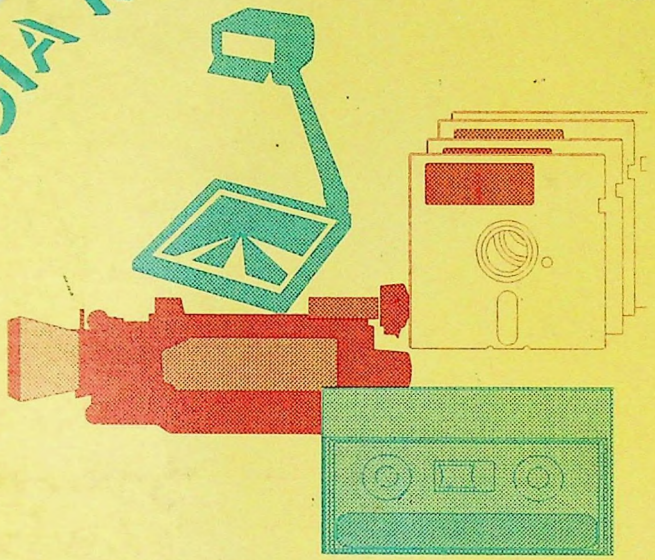
MEDIA IN MEDICAL EDUCATION



K.L. WIG CENTRE FOR
MEDICAL EDUCATION AND TECHNOLOGY
ALL INDIA INSTITUTE OF MEDICAL SCIENCES
NEW DELHI

SEARO - WHO PROJECT WR/IND HRH 001/LCS

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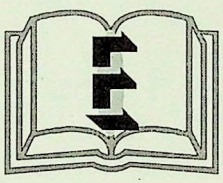

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ACKNOWLEDGEMENT

On behalf of the Organizing Committee we are extremely grateful to all those who have contributed to the planning and organization of the National Workshop on Media in Medical Education which resulted in bringing out the proceedings in the form of a monograph.

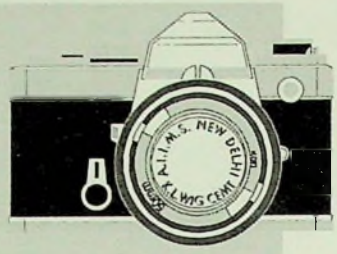
The Ministry of Health & Family Welfare approved this group educational activity and recommended the same for WHO assistance.
The WHO SEARO provided financial assistance most expeditiously.

We are extremely indebted to them.

This monograph has been produced with a collective effort.The adjunct faculty colleagues and some of the participants for the workshop have helped in compiling useful articles from various sources and also making their original contributions. The staff of CMET and department of Physiology have actively contributed in computer typing, cover designing, and binding in a shortest possible time. We owe them all a tremendous debt of gratitude.

We hope the readers would find this workbook useful for clarifying their concepts related to the application of media in medical education. We shall be extremely happy to receive suggestions and comments from the readers which will be useful in continuing similar ventures.

EDITORIAL BOARD



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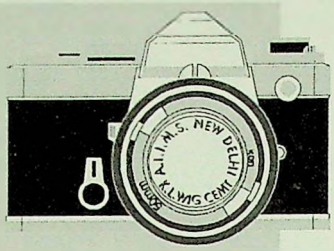

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FOREWORD

There is a general concern and much discussion regarding ways and means of imparting effective and meaningful training and education keeping in mind the health care needs of the society and the country at large. In todays world the student and the teacher are under considerable stress to keep pace with the explosion of large body of scientific knowledge. For the student it is a nightmare to compete with time constraints, multiple subjects, to keep pace with the knowledge and live up to expectations at every level. The availability of a variety of media, however, is a happy situation but poses a great challenge of selecting and putting to rational use the most appropriate ones with maximum cost effectiveness.

The engaging, provoking and motivating powers of commercial media are well evident in everyday life and therefore being so powerful a tool, media can be meaningfully exploited for effective education and training in every field. Media is not only a reality but an absolute necessity and we all realise its versatility and potential for use in several spheres. There is a gamut of media that are available for use namely print, slides, overhead transparencies, audiotape recordings, videotape recordings and videodiscs, computers and interactive learning media. Each one of these have tremendous potential for learning and education. Sadly, for obscure reasons the potential of these various media has not been fully realised by most of us. Most of these learning resource materials are inexpensive, easy,

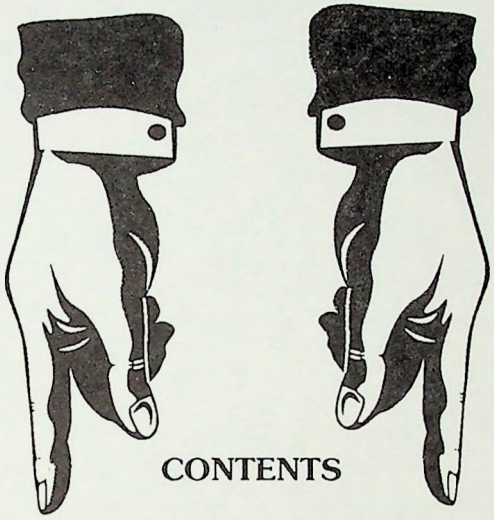
simple and quick to prepare and when produced cleverly and used judiciously can have a wide variety of applications.

To-day we are witnessing a revolution in the electronic media and the medical/paramedical profession is in the grips of the video and computer assisted learning which are becoming available at most centres. Their potentials for use in effective communication, self learning and self evaluation cannot be under estimated. The initial cost/input is happily nullified by their effective and lasting impressions and results. A stage has come when each one of us becomes aware of the potentialities and use of these media.

Several questions come to our mind when we address the issue of optimum utilization. What are the ways in which media facilitate learning? Is it possible for us to get the best from each media or several media put together? How can we go about in utilizing these media to derive maximum learning benefit? It is in the light of these questions that the K.L.Wig CMET decided to hold a national workshop for the medical faculty drawn across several disciplines that contribute to undergraduate teaching.

Through the pages of this monograph we would like to share with the readers a theoretical framework alongwith some illustrations drawn from the actual work of the participants. We are confident that the monograph will be well received by the medical faculty to continue work in this field. We will be happy to receive suggestions and comments regarding the usefulness of this maiden attempt.

Editors



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INTRODUCTION

K.L.Wig Centre for Medical Education & Technology

The need for reorienting medical education in line with the health care needs of the country has been recognized as a matter of global concern. However, what is lacking in most of the countries of the world is an adequate infrastructure backed by well trained human resources and political will to spearhead the process of change. The establishment of K.L.Wig CMET is a bold experiment by All India Institute of Medical Sciences to promote a forum which integrates medical science with educational technology leading to a frution of higher learning.

The All India Institute of Medical Sciences is charged with the responsibility to develop new patterns of teaching in undergraduate and postgraduate medical education in all its branches so as to demonstrate a high standard of medical education to all medical colleges and other allied institutions in India. Though a proposal was mooted as early in 1977 for the establishment of a centre, it was only in January, 1989 that the Govt. of India accorded formal approval to the tripartite agreement between the AIIMS and Government of U.K. and New Zealand to set up the centre.

The major objectives of CMET include faculty development, establishment of state of the art, educational technology and promotion of research in medical and nursing education.

Objectives of CMET:

1. To promote faculty development and develop skills in curriculum planning.
2. To rationalize the use of educational technology for designing effective teaching
3. To influence institutional policies for improved educational planning
4. To undertake research in medical education
5. To act as an advanced Centre for designing formal instructional courses for certification.
6. To develop database and information retrieval services on various aspects of medical education.
7. To undertake production of learning resource materials for the training of medical and other health personnel.

While the U.K. Government has provided inputs for the training of the faculty and some technical staff in Medical Education Technology, the Govt. of New Zealand gave initial assistance by way of the supply of equipment and salary component of some new posts.

Faculty and Staff:

The Centre is a unique model. It integrates inputs from 30 adjunct faculty members drawn from various disciplines of AIIMS with a central media production facility supported by 15 technical staff.

