_____

_____

_____

_____

_____

(c) Why do you think they are effective?

_____

_____

_____

_____

_____

_____

_____

_____

Discuss your responses with your tutor

2.7 Self-paced study

What is a self-paced study program?

It is a program prepared so that it includes all of the information required by a learner to be able to develop competence in the area of skills offered by that program.

Distance education packages can be considered examples of self-paced or self-study materials as the students are not locked into a specific place or time to study.

Rationale for self-paced study as an instructional strategy

Self-paced or self-study programs can provide the most flexible way of delivering training.

Using such a program, learners can proceed at their own pace and allow for **flexibility** factors such as:

- the pace of learning can be determined by the learner, not the instructor
- the learner has control over what is to be learned
- there is allowance for material previously learned: recognition of prior learning (RPL)
- progress can be assessed at a time which suits the learner

No longer is the control of learning in the hands of the trainer.

A significant amount of control is given to learners in determining their needs and the way in which learning will occur.

The main purpose for developing a self-paced study program is to provide the most flexible, appealing and useful learning process for your learners.

Criteria for effective self-paced study materials

Self-paced study programmes or materials have changed over the years, reflecting the changes in technology and the use of computers.

Print-based materials are still the most common and they are the simplest and the least expensive form available. Often they can be produced by one person, rather than a team, but the base level of skill required is a subject specialist who has good instructional design skills as well as the necessary production skills.

For a larger scale of operation that might include additional media, a team of production people would be needed, including at least:

- the subject expert
- writer/instructional designer
- graphic artist
- editor/proof reader
- word processing
- photographer or other equipment operators
- publisher

But whether the materials are print based or are developed in more sophisticated media, they must not only provide the content but must also incorporate strategies that assist the learner.

These strategies must be able to meet all of the learner's needs, and foresee difficulties the learner may face, and could include some, or all of the following:

- communicate to the learner what s/he must do and how s/he must do it
- ways of helping the learner work through the content
- communicate to the learner what s/he must do on completion of each learning step
- provide activities and exercises which allow the learner to practise new skills and knowledge
- motivate and encourage the learner to become actively involved in the learning materials
- provide feedback on the activities and exercises
- present the content with due consideration of the learner's background and previous knowledge
- provide methods for reinforcing learning at regular points

- present the information to be learned in easily learned "chunks" of content
- ensure that the material is presented in a logical sequence
- help the learner summarise and reflect on what s/he has learned

Advantages:

- learners can study at their own pace
- learning can take place in a variety of environments, e.g. home, work, college etc.
- learners have control over what is to be learned
- progress can be assessed at a time which suits the learner

Disadvantages:

- some students may not adapt readily to self-paced study
- some learners may lack confidence in making study decisions
- development of self-study programs takes considerable time and requires careful preparation and skill in instructional design
- a self-study program may be prepared at a level that does not cater for all of its target audience.

Now do Activity 4 on the next page.

Activity 4

1. Using the experience you have gained in your own training and employment, as well as the information presented in Section 2.6, Instructional Media, and this Section (2.7),list the most important features of self-study or self-paced learning as an instructional strategy.

(continued)

2. When you purchase a piece of equipment, it normally comes with an instruction Manual. This manual usually explains how to set up the equipment, how to operate it, and often gives trouble shooting advice. The manual is an example of self study learning material.

   "The Owners Manual" for a vehicle is another example of self study materials.

   From your experience in being required to use and rely on these manuals, consider whether these are examples of good study materials or otherwise.

   List some of their disadvantages or limitations and their strengths or advantages.

Now discuss your answers with you tutor

2.8 Research

Research provides a chance for students to express their ideas and thoughts. It also provides an opportunity for a student to explore a variety of topics. It can create new interests and it presents possibilities for investigating the community, and finding available resources: libraries, sources of technical information, interviews with industry contacts etc. Research activities can improve communication skills.

If a research type activity is selected as an instructional strategy, it is important to:

- ensure adequate guidelines are given to prevent trainees going off-track
- be confident that all trainees have the academic and research skills needed to complete the task successfully.

