

Different types of teaching - learning aids (projected and non projected aids)

Objectives: At the end of this lesson you shall be able to

- explain classification of various aids
- state the principle selection and utilization of aids
- explain integration of aids in teaching, learning situations.

Introduction: Instructional media is an Instructional input in the teaching - learning sequence. The Instructional technology approach give more prominence to media and learning experiences of many kinds that are employed in various methods for different purpose of teaching and learning.

The different purposes are as follows:

- Introduction
- Development
- Organization
- Summary
- Evaluation

The general concept that applies to use of media in each of the steps shown above are:

- No media is best for all purposes
- Use of media should be consistent with objectives
- Trainees / user must be formulation with the content of media selected.
- Media must be appropriate for the mode of instructions
- Media must fit trainee learning styles and his capabilities
- Media are neither good nor bad simply because they are concrete or abstract in nature.
- Media should be chosen objectively, rather than on the basis of personal preference or basis.
- Physical conditions, surroundings uses of media may affect significantly the results obtained.

An instructor conventionally teaches through a lecture or demonstration and dictates notes. He may also use a chalk board and some times refer books. As this allows learning to take place, there are other methods to improve learning. That is instructor can use aids during instruction, to transmit skill to learners, attitude, knowledge facts, understanding and application.

The training aids are classified as per their applications.

Classification of various aids are as follows.

1 Visual projected aids

- Film strip projector
- Over head projector
- Opaque projector
- Multimedia projector
- Interactive/Smart board

2 Visual non projected aids

- Models
- Mockup
- Graphic aids
- Field trips
- Industrial visits

3 Audio aids

- Radio
- Tape recorder
- CD/DVD players

4 Audio visual aids

- Sound films
- Television

Selection and utilization of aids

" We remember 20% of what we hear

we remember 30% of what we SEE

We remember 50% of what we SEE & HEAR

We remember 90% of what we SEE & DO"

"I hear something, I do not remember"

"I See something, I understand something"

"I do something, I LEARN something"

Teaching aids are the tools that instructor use them in the classroom such as flash cards, maps, cassette and chalk board.

A teaching aids is a tool used by the instructors to help learners improve reading and other skills, illustrate or reinforce a skill, fact or idea, and since many teaching aids are like games.

Table 1 shows the classification of audio visual aids.

Table 1

CLASSIFICATION OF AUDIO VISUAL AIDS						
PROJECTED & NON PROJECTED AIDS						
NON PROJECTED					PROJECTED	
picture, charts, maps, graphs, puppets, flash cards poster	DIPLAY BOARDS- bulletin board, flannel board, magnetic/ White board specimens	3-D AIDS- globes, models, objects, field trip	AUDIO AIDS-radio taperecorder language laboratory	ACTIVITY AIDS-CAI demonstra- tions dramatics experiments, Programmed instruction	SILENT- slides film strips OHP Interactive/ Smart Board	SOUND- films

Fig 1 The cone represents the strategy of activity of learning.

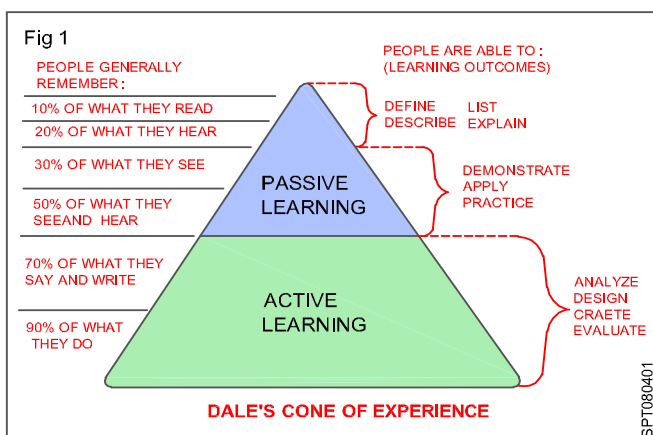
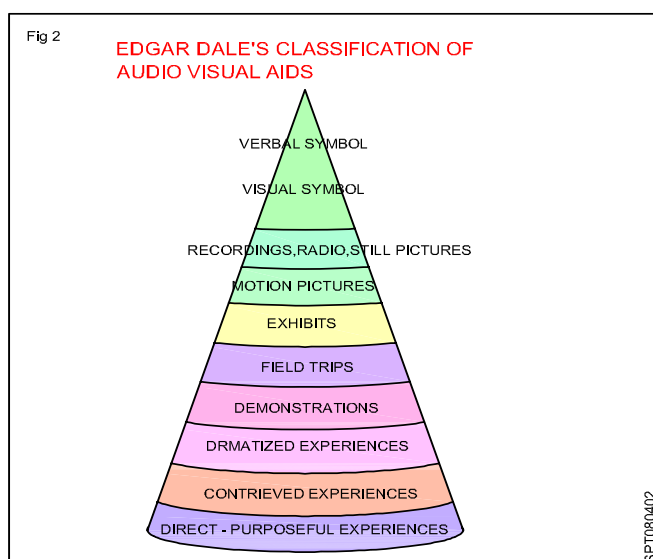