The adjunct faculty of CMET play a key role in developing innovative curricula, producing Learning Resource Materials and in rationalizing assessment strategies in consonance with the health needs of the population.

A full fledged production centre for preparation of media ranging from printing of resource material and hand books to clinical photography , X-ray specimens, projection slides , video films and computer graphics has been functioning since 1990. Some of the video clippings on surgical procedures and computer aided projection slides have received wide appreciation at the national and international forums.

Within the Institute the Centre holds in-house workshops for medical teachers on various aspects of medical education technology.

In-house Workshops:-

Learning Resource Materials	(4-5th January, 1991)
- Assessment Strategies Undergraduate Medical Education	(19-20th April, 1991)
- Students Autonomy in Learning	(20-24th August, 1991)
- Video Production	(30-31st December, 1991)
- Role of Media in Medical Education	(2-3rd Jan. 1992)
- Computer Assisted Learning	(31March-2nd April,1992)
- Problem Based Learning	(27-29th July, 1992)

The Centre is slated to play a major role beyond the institute by way of organizing National Workshops for the faculty members belonging to diverse disciplines and institutions across the country.

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K.L.WIG CMET

National Workshops:-

- Assessment Strategies in Medical Education (29-31st March, 1990)
- Self Learning and Self Assessment in Physiology (16th November, 1990)
- Assessment Strategies in Medical Education (8-10th October, 1992)
- Media in Medical Education (22-24th March, 1993)
- Assessment Strategies in Medical Education (8-10th November, 1993)

Impetus to Curriculum Development:

Certain concrete outputs of curriculum planning :

i) Re-defining the goals and objectives of undergraduate medical education

ii) Development of list of a essential skills for undergraduate training

iii) Identification of core-curriculum of undergraduates

iv) Integrated module on HIV and AIDS for medical and nursing students.

v) Competency based curriculum in some subjects

vi) Structuring of postgraduate medical education.

vii) Integrated Teaching Module on infectious diseases - tuberculosis involving 15 departments of AIIMS

The centre is a nodal point for co-ordinating a WHO sponsored project on the formation of a ***consortium*** of medical colleges to adopt "Inquiry Driven Strategies for Innovations in Medical Education".

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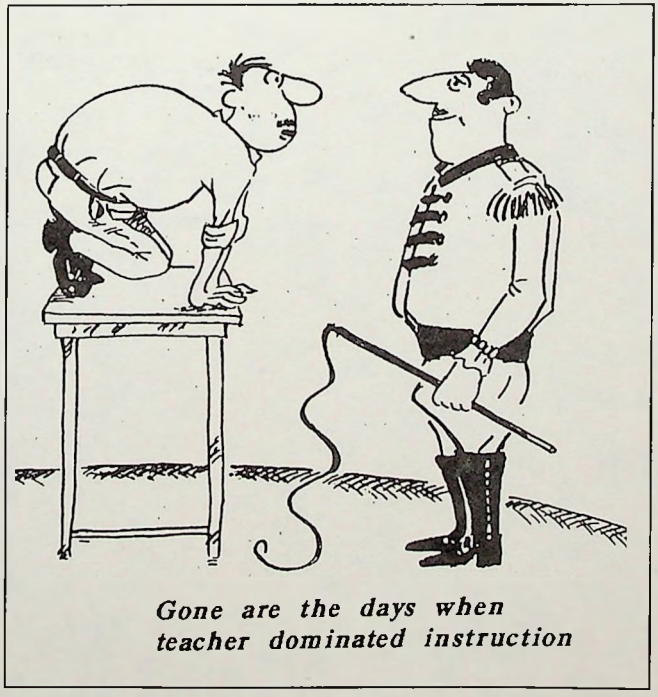
Collaboration with the Medical Council of India

The Centre is in close collaboration with the Medical Council of India in its effort to design need based curriculum. WHO fellows from various developing countries visit the centre for short term training in Medical Education. The Centre provides consultation and resource personnel to various medical colleges and other agencies in establishing medical education units, and promoting medical education. The contribution includes inputs to the Government of India in establishing a medical college at Dharan, Nepal.

With a solid infrastructure, committed faculty and clear objectives the K.L.Wig Centre for Medical Education & Technology is poised to make its humble contribution towards medical education across the country in line with the Health needs of the country.



Gone are the days when teacher dominated instruction

WORK FORCE BEHIND CMET:

ADJUNCT FACULTY

1.	Dr. Usha Nayar,	Professor & Head, Physiology Professor in charge, CMET
2.	Dr. Kusum Verma,	Professor & Head, Pathology Co-ordinator, CMET
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6.	Dr. G.P. Dureja,	Assoc. Professor, Dept. of Anaesthesiology.
7.	Dr. S.P. Garg,	Additional Professor, Ophthalmology, Dr. R.P. Centre.
8.	Dr. Arun Kumar Gupta,	Additional Professor, Dept. of Radiology
9.	Dr. Arvind Jayaswal,	Associate Professor, Dept. of Orthopedics.
10.	Dr. Kusum Kapila,	Additional Professor, Dept. of Pathology.
11.	Dr. O.P. Kharbanda,	Associate Professor, Dept. of Dental Surgery
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23. Dr. Bir Singh,	Associate Professor Centre for Community Med.
24. Dr. Rita Sood,	Associate Professor, Dept. of Medicine.
25. Dr. D.A. Tandon	Associate Professor, Dept. of E.N.T.
26. Ms Manju Vatsa,	Principal College of Nursing.
27. Dr. Anil Kumar Gupta	Associate Professor Dept. of Hosp. Admn.
28. Dr. Anurag Srivatsava	Asst. Professor, Dept. of Surgery
29. Dr. Nibhriti Das	Assoc. Professor Deptt. of Biochemistry
30. Dr. Peeyush Sahni,	Asst. Professor Dept of GI Surgery

(Dr. Brian D'Monte, Additional Professor of Biochemistry left the institute in July 1994.)

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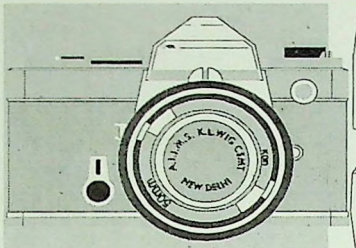
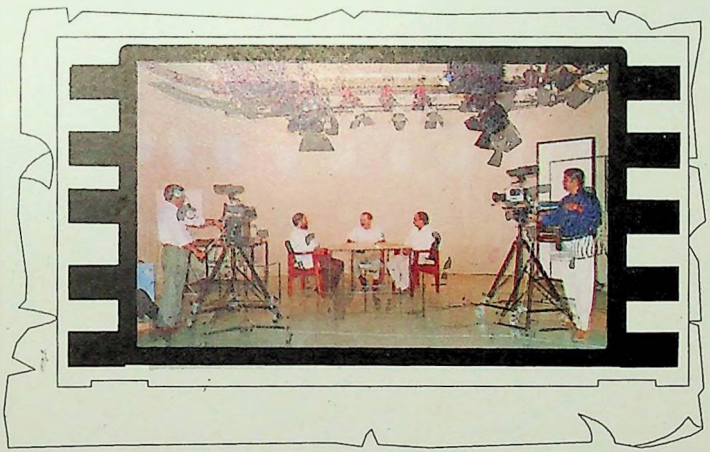
Sunita Gadde,	Educational Graphic Designer
B.D. Ghosh,	Artist Cum-Modeller
M.K. Sharma,	Photo Artist,
M.L. Dhawan, Mohar Singh, S.C. Mehta	Photographers
K.C. Kapoor,	P.A.,
Pankaj Sharma, Sanjay Sharma	Dark Room Assistants
K.M. Nair,	L.D.C.