Advantages:

- can assist students to see that there are several ways of viewing things
- an active, participative learning activity
- increases self-awareness, improves speaking and listening skills
- application of organisational skills
- develops writing and reporting skills
- develops enquiry skills

Disadvantages:

- may be time-consuming
- unless the purpose of the research is clearly stated, students may not realise its intention
- assessment can be time-consuming
- requires a knowledge of research processes

2.9 Live Work

'Live work' describes the use of an actual task or process in the workplace to instruct learners in the use of equipment, processes and procedures and to test their skills. It may represent an extension of simulation; for example, where a college sets up its own restaurant or another service that is staffed or operated by learners under supervision.

Live work can be used to:

- give learners practical experience in a 'real' environment
- provide a real environment that still allows the rate of instruction to match the rate of learning
- enable learners to test theory in practise
- provide assessment and self-assessment opportunities.

Advantages

- the learner 'learns by doing' and can apply the learning immediately
- 'real work' provides relevance and a sense of achievement for the learner
- problems can be identified and dealt with immediately
- immediate feedback on performance can be given
- the learning environment incorporates the variations that go with the workplace
- it provides experience of the real work in a safe, supervised environment

Disadvantages

- live work requires planning and may be difficult to arrange
- it requires close supervision
- learning activities may interrupt workplace activities or processes
- noise and other activities may distract the learner
- the learning experience may be interrupted by factors beyond the instructor's control.

Delivery Mechanisms

We have been discussing instructional strategies, and most of these can be delivered via either on-campus or off-campus, face to face or by distance education. Whether a programme is offered via face to face instruction or by distance education will impact critically on the instructional strategy used. Many strategies can be used comfortably in either delivery mode, and technology is making it possible for there to be no limit on the strategies that can be utilised for distance delivery.

Let us look at what we mean by each of these delivery mechanisms.

Face-to-Face

Face-to-face, as the name implies, means that teacher and student are in the same place, at the same time and have direct contact with each other and those within the group.

This is the means of instruction most of us are really familiar with, and how we obtained our basic education. It has many advantages but also some disadvantages

Advantages

- Large groups of students can be addressed at the same time creating cost efficiency
- Each student experiences the same instruction
- Scheduling and time tabling are manageable
- Teachers are in control and know exactly what aspects of the curriculum have been covered
- Institution administration is simplified
- Allows for strong group identity
- Encourages the development of leaders
- Allows for immediate interaction between teacher and students and between students

Disadvantages

- It is difficult to cater to individual students
- The pace of instruction may not be suitable for all students
- Some students can be lost in the group and not achieve the desired outcomes
- In large groups it is difficult to offer a wide range of learning activities

- Provision of multiple items of equipment for class use is expensive
- Can inhibit the social development of less confident students
- Tends to cater for the "average" student and does not always address the needs of the gifted or the limited student

Distance Education

In 1980 a number of definitions of distance education were brought together in an article "On Defining Distance Education" (Keegan 1980). One basic element of these definitions, which was common to nearly all was the separation of teacher and learner. A summary of these definitions would be:

> *"Distance Education is any formal approach to learning in which the majority of instruction occurs while the student is separated by time or distance from the teacher or educational/training facility offering the instruction"* (Keegan, 1980)

The definitions also included reference to the use of media in the learning process.

Successful distance education systems were established many years ago in Australia and Canada to reach students living in remote areas, and this concept of educational access is now being used extensively all over the world.

Traditional distance education has been delivered from a host institution by means of "learning packages". Students have been sent packages of materials outlining various tasks to be performed towards their educational objectives. Students send responses to their teacher or tutor at various stages of the programme and in turn, the teacher or tutor returns their responses with comments and corrections.

The writers are generally experienced teachers with strong instructional design or curriculum skills. The packages they produce are primarily dependent on printed materials, but more recently other media have been included such as video, audio tape, computer disc and recently programmes have been offered "on line".

In distance education, as in regular classroom teaching, contact between students and teachers is invaluable, as is contact between student and student. The contact enhances the student's socialisation and learning, which would be reduced if they only experienced their own company in their own locality.