Fig 2 shows Edgar Dale's classification of audio visual aids.



Need and importance

- Clarity
- Attention and interest
- Best motivators
- Use of maximum senses
- Saving time & effort
- Fixing and recalling the knowledge
- Meeting the individual differences
- Encouraging activities
- Introductory variety
- Development of scientific attitude
- Direct experiences
- Promotion of international understanding

Principles of selection & effectiveness in use

Principle of selection

- Educational value
- Realization of objectives
- Learner centeredness
- Interest and motivation
- Simplicity
- Relevance and suitability
- Accuracy
- Encouragement
- Well preparedness
- Avoiding too many aids

- Means to an end
- Integration
- Availability of resources - size of classroom, finance, facilities, experienced teachers

Principle of use

- Preparation - awareness, teacher's preparation, learners participation
- Proper presentation - handling, checking, timely presentation, avoiding distraction
- Protection and preservation
- Action
- Follow up
- Evaluation

Chart

A chart is a useful way to present and display information or instructions, especially in a classroom or other educational situation. It can range in size from a large wall chart to a single piece of paper.

According to Edgar Dale, "a chart is a visual symbol summarizing or comparing or contrasting or performing other helpful services in explaining subject matter"

Types of Charts

- Picture chart
- Time chart
- Table chart
- Graphic chart
- Flow chart
- Tree chart
- Pie chart

Flash cards

- Flash cards are useful for drilling new letters, words, and other information. They are normally used in a classroom, but can also be used more informally.
- A flash card is part of a set of cards on which written items are to be studied. They are 'flashed' (shown quickly) one by one to a learner to elicit a quick response.
- Flash cards are sets of cards printed with information to be studied, such as
 - definitions
 - formulas
 - letters
 - multiplication tables
 - prefixes
 - words.

- If there is an answer or solution to what appears on the front of the card, it is printed on the back so that the person showing the cards can see if the learner's answer is correct.

Flip charts (Fig 3 & 4)

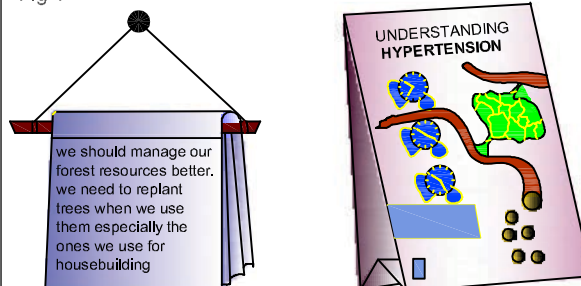
- Flip charts are useful in teaching situations where you need to teach a number of people at a time. They are used when books are unavailable, scarce, or too expensive for individuals to have their own copy when other media such as overheads and slides are not available, and where group learning is most culturally appropriate.
- A flip chart is a collection of large pages which are bound together at the top. The pages are "flipped" or brought up and to the back as they are used.
- The pages can be easily turned and lie flat.

Fig 3 FLIP CHARTS



SPT080403

Fig 4

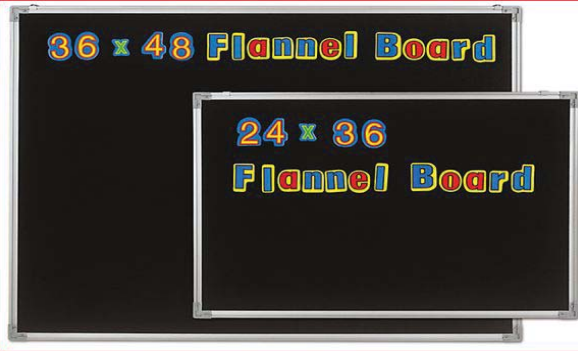


SPT080404

Flannel board (Fig 5)

It consists of a piece of flannel or felt made from wool, stretched tightly over a strong backing of plywood. Pictures, cards and similar material can be made stick on it.