Yogesh Nath : Book Binder, Suresh Chand : Machine Operator
Asha Ram : Frash

Mr. M.L. Bhalla Sr. Photographer retired in June 1994



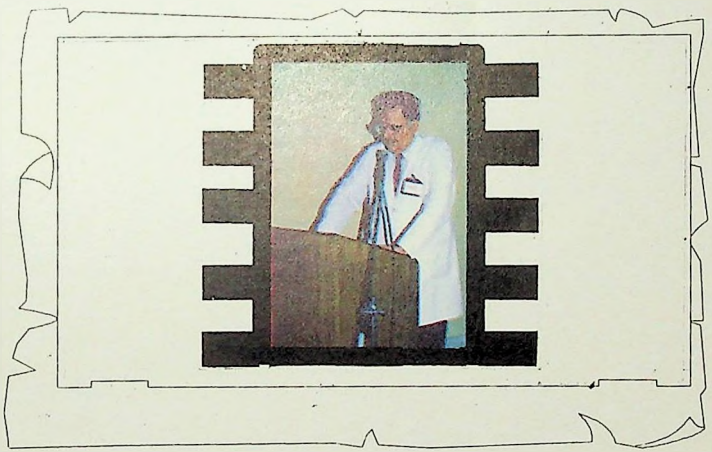
Centre being inaugurated by Hon'ble Vice President of India.



A view of the CMET studio

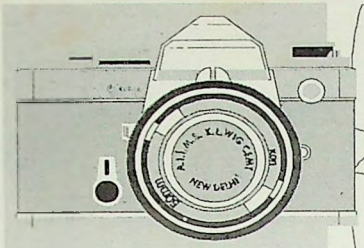
Classrooms for future:- Computer Assisted Learning in action

The Inaugural session



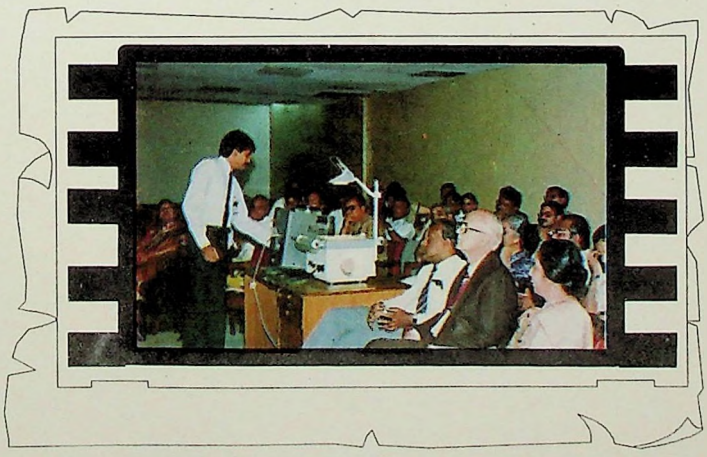
Prof. S.K. Kacker, Director, AIIMS making brief remark.

The Participants for the workshop

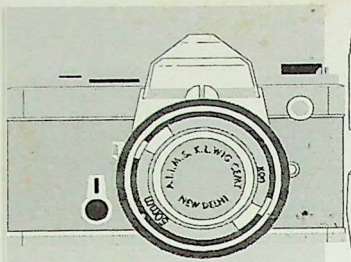


Looking for an effective medium?

Dr. P. Chopra, Organising Secretary has a point to make



The quality of pudding lies in eating.
Presentation of the work by the participants

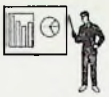


Participants View

Address by the Dean

Sense of accomplishment - Distribution of certificates by the Dean, AIIMS

UNDERSTANDING MEDIA



UNDERSTANDING MEDIA

Functions Of Media Media provides the learner with "experience" about his "environment". The bulk of the learner's experience in college tends to be of a vicarious nature, except in some laboratory situations. Much of learning is presented as representations of real life, either because real life is inaccessible or because of the nature of the content, e.g., events which occurred in the past.

Teaching is essentially a process of communication and media may be regarded as avenues for communication. The learner perceives the world only to the degree permitted by his senses and to the extent that his "cognitive map" and general intelligence permit him to comprehend and organize what he experiences through those senses. The teacher must not expect that simply presenting materials in various forms ensures that the learner has the same perception of the material as the teacher. The teacher must discover by questioning techniques what the learner does perceive; the questions should be so structured that to respond, the learner must use the symbols or language he is expected to associate with the material. This practice with the associated symbols will provide insights for the teacher in analyzing learner capabilities and in setting learning sequences.

Some researchers have reached the conclusion that analysis of learner's capabilities is very important. Teachers need to know a great deal about each learner's capabilities and level of competence. The hypothesis has been suggested that lack of readiness in learners might actually be the absence of necessary prerequisite competencies and that lack of physical and developmental maturation may be due to the lack of relevant prior learning experiences. A great contribution of media is in providing these prerequisite experiences.

Characteristics Of Media

It has been found useful to distinguish between three terms message, medium, and channel.

Message is defined as the content to be taught, including knowledge, understanding, skills, and attitudes.

The medium, in simple terms, may be regarded as the shape of the message, from the actual three-dimensional object itself, at one end of a scale, to the complete abstraction of that object at the other end of the scale, usually in some symbolic form. Some examples of media would be words, pictures, objects, two-dimensional projected images, symbols, and nonverbal signs such as pantomime.

Channel is interpreted as the vehicle - electrical, mechanical, or physical, a television system, a projector, or a recording and playback device or the structure through which the medium is presented to the learner.

Recognizing that a learner's capabilities and experiences directly affect his ability to interpret the medium, will help the teacher to appreciate that some kinds of media, such as pictures, may be easily understood by the learner because of their "realistic" nature, while others, more abstract, such as words and other types of symbols, may be completely beyond comprehension and experience levels. Even within abstract media, such as symbols, there are levels of difficulty for given learners. For normal adults, it is generally sufficient to communicate at much more abstract levels. But even here people misinterpret one another's meanings. Learners with higher mental capacities do profit from the use of nonsymbolic media. The more experienced and intelligent learner can be expected to interpret media more fully than the less experienced and less intelligent.

The actual determination of which medium to choose is not easy. For learners who can read at a satisfactory level, for example, one cannot generalize as to whether the medium should be a picture, spoken or printed words, or sounds. The well-educated adult may learn equally well by hearing or reading. Any teacher serious about the use of media will face questions about the interactions of intelligence, reading ability, age, and content difficulty of the material as these influence the effectiveness of a given medium. These interrelationships are not clearly spelled out at the present.

The crucial question in the selection of any medium, concerns the purpose for which it is intended. If the intention is to observe internal relationships of parts, for example, a photograph of the external surfaces of an object will be less effective than a drawing of that object showing internal views. The important question the teacher must ask in selecting a photograph is, what are its unique capabilities in comparison to a line representation? Where visuals do not serve a prescribed function, they may distract and interfere.

Where colour is not significant to the object or message, it appears not to be crucial to learning. Where motion is not required, one might question the need for a motion picture. More subtle areas of concern are the influences of such things in media as redundancy of information: the effectiveness of labels and cueing devices, the arrangement of items in a graphic; precision in film commentary; types of introductions and summaries; details of size and shape of objects: and the

interrelationships of objects within frames of filmstrips. One must conclude that there is actually little evidence that given media contribute to more or better learning than other media under **all** circumstances: there is evidence that given favourable conditions, students can learn from any instructional medium now available. Part of this problem is due primarily to the nature of research studies which have attempted to compare one medium with another. In this type of study, there have usually been too many variables which have been largely uncontrollable and have contributed biases and errors to neutralize the effects of the experimental variables.

Within recent years much more emphasis has been directed towards the analysis of variables within a medium, such as the motion picture. For the teacher, this suggests that the more profitable approach to analyzing the effectiveness of media emphasizes less the general comparisons between media and more the learner reactions to a given medium. Some research in this area has shown that utilizing learner responses has been a valid method of developing more effective learning experiences. This is true in the development of programmed materials. In many cases, it is equally true in the improvement of filmstrips and motion pictures when learners are asked to analyze these media for ambiguities in the verbal and visual content.

UTILIZING MEDIA IN TEACHING AND LEARNING

It is the purpose of this section to offer teachers a systematic way to raise questions about media. The discussion will concern the role of the teacher, the meeting of learning objectives, and arrangements for learning.