Field visits, excursions, seminars, teleconferences and on-line chat sessions can assist in supplementing the correspondence teaching and provide more personal contact between the students and the staff who teach and mentor them.

Students are encouraged to make regular contact with teachers, especially using telephone calls and where possible, personal visits.

Advantages

- encourages access and equity to education
- students can gain access to education and training regardless of their location and time constraints
- they can study at a pace that suits their ability
- they have the time to seek assistance and additional resources from a variety of sources
- they receive personal and direct feedback on their progress
- instruction is consistent and does not depend on the disposition of the teacher at a particular time
- distraction can be reduced by the learner's being able to identify personally satisfactory study times
- economies of scale can be achieved

Disadvantages

- implementation can be politically driven
- high establishment costs
- requires training for those involved in delivery
- student support not always either adequate or appropriate
- learning packages are not always of an adequate standard to allow student progression without frustration
- high attrition rate
- coping with study together with employment and family responsibilities can create student anxiety resulting in lower achievement
- can be a very prescriptive and have a high behavioural orientation, limiting cognitive development

Activity 5

You have now been involved in this example of a distance education programme. For you personally, in your particular situation, what are the advantages and disadvantages that you have found of studying by this method? List these using the following page.

ADVANTAGES	DISADVANTAGES

Discuss your responses with your tutor.

Summary

Advantages and disadvantages of Instructional Strategies

	Advantages	**Disadvantages**
Lectures	• facts and figures can be presented quickly • emphasis can be placed where instructor wishes • a means for providing background information • allows for flexibility in class size	• difficult to adjust to individual learner's speed of comprehension • mostly a one way communication • limited trainee participation /activity to maintain interest • no direct check on learning taking place • difficult to maintain attention and interest • effectiveness depends on lecture's skill and personality.
Discussion	• encourages trainee activity • maintains interest • shares experiences • gives trainees a sense of responsibility for learning • provides feedback to instructor on progress made	• can be time-consuming • requires preparation of stimulating questions • instructor must be able to think fast and adapt to thoughts presented • requires instructor skilled in human relations, directing and controlling discussion • instructor needs to summarise clearly, remembering who contributed the main points
Demonstration	• saves time and talk • easier to watch than to listen to a verbal description • helps assure understanding • realistic: adds variety • provides the model and standard for trainee performance	• requires considerable preparation for effective demonstration • outdoor demonstrations affected by weather • may require expensive equipment and materials

	Advantages	Disadvantages
Practical Activity	• saves time and talk • gives learners confidence when they perform adequately • improves personal skill • active trainee participation	• may be difficult to provide expensive equipment and materials • requires skilled instructor to supervise • requires careful scheduling of tasks for time allowed • instructor may miss one or more tasks to be completed in a set sequence • equipment available for practise may not be what is used in industry
Project Based	• allows trainees to research or analyse in depth, a topic of interest to them • develops the trainees ability to analyse problems and issues • provides opportunity for the trainee to plan and organise a self directed training activity	• in a group, some trainees may not contribute • difficult to determine originality • assessment can be time consuming • if project criteria and ground rules are not clearly stated, trainees may find this approach time consuming and frustrating
Individual and Team work	• involves trainees as active participants in the learning task, rather than as passive listeners • helps trainees and instructors to get to know each other • develops skills in teamwork and co-operation • provides practise in applying knowledge for solving problems individually or in the group • provides opportunities for trainees to have close contact with an instructor and to discuss any information they are not sure about	• instructors may be tempted to do most of the talking and possibly overlook valuable ideas from trainees and the sharing of them • talkative trainees may dominate the group, making it difficult for quiet trainees to enter the discussion • group discussion may become side-tracked from the main purposes of discussion, wasting valuable time