Fig 5

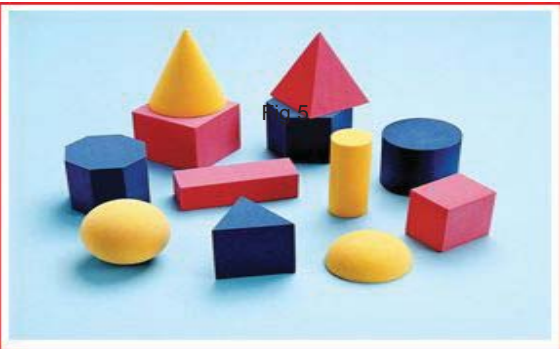
**Model (Fig 6, 7 & 8)**

Models are replicas or copies of real objects with suitable change in size, complexity, timing, safety and cost factors.

Classification

- Simplified
- Scale
- Working
- Cross - sectional
- Mock-ups

Fig 6



Geometrical figures - 3Dimensional models

Fig 7



Sectioned model - Human ear

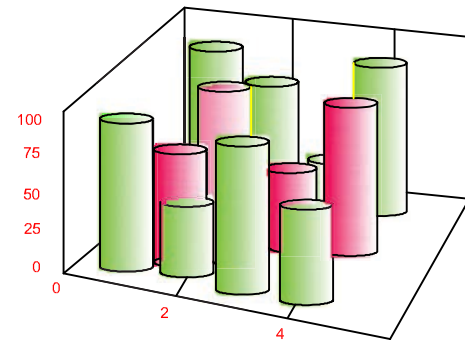
Globe is a spherical model of earth.

Fig 8

**Graphs (Fig 9 & 10)**

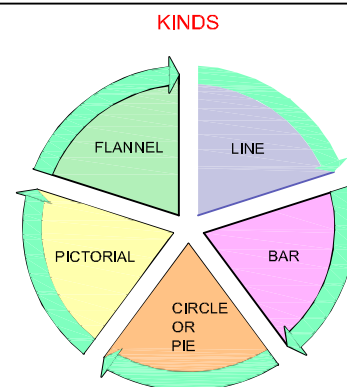
- Flat pictures which employ dots, lines or pictures to visualize numerical and statistical data to show statistics or relationships.
- Graphs are by nature a summarizing device.
- Effective tools for comparisons and contrast.

Fig 9



SPT080406

Fig 10



SPT080407

Cartoons (Fig 11, 12, 13, 14 & 15)

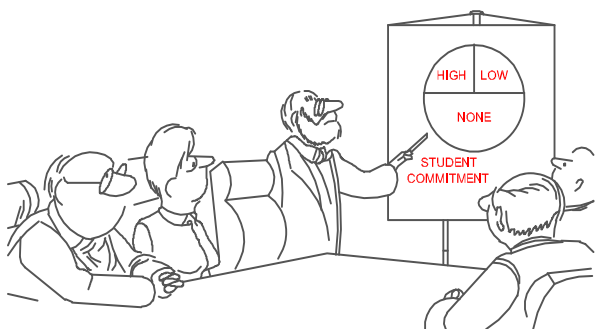
- A cartoon is an interpretive picture, usually a drawing, intended to convey a message or point of view about things, events or situation; may make free use of exaggeration and symbolism.
- Graphs
- Cartoons
- Projected aids