The Role Of the Teacher

Several results of instructional technology have been a growing use of self-instruction, an emphasis upon the improvement of group instruction, and a gradual change in the role of the teacher. More teachers are becoming members of teams that share responsibilities for group instruction. Others are preparing media for individual study in programmed form for remote-access retrieval, and media for television programming. The concept of a teacher within the enclosure of four walls with thirty or so students is changing. It is predictable that the individual classroom, with one teacher interacting with students will persist; but classroom grouping is becoming more frequently one among a variety of ways to organize for learning and teaching.

Every teacher becomes the filter system through which the message is conveyed to the learner. As a consequence, the

teacher's role as communicator cannot be ignored. It appears that the permissive teacher may generate greater creativity among learners and the authoritarian or autocratic teacher may generate an opposite condition. Under both types of teachers learners do acquire knowledge and facts. These examples emphasize that the teacher needs to examine his role as a communicator and the influence of that role upon the learner. What is it about a teacher that is unique? Where the purpose of a lesson is to have the learner acquire information for later retrieval by the learner, there is some question about the need for a teacher personally to convey this information. Perhaps teachers are not efficient information givers, particularly when it is necessary to repeat the information a number of times. Every teacher knows that successive classes in given subject during the same day tend to receive variations of the same information from him.

How might the teacher have opportunities to exercise unique qualities? One way is to present content in ways which utilise the advantages of particular media. Given the present capability of equipment that can record materials in audio and visual forms, the teacher has the option of providing information and expository type materials in forms which release him for more personal contact with each student. As more independent study is urged, the teacher will be required to face this option more frequently.

Another way for the teacher to provide time for uniqueness is to become thoroughly familiar with "packages" of materials already available elsewhere. Given ample supplies of materials which have been prepared by experts and tested with learners, the teacher would be much freer to direct learning situations which demand his presence.

Experience in training teachers to produce programmed materials has proved that the process of specifying objectives and organizing information and experiences has a positive influence upon a teacher's general effectiveness. This role in programming will expand with the growing use of media and with situations where the teacher will be asked to play a larger part in meeting individual needs of learners.

Opportunities must be provided for the teacher to determine unique roles, but opportunities must also be provided to determine those qualities of media which are unique. In this way the teacher and media together may provide for the learner the best and most effective experiences possible.

Meeting Learning Objectives

To be used effectively, media must be appropriate for learning objectives. This requires a specification of learning goals in terms that are explicit descriptions of learner behaviour, and that are observable and measurable.

Teaching Attitudes:-

In the affective domain, learning goals must be expressed as observable changes in learners. While this is a difficult area in which to specify objectives and to develop measures of change, some research has shown that the careful design of a motion picture to meet a specific purpose has resulted in a change in learner attitudes after only a short exposure to the film. The dramatic change in performance of learners after short exposure to a film may have been related to the fact that the film was designed to change the audience's specific beliefs. Although the single study did not conclusively prove the influence of film upon attitude change, it does suggest that the teacher select a medium for qualities which will meet as closely as possible the needs defined.

Research has shown that attitudes can be influenced positively by various media, especially films.

Techniques to develop attitudes would include a nonprejudical introduction to the topic and a selection of Media with possibilities for emotional involvement. In discussion of relevant issues, the teacher should avoid inhibiting student expression through his own biases or subtle expressions of approval or disapproval. A climate of objectivity and openness should be the goal. Crucial to the whole problem of selecting media for attitude change is the consensus developing among researchers that a learner's existing attitudes and values are among the most critical factors in determining procedures and in choosing appropriate media.

Teaching for Understanding

The major purpose of teaching for understanding may be expressed as the development of learnerability to see relationships. This kind of learning can be structured more exactly than affective learning. The time-worn sequence of introduction, presentation of the medium, and follow-up is still applicable. Current research in media, however, indicates that the teacher should focus upon the explicit statement of objectives.

Applying this explicitness, one would select media to meet specific needs, e.g., to supply particular information, to show exact procedures, or to pictorialize relationships or details. Film research has shown that the more specific the film can be made to the task prescribed for it, the greater is the possibility for learning.

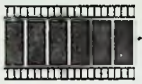
When the task has been to understand a phenomena, processes, and other interrelationships, it has been found that understanding has been enhanced significantly by the use of explicit introductions, directions, directed viewing of pictorial images, overt responses, and reviews of the content presented.

In choosing materials for developing understanding, it would be wise to select materials which are well organized and which have potential for provoking questions.

On occasion, a particular motion picture, filmstrip, or still picture may seem too elementary or too difficult for the audience involved. This difficulty may be partially overcome by the way the group is prepared to use the material. Asking the learner to interpret what he sees and hears is a basic approach to using media for developing understanding. When concepts to be taught are difficult or complex research supports a second showing of a film. With carefully prepared guides as supplements, coupled with a thorough discussion between showings, it is generally not necessary to view a complex film a third time.

Learners empathize easily with motion picture because of motion and other filmic techniques. Static materials, such as still pictures and graphics, present another problem. By their very nature they do not generally have built-in attention getters, as does a film with motion. The task of the teacher, therefore is to plan attention getting procedures for static materials. The technique of asking for student interpretations and reactions appears to be very effective. Student use of such materials may be directed through supplementary materials, such as check sheets and questions.

The need that all see simultaneously the details of any still picture used for group instruction is obvious. Yet teachers persist in holding small pictures in front of groups without realizing that very few students can see the details. The only solution seems to be to project the material, to pass the pictures among the students, or to provide enough copies of the pictures so that all can view simultaneously as the teacher directs the observation and analysis. The process of passing a few pictures among students while the teacher continues to talk about succeeding pictures is a very poor technique. Not only does the teacher set up competition for himself, but the student is likely to have difficulty in recalling the directions for each picture if dependence for directions is completely upon teacher comments. To overcome these conditions the pictures must be made independent of the teacher, packaged, as it were to be used by each individual, in a group or alone.



Teaching Skills

In teaching skills, the psychomotor domain, much the same procedures are applicable as in teaching for understanding. This is true at least of identifying the skill to be achieved, of the steps for achieving the skill, and of stating reasons why the skill, and of stating reasons why the skill is important to acquire. For refinement of performance, however, practice is very important to fix procedures. Here the use of the video tape recorder has proved its worth. Confirming results from early motion picture studies, evidence proves that using the video tape recorder to provide the learner with a moving image of himself performing a particular skill has accelerated achievement and has influenced positively his self-confidence and self-image. Already special areas in schools are being equipped for accelerating skill development, with emphasis upon instantaneous recording and playback equipment.

Improving The Understanding And Use of Media

This brings us finally to a consideration of how to improve understanding of media and their uses. Teachers and researchers in media might well form a partnership, sharing techniques which may be of help in two areas: understanding the applications and limits of media and understanding more about learners.

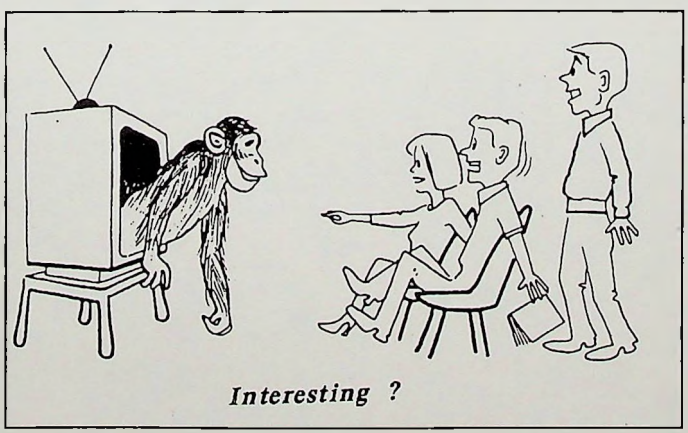
In order to understand more about media, it is desirable that the teacher maintain an analytical attitude toward their selection and use. Instead of accepting statements about the effectiveness of media at face value, the teacher should attempt to judge media against some systematic format. Some researchers in media recommend that to make learning specific it must be operationalized, that is, stated in some form which can be observed and which is replicable.