	Advantages	**Disadvantages**
Media—collectively	• increase trainee motivation • can replace reality • can be used repeatedly to maintain quality in instruction • an integral part of instruction	• can be costly to produce • replay equipment not always available • use must be planned for • can be used indiscriminately • replay equipment often unreliable
Self-Paced Study	• learners can study at their own pace • learning can take place in a variety of environments, e.g. home, work, college etc. • learners have control over what is to be learned • progress can be assessed at a time which suits the learner	• some students may not adapt readily to self-paced study • some learners may lack confidence in making study decisions • development of self-study programs takes considerable time and requires careful preparation • a self-study program may be prepared at a level which does not cater for all of its target audience
Research	• can assist students to see that there are several ways of viewing things • an active, participative learning activity • increases self-awareness, improves speaking and listening skills • application of organisational skills • develops writing and reporting skills	• may be time-consuming • unless the purpose of the research is clearly stated, students may not realise its intention • assessment can be time-consuming
Distance Education	What were your responses here?	And here?

Activity 6

Think about your learning and or training experiences.

Based on your experiences, give examples of the types of learning that you enjoyed most.

Why do you think this type of learning suited you?

(Include in your answer any thoughts you have on the learning materials that may have been used).

Assignment No. 2

Unit 3.1 Instructional Learning Strategies

You are now required to do **Assignment 3.1 – 2** which will be found at the end of this unit or distributed by your Tutor.

Section 3 Characteristics and quality control of instructional systems

In this section we shall review systems of instruction and discuss a number of relevant characteristics.

3.1 Characteristics of instructional strategies

Teacher-centred instruction is usually a classroom activity for the delivery of information during theory sessions, group discussion and general activities. It should be recognised by teachers that trainees have a limited attention span, and that a trainee's useful concentration time is only about 20 minutes.

To allow for this limited attention you will need to use a variety of training methods:

- alternate information-giving with group activities
- have a number of small breaks, or "breathing spaces"
- use a variety of instructional materials

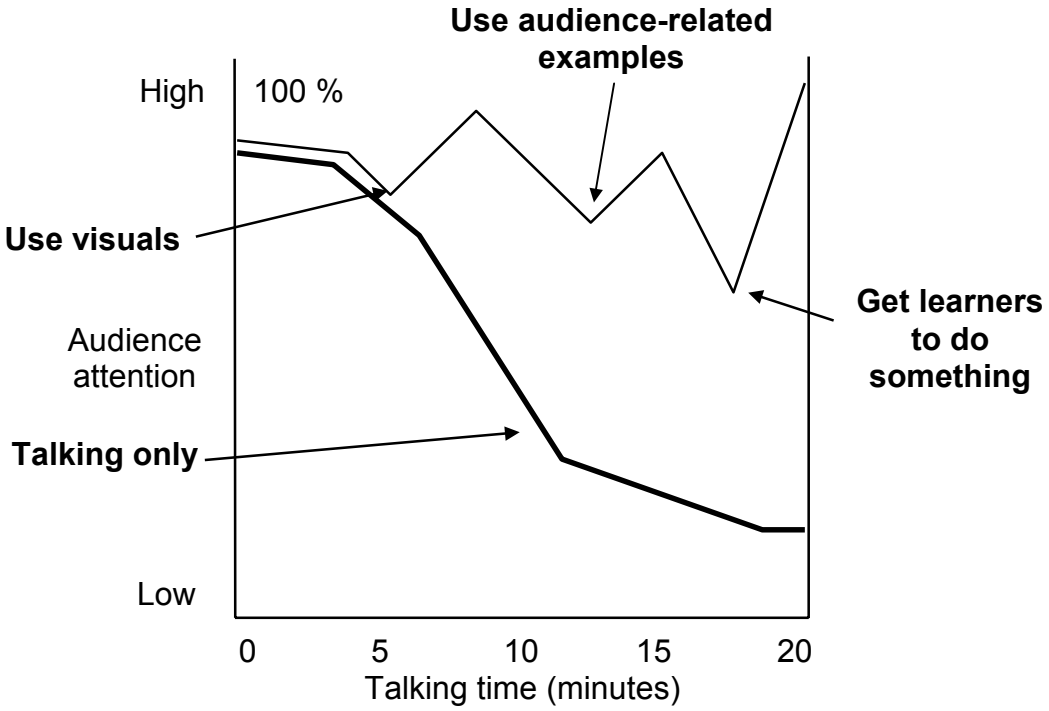
The teacher should look for opportunities to use charts, diagrams, handouts, write key words or phrases on the board, use overhead transparencies, show slides, films or videos.