Fig 11



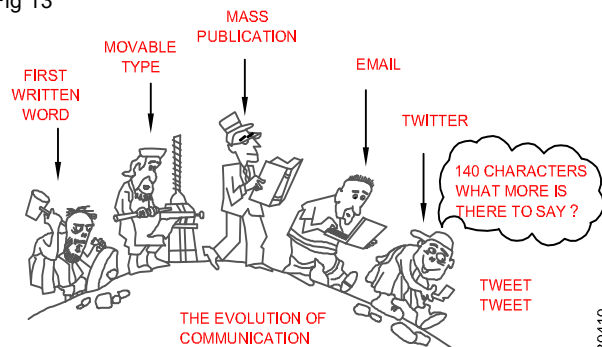
SPT080408

Fig 12



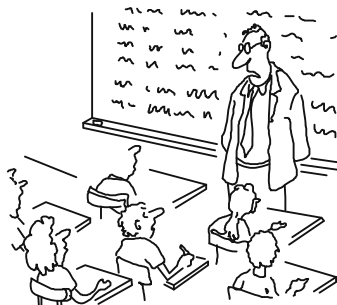
SPT080409

Fig 13



SPT080410

Fig 14

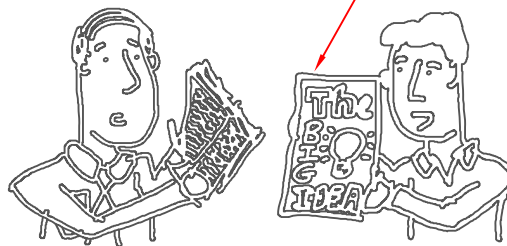


SPT080411

Fig 15

24 PAGES OF NOTE I THINK
I GOT EVERYTHING.

BUT DID YOU GET
THIS?



SPT080412

Projected aids

1 Film strip projector

- The projector is light, portable simple to use and easy to repair.
- It can be setup in a short time.
- The film strip frame can be stopped at any point for discussion.
- As they are manually operated it can be moved forward or backward
- Learners can be trained to operate it as instructor is conducting the class.

2 Over head projector (Fig 16)

- It is a method of projection for projecting transparencies.
- Overhead projectors are the very fore - front of the visual aid in class room teaching.
- The product is very simple in design and easy to operate
- The very important aspect of the over head projector is large bright illuminated picture/image.
- It provides a focal point for concentration compelling attention of learners.

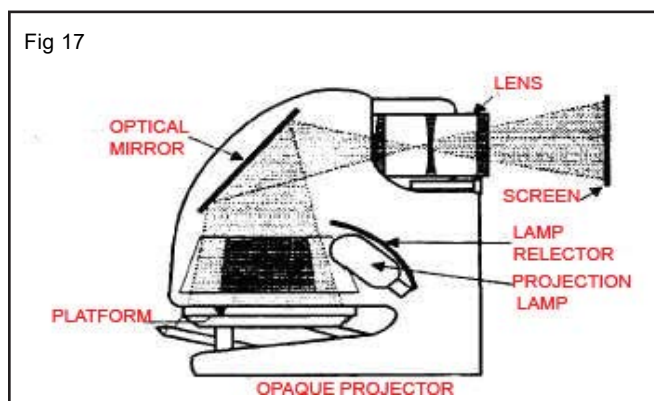
Fig 16



3 Opaque projector (Fig 17)

- Opaque projector is valuable because of its abundance of material available

- Magazine or book illustrations snap shots or news papers clipping may shown by opaque projector
- It requires a completely darkened room for its efficient operation.



Slide projector

- Projector of 50 mm x 50 mm slides are more convenient to use.
- It can hold one slide at a time.
- It can also hold series of slides in sequence with a circular disc or rectangular rack.
- This device is quick and easy to be operated
- Lesson can be presented without interruption.

Multimedia projector

- A multimedia projector is also called as video projector.
- It is a full projector with high resolution.
- Capable of projecting text, images, video, audio contents.
- The projector has input provision to accept signals from CD/DVD player, VCR, Digital camera and also from flash memory storage devices.
- Multimedia projectors are best suitable for class room teaching and training purpose.
- This is portable, can be operated on table top or as a ceiling-mounted arrangement for projection.
- This is operated using a remote control.

Audio aids

CD/DVD/USB player these are the state-of-the-art technology devices used for playing audio information as well as video contents used as teaching aid.

Radio

Radio and recording enable to bring full range of sound in all its variations. With its proper utilizations with media could be impressive and realistic.