Once the objectives are made specific so that they are observable, the next step is to determine the prior experience of the learner and his predisposition for certain kinds of media. This also requires that the structuring of knowledge and the sequencing of its content correspond with learner characteristics. In the development of programmed materials, this appropriateness of the material to the learner's characteristics is determined by trying the material in successive trials with different learners and making the modifications dictated by student responses.

By observing different students interacting with the same material, the teacher may gain insights about the appropriateness of media for different learners. To expand knowledge about media, some standard techniques are to alter aspects of the medium itself, to vary introductions and summaries to require different kinds of learner responses, to use media in combination to use shorter or longer versions of the medium, and to intersperse or refrain from questions.

It is becoming more apparent that for the analysis of media applications to learning, it will be necessary to provide, either qualified personnel with responsibilities for this task or released time for teachers. Released time for teachers is a valid suggestion, because the planning of self-instructional sequences requires seemingly inordinate amounts of time. Progress towards individualizing instruction requires in addition well equipped learning resources centers and qualified support personnel who may assist the teacher not only in the design and sequencing of messages for self-instruction, but also in the creation of proper learning facilities. Such support will also take out of the hands of the teacher the details of producing graphic, photographic, and other materials requiring production skills. To provide anything less can be predicted to block acceleration toward the greater individualization of instruction.

"What researcher says to the teacher: educational media ". National Education Association, Washington (1972) Adapted from ! Torkelson, G.M.



Interesting ?

MEDIA: MYTH AND REALITIES

MYTH	Realities
o Media results in learning Media can substitute instruction	o **Media 'per se' do not result in learning Media attributes facilitate learning. Media can *supplement* instruction**
o The basic question is *which media is used?*	**The basic question is:** o **How a particular media is used? or What attribute are employed?**
o Media for learning is same for entertainment	o **Media for learning is as Media different from media for entertainment.**
o Colourful pictures, actual photographs etc. increase learning	o **Simplified pictures, line drawings etc 'can' be more effective in learning.**
o High tech media are very expensive; traditional cheaper	o **High tech media 'can' be cost effective in the long run provided it is reusable.**

MEDIA
in medical education

Some dis jointed thoughts

Media ?

TV
Radio
Newspaper

!

Folk Theatre, Puppets

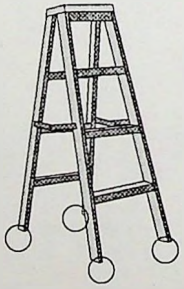
Communication

Depends Upon

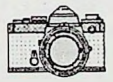
* Message
* Medium
* Channel
* Context

Which leg is the most important

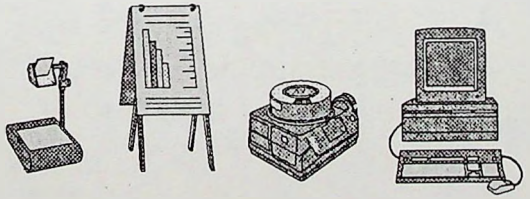
?



?



Audio-visual Aids



* Message
  * Medium
    * Channel
      * Context

Appropriately selected Media
Add An Additional Dimension
To COMMUNICATION

* More Effective
* Reinforces Important Points
* Involves Additional Senses
* Helps Memory (Associative)
* Helps Comprehension

Media in Education

Teaching and learning
Depend Upon
Communication

Media
Provides The
Avenues for communication

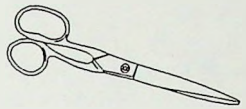
Check equipment
before the session

Technology & machine
must not distract
from message

RESIST TEMPTATION

It is extremely important that we resist the temptation to fill as much as we possibly can in every slide so that we can squeeze in all the many wonderful facts we are so clever as to know and that are not given in the usual undergraduate text books. Adding a multitude of colours makes it worse. On such slides it does not really matter what you say as it is not read anyway !

It is even worse to make the writing small in a further attempt to put every thing on one line or to put text on the projection slide or OHP when you need students to get running matter or complete statements or definitions



- Highlight Important Points
- Space it out
- Don't worry about Grammer
- Limit yourself to a few Lines
- Colour only if you must

From ONE

Do not Hesitate to Make TWO

From ONE

Do not Hesitate to Make TWO

I mean Slide of course !

Hit the Target

- ✓ Humour Helps
- ✓ Graphics Help

Its a Changing World

We used these

We now must change to these

Self learning modules
must not be viewed as
a replacement for the teacher

but

as aids that FREE the teacher

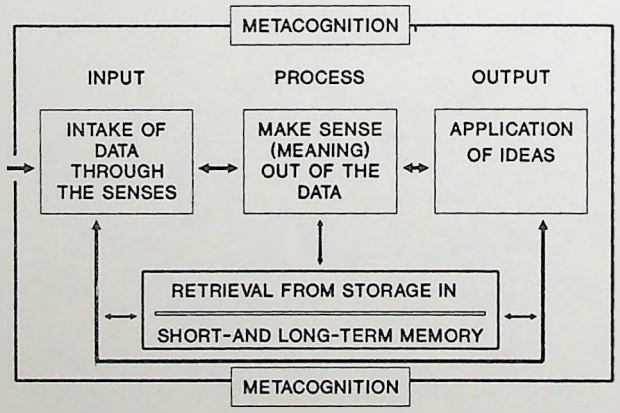
for

more personalized CONTACT
and better communication
with the LEARNER

THE PURPOSE IS TO HAVE
THE LEARNER ACQUIRE INFORMATION
THAT CAN BE ADAPTED TO RECORDING
IN AURAL AND VISUAL FORM
FOR LATER RETRIEVAL BY THE STUDENT

THE TEACHER CAN NOT REMAIN
MERELY THE CHANNEL,
BUT MUST BECOME ONE OF THE MEDIA

Model of thinking



Metacognition
Thinking about Thinking

A common problem is that teachers know too much.

So their thinking proceeds in larger steps.

Students need small sequential logic steps to comprehend, even in slides.

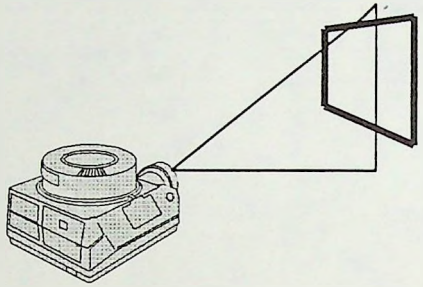
An Old fashioned thought...

The Optimal is still ..

- An effective teacher
- An actual patient or community
- Learning by DOING

The rest are aids
- Important
- But not a substitute

Never use the Vertical format



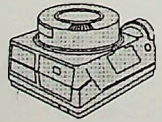
For Lectures, workshops, seminars

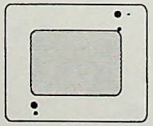
- number is relatively small,
- material needs periodic revision

Use an OHP

For formal presentations or very large audiences

Use slides





Where movement has to be shown

USE FILM/VIDEO

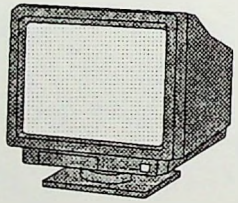
(If more than ten then multiple screens or projection needed)

Remember

- ✓ Media is not the end; it is merely the means !
- ✓ Computers are only a tool Don't worship them.

For surgery, autopsies, experiments, microscope demonstrations etc. where a small area has to be seen by many.