Think of ways of making trainees see what you are saying.

The diagram below shows the effects on audience attention if:

(a) the teacher just talks, or

(b) the teacher varies the presentation to include visual materials, relevant work examples and related activities.



It can be seen from the diagram that if the teacher only gives information verbally, the 20 minutes attention to what the teacher is saying steadily decreases.

However, if the same teacher changes the approach at strategic points, although the audience attention fluctuates, it will stay relatively high throughout the session.

Trainees take in information in different ways and at different speeds. To allow for individual differences in the group, you will need to choose methods that permit them to take in information in their own way and at their own pace.

Always allow time for revision or for "catching-up".

Provide copies of materials used in the session for the trainees to study again at their leisure. Use repetition to reinforce what you have said by the use of different methods. Always pace and vary your training session.

Learner-centred activities involve the use of techniques that can be incorporated into self-paced learning programs. These allow the learner to progress without the need for teacher intervention. These activities can be in the form of problem solving or learning by experience.

An activity should appear at the end of each significant piece of instruction or at the conclusion of developing a concept. The general rule for writing learning materials is to include frequent learning activities that assist with reinforcement of learning and to provide motivation to learn.

Ideas for learner involvement

The following list briefly describes a number of learning activities that are suitable for use in learning experiences, both teacher-centred and learner-centred. The suggestions are presented to encourage you to think about imaginative learning activities that could be included in your programs. It should not be considered as an exhaustive list of possibilities:

- *Reading from textbooks, journals* those sections dealing specifically with the knowledge required to achieve a learning outcome. Be selective, get them to read only that which is needed to meet the stated learning outcome. Give them directions on what to look for in the material.
- *Viewing or listening to audio-visual materials*. The materials selected must be readily available to the learners and the equipment easily set up and used. Again, be selective, use only the most relevant parts of the audio-visual materials.
- *Observing or operating models or mock-ups* to gain an understanding of mechanisms or operating controls and processes, particularly if real processes are costly and/or time-consuming.
- *Real-life performances* where the learner functions for short periods of time under controlled conditions in an actual work situation.
- *Simulated experiences* in which the learner goes through a close approximation of a real-life performance with the conditions controlled and consequences minimised. Case studies in which learners write their own reactions and responses to the given situation are also considered simulation experiences.
- *Small group activities* when learners at closely related points of achievement can get together to discuss, plan or evaluate their work.

- *Problem-solving activities*. Some learning outcomes may require solving a problem for a given situation. Problem-solving activities should be based on "real-world" problems, not just "exercises". It is very important in problem-solving activities that the learner is known to possess the requisite skill and that s/he has access to the information necessary to solve the problem.
- *Skills practise exercises*. Some skills may require that the learner perform a skill repeatedly to a specified standard. Learning activities may therefore specify practise periods in terms of time, number of repeated experiences or quantity of production.
- *Performing experiments* in a laboratory or workshop. Assign the learner specific experiments to perform with specified equipment and processes, observe the results and report or use the results in some way.
- *Preparing visual materials*. Gather information and produce graphic materials such as illustrations, graphs, charts, diagrams, sketches, layouts, etc. Activities of this type are usually popular with learners; they are interesting and add variety to the list of activities and tend to reinforce learning.
- *Co-operative learner activities*. Even when instruction is for most part individualised, there are situations in which two or more learners may profitably work together. Many workplace tasks involve teamwork and it is proper for learning activities to incorporate this. Activities that involve heavy lifting, co-operative production techniques, or group decision-making can be covered by this type of activity.
- *Learner-designed activities***.** You don't have to do all their thinking for them. Learners are often capable of coming up with appropriate learning activities themselves. Their motivation to complete them will probably be high too.