Characteristics of radio and recording

- Immediacy
- Emotional impact
- Authenticity
- Conquest of time and space
- One way communication
- Audition

Use of radio

- Develop skills in listening
- To provide interest and varied sources of new knowledge
- Helps to inform the public about any informations
- To call attention for social problems
- Develops critical thinking

Principles and procedure for effective utilization of radio

- Preparation of the instructor
- Develop student readiness
- Listening to program
- Discussion and application
- Follow up

Limitations

- No concentrated attention
- One way communication
- Adjustment
- No reusability
- No pre-hearing and reusability
- Administrative problems

Educational recording

Teacher should listen to the records from various sources and select those most useful for the subjects and the topic they are going to teach. The use of recorded piece has a great value in language learning.

Types of recording

- Disc recording
- Tape recording
- Digital recording

Use of recording

- To mend speech defects in ones own language
- To teach good pronunciation in a foreign language
- For co-curricular activities in the institute

Type of teaching aid and uses	16mm sound motion picture films	Filmstrips	Slides	Flat pictures and tack board	Posters and Charts	Maps	Chalkboard	Filed Trips	Radio	Recordings and transcripts	Language labs and tape recorders	Models and specimens	Television and Kinescopes	Teaching Machines
Visual Visual re-creates situations involving motion which occur anywhere	x							x				x	x	x
Visually re-creates the past	x	x	x	x	x		x					x	x	x
Visualizes theoretical ideas and microscopic life	x	x	x	x	x		x					x	x	x
Visualizes with natural color	x	x	x	x	x			x				x	x	x
Visualizes natural dimensions (three – dimensional)	x	x	x	x			x	x				x	x	
Audio Re-creates characteristics or environmental sounds	x	x ^a						x	x	x	x		x	x
Re-creates events through dramatization	x	x ^a							x		x		x	x
Utilization Sequence fixed	x	x											x	
Flexible organization permits rearrangement			x	x	x	x	x	x		x	x	x		x
Permits restudy	x	x	x	x	x	x	x	x		x	x	x	x	x
Permits leisurely examinations, discussion, etc.		x	x	x	x	x	x	x		x	x	x		x
Control of time and place of use	x	x	x	x	x	x	x	x		x	x	x	x	x
Can usually be produced locally	x	x	x	x	x	x	x	x	x	x	x	x	x	

* Sound filmstrips only

* Models in which slides, tapes, filmstrips, motion-picture films, etc. are used.

Advantages of recording

- It eliminates the time adjustment problems of radio
- Played according to desire and teaching need
- Recording offer a wide range of helpful material
- The institution can have their own recording

Tape recording

Tape recording are not easily damaged and can be replayed many more times.

Uses

- It enables one to listen and hear recording previously made.
- Provides for the pupil to hear their voice and events which occur in their own school
- Language learning is facilitated by use of tapes
- Class can tape their own singing or discussion programmer and listen into then in order in order to improve them later.

The sound film

A motion picture can be very valuable in the training programme especially where motion such as that found in any operation. If properly used, they can increase learning save time and provide desirable variety to the training programme.

Purpose of films

- To motivate the class
- To show an industrial process, material method of performing an operation or manufacturing.
- To show how skills of the trade are developed
- To explain scientific principles
- To introduce variety in teaching
- To bring distant and past things to the class - room
- To supplement the training programme

Sizes : 8 mm, 16 mm, 35 mm, 70 mm films are used for class room. A reel of film, if are in used for class - room is generally 400 ft in length and runs for about 10 to 12 minutes, with 24 frames per second.

When a sound film has to be used in the class - room the following steps should be followed:

- a Selection
- b Preview
- c Discussion
- d View
- e Review
- f Questioning
- g Evaluating

1 Selection : Great care must be taken in the selection of a training film if it is to be effective and fit for the lesson. Try to maintain a list of films available for your particular subject, so that you can choose the proper film for the required topic.

2 Preview : Preview the film by showing it or viewing it for yourself. Make notes on its contents with following questions in mind.

- a Does the film content meet the objective of the lesson?
- b Which points need re emphasis or clarification?

Preview is necessary for following reasons:

- To know sequence of presentation
- To determine time required for show
- To note important points that trainees should look for
- To observe controversial points that need further clarification
- To see whether the film is pertinent to the lesson
- To frame questions on the matter shown in the film
- To determine the language used in the show

3 Discussion : The teacher leads a discussion on the film. The student should be informed about the title of the film salient or important points in the film, which the students should make special note, of a and what the students should expect of the film. Clear any doubts, give a short introduction. In the mean time, arrangement of the screen, projector and seating should be done.