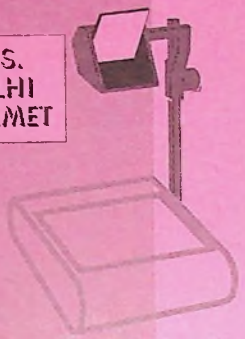
Use TV



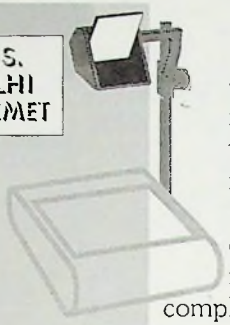
Dedicated

To The Best Teachers I ever Had

- ✓ The Patients
- ✓ The Community
- ✓ The Students



OVERHEAD PROJECTOR



OVERHEAD PROJECTOR

Overhead projector (OHP) is a versatile teaching aid and is an effective communication device. It has the advantage that the lecturer faces the audience and this facilitates interaction with the audience. It is cleaner than chalkboard. Its optical system gives a bright evenly lit image which catches attention of the audience. The visual image can be modified during presentation. The components of a complicated diagram can be added in a logical sequence. It can be used in diffused day light and does not require special lighting or dimmed room. It can be used with other media e.g. 35 mm slides and television. It is easily operated by the person who has complete control over the presentation. Good quality transparencies can be easily produced and kept for future use.

Using the OHP effectively:

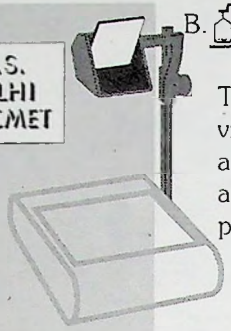
For maximum efficiency in communication, keep the visual image and verbal message closely related. Reveal the first transparency only when required in order to demand attention from students and switch off projector between transparencies. Allow enough time for audience to read over the information. A small pointer, a pencil or pen should be used to point the important area on the transparency stage. It is distracting to point on the screen.

Design OHP materials:

Transparencies should be carefully designed and prepared. There are three basic requirements.

A.  **SIMPLICITY**

- restrict the content of each transparency to one main idea. If the message is complex break it into a series of transparencies or use overlays to add details;
- include only relevant details in diagrams and illustrations;
- outline illustrations and symbols clearly;
- use uncomplicated lettering styles, with a minimum of different styles in each transparency.



B. BALANCE

To achieve a comfortable visual effect, the details of the visual message need to create an equilibrium. For example, an illustration (diagram) should be balanced in relation to any lettering which may appear on it (consider its size and placement) and the space surrounding it.

C. UNITY

When all the details of a visual presentation clearly function together it will be unified and therefore more pleasing to the eye.

- Keep the message clear and simple;
- emphasize the key message in each visual presentation;
- use colour and lettering with discretion;
- use of arrows, space, heavy lines.

D. FORMAT

When designing OHP transparencies the format (dimensions of the projected image) plays an important role. In order to have a proper format ensure that the design elements on the transparency are compatible with the dimensions of the transparency stage.

- Position the visual message within the projected area of the transparency while using a frame.
- When using masks, layout the material so that it looks attractive when masked and unmasked.
- Consider and plan the number and logical sequence of overlays when preparing a base transparency with hinged overlays.

PRODUCING YOUR TRANSPARENCIES :

MATERIAL REQUIRED

Pens for use on acetate sheets should be non-scratch type, fibre or nylon tipped. Pens with spirit based inks are permanent markers and should be used in permanent records,

which are to be stored for reuse. These can be erased with methylated spirit. Water based inks can be erased easily with a damp cloth. Fine, medium or broad tipped pens are available easily in a range of colours.

Acetate sheets - Single sheets or a roll of acetate can be used. Roll is useful for showing long scripts in sequence.

Hand Lettering - Clarity and simplicity are the keys to legibility. Therefore:

- Use a simple lettering style which is neat and large at least 6 mm for text and 9 mm for titles.-Use upper case (capital letters) for titles or emphasis only. Lower case lettering is easier to read in large blocks of print.

-Use only one lettering style on each transparency. A mixture of styles can be confusing and less attractive.

-Space lettering such that it looks regular and even.

-Limit the quantity of written material on each transparency to 6 lines.

The most reliable test for legibility is to view the transparency from the farthest point in the room where it is to be projected.

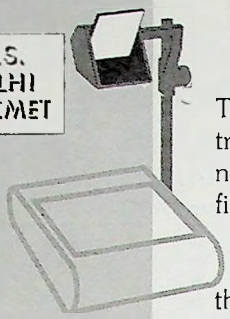
Lined paper or 6 mm lined grid sheets can be used as a guide for handwriting. Place it beneath the acetate sheet before preparing the message.

Transfer Symbols:

Transfer symbols and letters are available in a range of colours and textures, especially produced for use with the overhead projector. They can be applied to original artwork or directly into transparency film. Commercially known as "Letraset" or "Rapitype" the letters or symbols are rubbed onto paper or acetate with a blunt tool such as the end of a pencil or pen. Letters can be removed by peeling them off with sticky tape.

Type Written Letters:

Typewriters with large size face can be used for lettering.

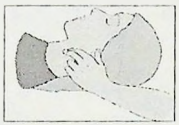


TRANSPARENT ADHESIVE TAPES;

There are several machines available which can make transparencies from an original. Reproduction from books needs to be enlarged before being copied onto a transparent film.

Thermal Copier machines provide fast copying. For the thermal copy process the original should be heat absorbing or carbon depositing in character e.g. pencil or black ink.

Photo Copier: Special transparency film can be fed into plain paper copier to produce permanent black images.



COLOURING TRANSPARENCIES:

Colour and texture can be added to outline images in several ways:

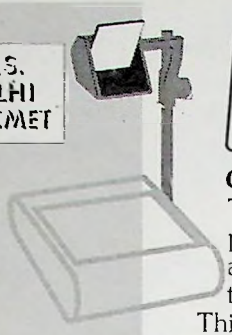
Adhesive Film: For large areas of even colour or texture sheets of adhesive film can be cut out and applied to the acetate sheet. To prevent damage to the original outline add the adhesive film to the back of the transparency.

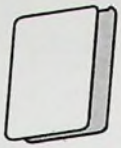
Use a scalpel or other sharp knife to cut the film accurately and remove all air bubbles by smoothing the surface of the film.

INKS, MARKERS AND PENS: Areas of colour or texture can be produced with ink, broad-tipped marking pens and spray paints.

Although it is difficult to obtain an even distribution of colour over a large area, effective textures can be achieved.

OVERLAYS: Areas of coloured acetate sheet can be added to an original transparency as overlays. An effective contrast can be made with a sharp white background.





TWO USEFUL TECHNIQUES

OVERLAYS

The information from several acetate sheets can be projected simultaneously or in separate sequence, when additional sheets are hinged and overlayed on a base transparency.

This technique is particularly useful when a complex visual message is to be presented. Successive logical elements of the message can be projected, giving the operator the flexibility to build up or break down the complexity as required.

PREPARING OVERLAYS:

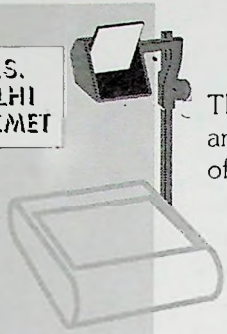
- Prepare a sketch of the total visual content.
- Select elements from the sketch for the base (projected first) and each overlay.

Note: For clarity, limit the number of overlays to four.

- Make separate transparencies for the base and each overlay.
- To ensure proper alignment of all layers, register each sheet to two guide marks on the base.
- Attach the base transparency to the back of a cardboard frame (using masking tape) and the overlays to its face. Hinge overlays from all 4 sides of the frame.
- Place small tabs of masking tape to the loose upper corner of each overlay and number in logical sequence.

USING OVERLAYS:

- A series of illustrations or diagrams can be projected in logical sequence and used to present a visual summary, e.g. pie chart.
- By adding colour to some overlays (or the base) elements of the message can be highlighted.
- Overlay sheets can be moved to re-arrange elements of a diagram.
- Movement can be simulated on any of the transparencies by adding polarizing film and projecting with a polarizing spinner.



REVELATION TECHNIQUE

The presenter can control the quantity of information from any one transparency by using a mask and revealing parts of the message.

This simply means placing a piece of paper or card over areas on the transparency which is being projected for covering the information on it. The mask can be removed gradually as the information is required.

An alternative method of selective revelation is to attach hinged masks to areas of the transparency. The mask can be removed in order and give the flexibility to hide small or oddly shaped areas not easily hidden by a separate sheet of paper.