Some useful hints for writing learning activities:

- Tell the learners exactly what they need to do for each learning activity. Make it simple and clear.
- For the most part, begin each activity statement with an action word. Ask the learner to read, view, calculate, etc.
- If you direct the learner to a textbook, give just enough information so that the learner can identify and find it.
- If you direct a learner to some audio-visual materials, tell the learner what it is (video, computer program), the full title, where it is located and (if appropriate) which part to look at.
- If you want the learner to contact a resource person for special materials or instruction, give full details as to who the person is, and where and how they can be contacted.

Now do Activity 7 on the next page.

Activity 7

Think about the activities you may have used in the previous list of activities

Detail three of those activities and how you used them. (What type of activity and in what sort of learning program.)

Discuss your responses with your tutor

3.2 Quality control systems

Quality control implies that somehow you can guarantee the outcomes of your instruction. It means that you have in place a mechanism for being able to determine if the training you are providing matches the objectives of any course or program you offer. It also means that someone is diligently collecting information relating to your students, and their assessment while they are in your care and under your instruction.

As a teacher, the task of ensuring that all information relevant to your training function is accessible to your training complex and other authorised training bodies, will be your responsibility.

It is likely that most of this data will be presented to the relevant authorities in written or printed form.

It is also likely that in the near future the data will be processed through a computer database system.

A number of computer database software applications are available, and expert advice will be needed if such a system is established.

A database must contain up-to-date information on the operation of the training function and will include:

- appropriate personal information
- qualifications/training completed
- available training courses
- materials and resources available

The database that you maintain will be as simple or as complex as your work role will allow. If your regular turnover of trainees is not large then the data management work you are associated with will be correspondingly small.

If, however, you are within a large training complex which has large numbers of trainees involved in several areas of training, then the data management system will need to be much more versatile.

Quality control involves collecting data to answer the following questions about the training:

1. Is the instruction providing the trainees with the necessary knowledge and skills to meet the learning outcomes?
2. Was the training completed within the prescribed time?
3. Was any RPL information used appropriately?
4. Did teachers perform in a way that was consistent with the curriculum requirements?
5. Were the skills and knowledge derived from the training appropriate to produce a satisfied and competent trainee?

Please note:

Quality control in training is intricately linked with **evaluation**.

Evaluation is the process for assessing and improving the quality of training.

Evaluation is addressed in Unit 3.4 Measurement and Evaluation.

Assignment No. 3

Unit 3.1 Instructional Learning Strategies

You are now required to do **Assignment 3.1 – 3** which will be found at the end of this unit or distributed by your Tutor.

Assignment 1

Unit 3.1 Instructional learning/strategies

To be completed and returned to your tutor for assessment.

Name: _____ Due date: _____

Question 1

Answer true (T) or false (F) to the following:

_____ Culture and customs impact on the effectiveness of a particular form of instruction

_____ Learning how to make earthenware pots would classify as a predominantly cognitive skill

_____ The most effective learning activity to learn pottery would be to attend a lecture by a well known potter and artist

_____ Developing an appreciation of jazz is an example of affective domain learning

_____ Learning can be enhanced by including opportunities for active participation by the trainee

_____ Learning will take place more readily if the student lacks motivation

_____ Trainee anxiety can prevent effective learning

_____ Well designed instruction will ignore skills and knowledge already possessed by the trainee

_____ Effective instruction requires a match between the outcome to be achieved and the instructional/learning strategy

_____ Effective instruction can ignore consideration of individual trainee characteristics and learning styles

*1 Mark each = **10 Marks***

Eight correct responses must be indicated to demonstrate the level of competency required for this section.

Question Two

Complete the sentences below using the appropriate work form the given list. Each response is only to be used once per section.

ADULT	RAPIDLY
ACTIVELY	RELEVANT
ACQUIRE	SPAN
FREQUENT	RATES
INDIVIDUAL	SWITCHING OFF
INFORMAL	TOLERANT
KNOW	FAILURE
MEANINGFUL	PROGRESS
MOTIVATED	TRAINER
PREVIOUS	

Principles of Learning

1. Adults must want to learn

(a) Adults are less _____ than children of learning for its own sake.

(b) Before adults will apply themselves to learning they must have a desire to _____ the new knowledge or skill.

(c) Adults are not normally well _____ to learn something which may be useful in the longer term.