4 View : "Show" the film to the students. Make sure that the screening sound etc. is free from defects. Remain with the students during the screening, as the presence of the teacher creates more interest. Help the students to see the film and learn.

5 Review : After the show is over, have a discussion on the material shown. List the important steps of procedure. Revise them, solve difficulties, if any. Let students discuss salient point amongst themselves.

6 Questions : Ask a few oral question to find how far the students have understood questions which should be brief and specific. They should provide a ready summary of the film just seen. This should be helpful in clearing doubts.

7 Evaluation : To find how much the film show has been effective on the students assess them by what they have learnt by oral questions, and if required by a written or performance test.

To make the learning more perfect and permanent show the film once more, immediately after the review and questioning.

Remember any aid that is used out of step with the presentation of material tends to lose its effectiveness. Film shown as and when the film or auditorium is available are almost useless in terms of training objectives

Audio - visual aids

Educational televisions

Television has invaded INDIA in a big way: it is the most unique and dramatic of all media war devised by men for communications. It is complex of all the instructional materials that have been developed and used through the years.

Definitions

Television is the electronic means by which sound and light energy are transmitted from one place to another. It is the electronic black board of the future which is brought back to life.

Types

- Commercial stations
- Educational stations
- Instructional TV
- CD/DVDs

Advantages

- It combines sight and sound together
- Offers uniformity of communications
- Directly show the correct happenings and live shows
- Easy and convenient to handle
- Helps to update the knowledge

Mobile learning

Objectives: At the end of this lesson you shall be able to

- state the mobile technique is learning purpose
- explain the value of mobile learning.

Mobile Technology

- Internet and Wi Fi
- Touch screen
- Games and quizzes
- Mobile applications
- Any time & anywhere

Role of teacher in educational television

- Planning and preparation
- Presentation
- Production
- Utilization
- Evaluation

Limitations

- One way communication
- Financial problem

Video tape recorder/DVD/USB players

Video is an electronic motion picture from CD/DVD or flash memory card or magnetic tape. This is actually video CD/DVD playing device with provision for playing from flash memory cards.

Advantages

- Operation is very simple
- No dark room facilities are required
- It captures attention and arouses interest
- It can bring away far away experiences
- It can impact emotional experiences
- Helps in developing social and moral values
- Enhance the rate of learning and retention

Limitations

- Costly to buy a TV and video
- It is expensive
- One way to communicate
- No personal contact with the teacher
- Encourages passive form of learning

The value of mobile learning

- It is important to bring new technology into the classroom.
- Devices used are more lightweight than books and PCs.
- Mobile learning can be used to diversify the types of learning, activities students (or a blended learning approach).

- Mobile learning supports the learning process rather than being integral to it.
- Mobile learning can be a useful add-on tool for students with special needs. However, for SMS and MMS this might be dependent on the students specific disabilities or difficulties involved.
- Mobile learning can be used as a 'hook' to reengage disaffected youth.

Benefits

- Relatively inexpensive opportunities, as the cost of mobile devices are significantly less than PCs and laptops
- Multimedia content delivery and creation options
- Continuous and situated learning support
- Decrease in training costs
- Potentially a more rewarding learning experience