FRAMING AND STORING TRANSPARENCIES

FRAMING:

Although an acetate transparency can be projected unframed, there are several good reasons for framing it.

The frames can be prepared in various sizes. They add strength to the transparency in protecting the edges from damage or curling. This is particularly important if the transparency is to be used frequently or by several different people.

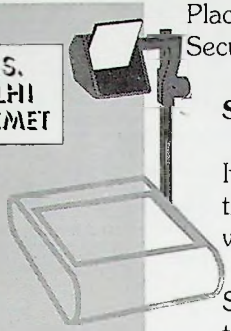
A frame blocks the light at the edge of the transparency giving a neater projected image.

It makes filing and identification easier and ensures correct registration of overlays and masks. Frame provides a convenient border for writing notes. It will protect the surface of valuable or fragile transparencies.

Process:

The process of framing is very simple. Select a frame which is compatible with the size of the transparency being used. Tape each side of the transparency to the underside of the frame - this looks neater and ensures the transparency will lie flat during projection.

Use masking tape rather than cellulose tape which tends to become brittle with heat from the projection stage.



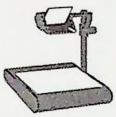
Place acetate sheet face down on back side of the frame. Secure with tape on each side.

STORING:

It is important to store transparencies adequately so that they are protected from damage and can be easily retrieved when needed.

Store them flat, clean and interleaved with paper. Unframed transparencies may be kept in large envelops or hole-punched and filed in ring binders.

Framed transparencies are too high to fit into the standard filing cabinets unless they are tilted over. A separate storage cardboard box can work well. Transparencies with masks or overlays need special care to ensure they don't stick to each other when stored.

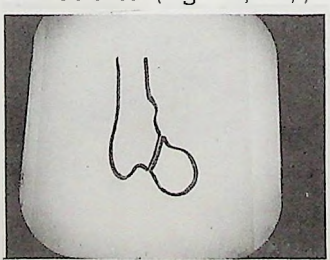


OVERHEAD PROJECTOR : SOME INNOVATIVE APPLICATIONS

1. A hexagonal pencil or a glass slide with an arrow drawn on it or plastic/cardboard arrows all make good pointers. The pointer must be laid flat on the transparency and not waved around. A glass slide can also be used for labeling a figure if there is no space to write on a transparency sheet.

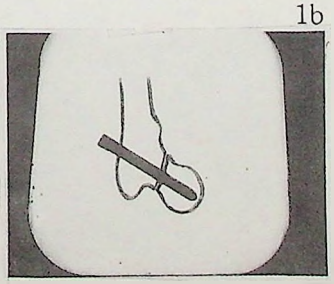
2. Opaque objects laid on the stage of the projector are silhouted. For example,

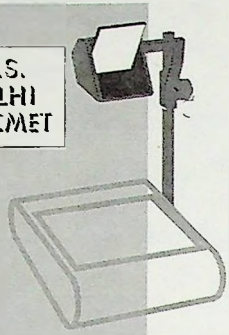
   A Smith-Peterson Nail can be placed over a sketch of the fractured femoral neck while discussing fixation of fractures. (Fig. 1a, 1b,).



1a

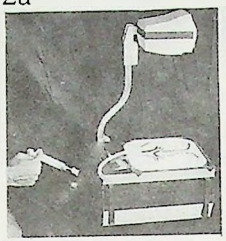
1b



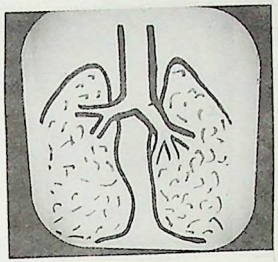


A cuffed endotracheal tube can be placed over the sketch of the respiratory passage and the cuff can be inflated while discussing critical care medicine (a dynamic event). (Fig. 2a, 2b, 2c, 2d).

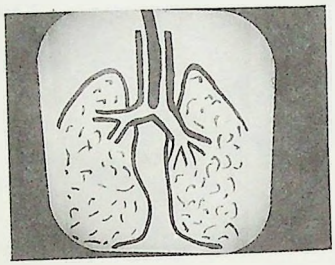
2a



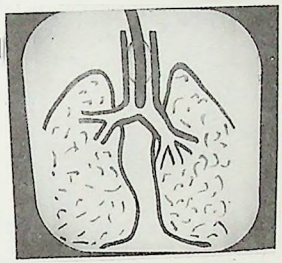
2b



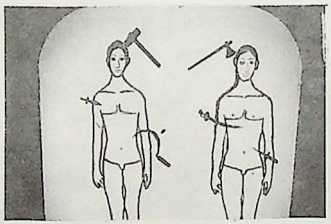
2c



2d



Small replicas of weapons/instruments can be made by cutting a thick paper, and placed over the sketch of a human body while discussing traumatology (Fig. 3).