2. Adults will learn only when they feel a need

(a) Adults want their learning to be _____ to their lives.

(b) Adults learn more _____ the more closely the learning task resembles the actual skills they are to finally attain.

(c) Adults learn more rapidly the more _____ the material being studied.

3. Adults learn much more by "doing."

(a) While adults can learn by listening and watching, they're learning and retention increases greatly if they are _____ involved in the learning process.

(b) Excessive "chalk and talk" will result in trainees_____ "

"I hear and I forget
I see and I remember
I do and I understand"

Old Chinese Proverb.

4. Adults learn by solving realistic problems.

(a) Adults expect to be given practical problems related to their _____ experience.

(b) Problem solving activities which make reference to true-to-life situations work best for _____ learners.

5. Prior experience can assist learning.

(a) Adults learn by building on what they already_____ .

(b) Learning can be facilitated by relating new knowledge and skills to the related prior knowledge and skills of _____trainees.

6. Adults may react negatively to an environment which resembles a school classroom.

Adults learn much more in an_____ environment.

7. Adults respond to a variety of teaching methods.

(a) Adults (and children) have a limited attention_____ .

(b) Adults (and children) take in information in different ways and at different _____ .

(c) To allow for these limitations and differences the _____ should employ a continuing variety of teaching methods.

8. Adults want guidance but not grades.

(a) Adults want feedback on _____ being made and normally respond positively to sincere praise and guidance from the trainer.

(b) Adults are normally reluctant to be tested or graded, often because of fear of _____ .

1 mark each = 18 marks

No more than one incorrect response in each section is acceptable.

This assignment represents 25% of your total assessment for this Unit.

Assignment 2

Unit 3.1 Instructional learning/strategies

To be completed and returned to your tutor for assessment.

Name: _____ Due date: _____

Identify a training session you are scheduled to present to a group of trainees, stating the size of the group involved.

1 mark

State how you will conduct the training session by describing:

- the topic to be taught:

  learning outcomes you expect from the training
- your training environment:

  workshop/laboratory

  workplace

  other
- the method or methods of instruction you plan to use:

  reasons why you have chosen this approach (use the summary of advantages and disadvantages to assist you
- the training aids you will use and how you will use them: include any examples of training aids you have developed for this session

25 marks

This assignment represents 30% of your total assessment for this Unit.

Assignment 3

Unit 3.1 Instructional learning/strategies

To be completed and returned to your tutor for assessment.

Name: _____ Due date: _____

Question 1

Against each of the following expected learning outcomes, and considering the conditions under which the instruction might be given, nominate the instructional strategy that you believe would be the best option and suggest any form of media that you feel would be relevant. Give brief reasons for your selection.

	Learning outcome	**Instructional Strategy and media**
1	60 students must be familiar with the orientation procedures of their education facility	
2	20 students must determine the most relevant and critical elements that should be incorporated in their new curriculum.	

3	Teach a small group of trainees what safety clothing should be worn for specific tasks and ensure they know how to wear it.	
4	Ensure that all employees in a manufacturing plant understand the different classes of fire and know which fire extinguisher to use on what fire.	
5	Instruct a group of 12 students how to set a table for a formal , five course dinner.	
6	Teach a new intake of 20 nurses, what their basic routine for a day would be.	

7.	Students must be able to find the latest information and techniques applicable to their field of study.	
8.	Students unable to attend regular classes need to be able to classify different types of chemicals related to agriculture.	
9.	Students need to be able to produce a short training video.	
10	A group of adult, evening class students, wish to qualify in oxy acetylene welding	

3 Marks each
Total 30 Marks

Question 2

Select a topic in your industry or employment field (other than the one you selected for Assignment 2) for which you are responsible for the development of a training program.

Prepare a ***plan*** for a print-based self-study learning program for the selected topic.

The plan should include:

- an objective
- an outline of the content
- the sequence of steps the student should take
- explanations of, or samples of activities/exercises
- supporting materials: diagrams, photographs etc.
- interaction checkpoints
- method of assessment.

Total 60 Marks

This assignment represents 45% of your total assessment for this Unit.