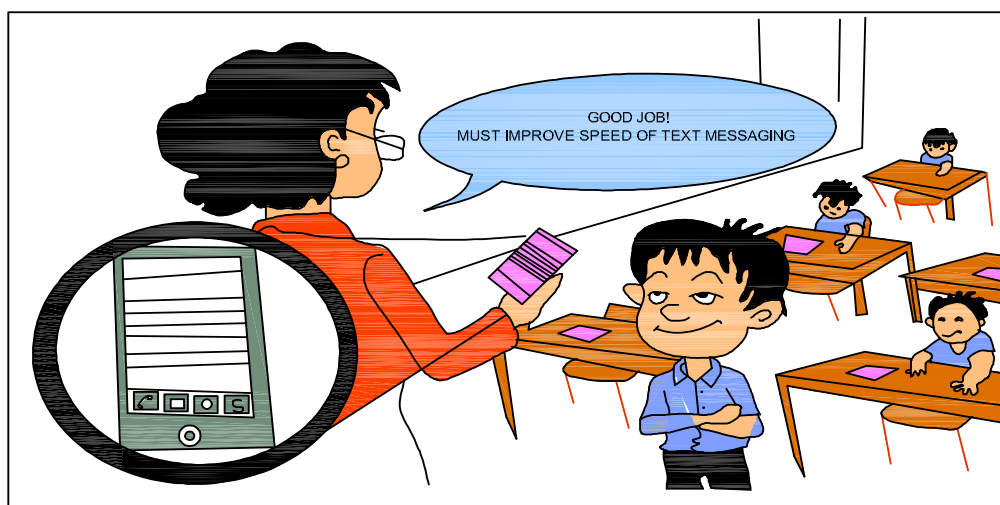
Technical challenges include

- Connectivity and battery life
- Screen size and key size
- Meeting required bandwidth for nonstop / fast streaming
- Number of life/asset formats supported by a specific device

- Content security or copyright issue from authoring group.
- Multiple standards, multiple screen sizes, multiple operating systems.
- Limited memory
- Risk of sudden obsolescence

Social and educational challenges include

- Accessibility and cost barriers for end users
- How to assess learning outside the classroom
- Content's security or pirating issues
- Frequent changes in device models/technologies/ functionality etc
- Developing an appropriate theory of learning for the mobile age.
- Design of technology to support a lifetime of learning
- No restriction on learning timetable
- Personal and private information and content
- No demographic boundary
- Disruption of students personal and academic lives
- Access to and use of the technology in developing countries
- Risk for distraction



Integration of aids in teaching

Objectives: At the end of this lesson you shall be able to

- state the learning objectives
- explain type of learning structures.

Integration of aids in teaching

For integration of aids in teaching, one must have clear concept or idea of different learning objectives and types of learning structures. An efficient trainer must take into account these aspects while integrating aids in teaching. These aspects in short, are therefore dealt herewith.

Cognitive objectives are concerned with information and knowledge, as such, realizing cognitive objectives in basic activity of most educational and training programmes.

Affective objectives on the other hand, emphasizes attitudes and values, feelings and emotions accordingly they are proper concern of education.

Psychomotor objectives involve muscular and motor skills or manipulation of material or objects, or some activity which requires neuromuscular coordination. Realising psychomotor objectives is, of course, the primary concern of a good deal of industrial vocational training.

Types of learning structures

Every task, by definition, must possess a unique structure or organization. However, five basic classes of learning structure are recognizable as being useful and meaningful to the trainer and learner.

- Signal structure or stimulus response structure
- Chain structures
- Multiple discrimination structures
- Concept structures
- Principle structures

These five learning structures are defined in Fig 4, where examples of each are also given.

Learning structure	Definition	Examples	Pre-requisites
Signal	A signal involves a specific response to a specific stimulus	Learning definition in science. Warning light in a car dash-board.	-
Chain	A chain involves a fixed sequence of verbal or motor responses.	Carrying out checks in a car. Setting up a lathe or tying a shoe lace.	Each of the links or signals making up the chain must already have been acquired by the trainee.
Multiple discrimination	A multiple discrimination involves distinguishing one category of phenomena from another.	Distinguishing between longitude and latitude. Distinguishing between different wave forms on an oscilloscope.	Each of the chain or signals making up the set to be discriminated between must have already been acquired by the trainee.
Concept	A concept involves making a generalisation about a whole class of related phenomena.	Classifying or making generalisation about objects or events eg. resistance, magnetism, leadership and morale.	Each of the Chain or signals making up the class or set to be generalised about must have already been acquired by the trainee.
Principle	A principle involves a chain of concepts.	Fundamental truths or laws eg. Joules law, theory of conservation of energy.	Each of the concepts making up the principles must have already been acquired by the trainees.

Model Questions

Theory 8.4

12 What is the percentage of remember when we hear

- A 20% B 30%
C 50% D 90%

13 What is the percentage of remember when we see & hear

- A 20% B 30%
C 50% D 90%

14 What is the name of the term which is useful way to present and display information or instructions used in an educational institution

- A Chart B Flash card
C Paster D Flannel board

15 What is the name that it is a collection of large number of pages bound together at the top such away that the pages can be easily turned and lie flat also it is used when other media & like over head and slides are available?

- A Chart B Flash card
C Flannel board D Flip chart

16 What is the name that it is a effective tool for comparison and contrast?

- A Chart B Flip charts
C Graphs D Cartoon