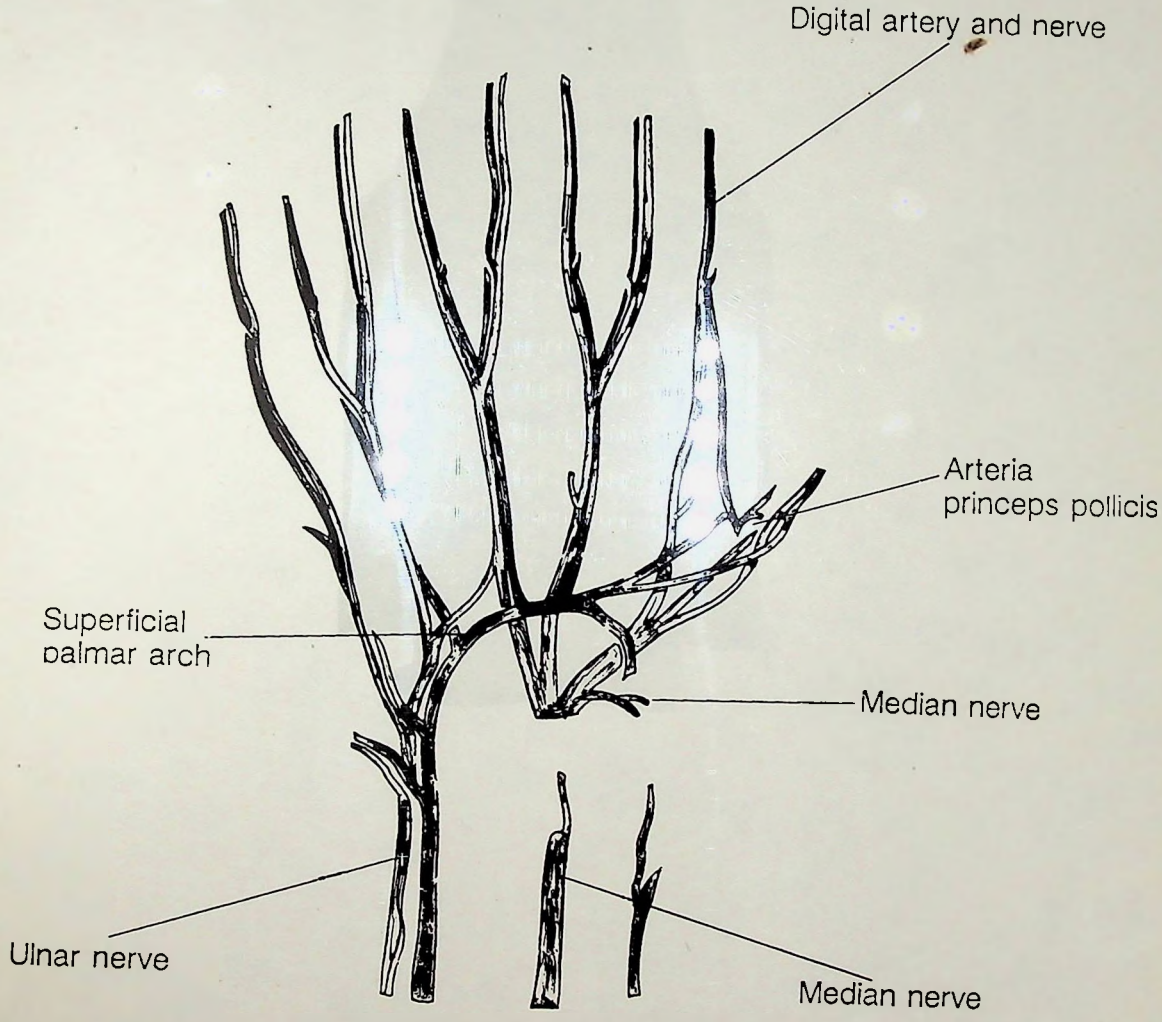


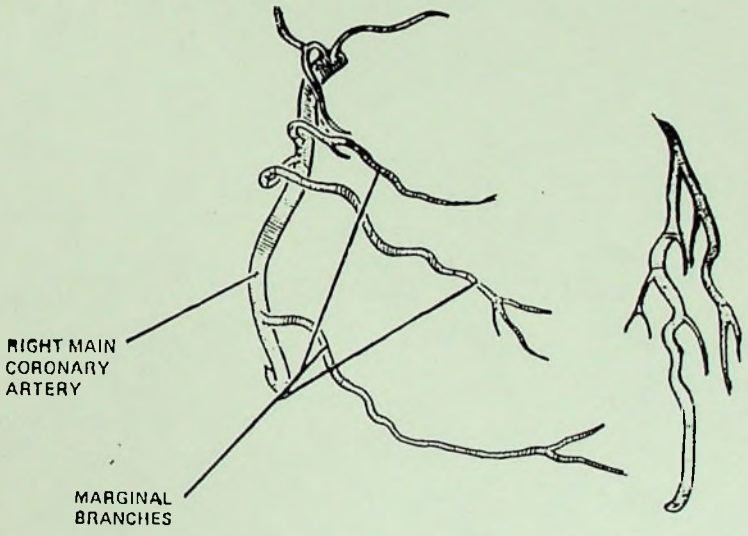
3

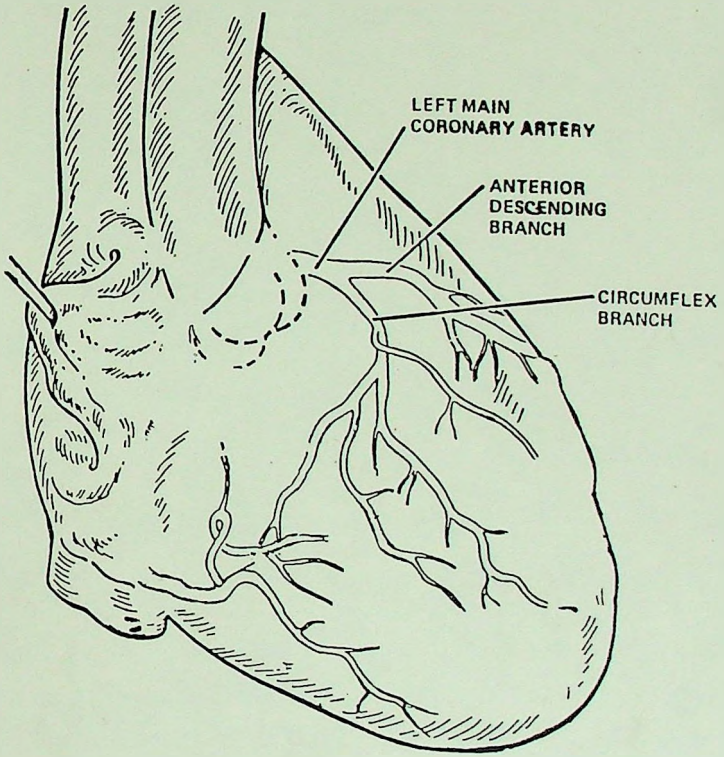
Models can also be placed over the stage of the Overhead Projector. Fig. 4a, 4b, 4c show a model of a neck structure emphasising the importance of extending the neck to keep the airway patent.

4a

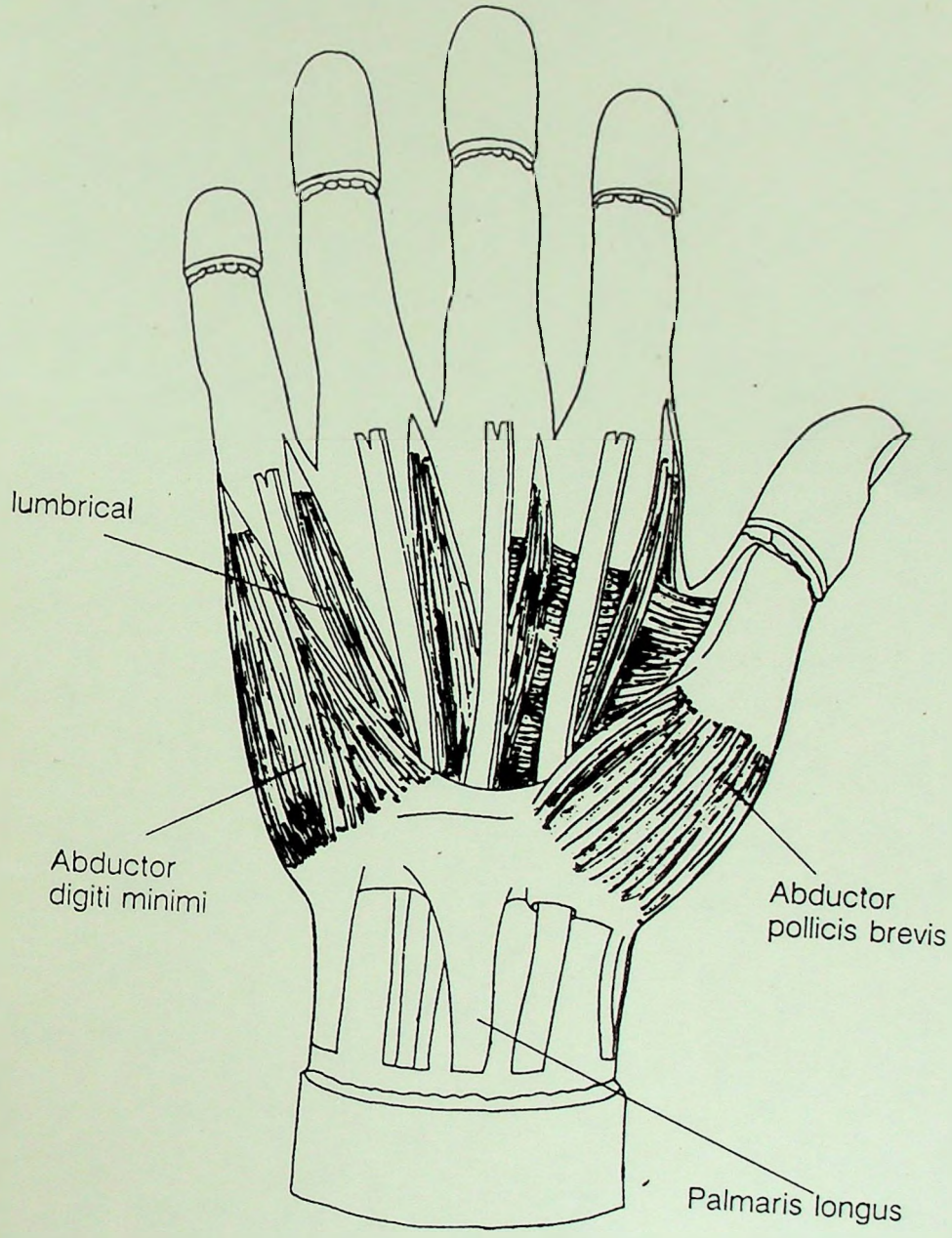
4b


Digital artery and nerve
Arteria princeps pollicis
Superficial palmar arch
Median nerve
Ulnar nerve
Median nerve


RIGHT MAIN
CORONARY
ARTERY
MARGINAL
BRANCHES

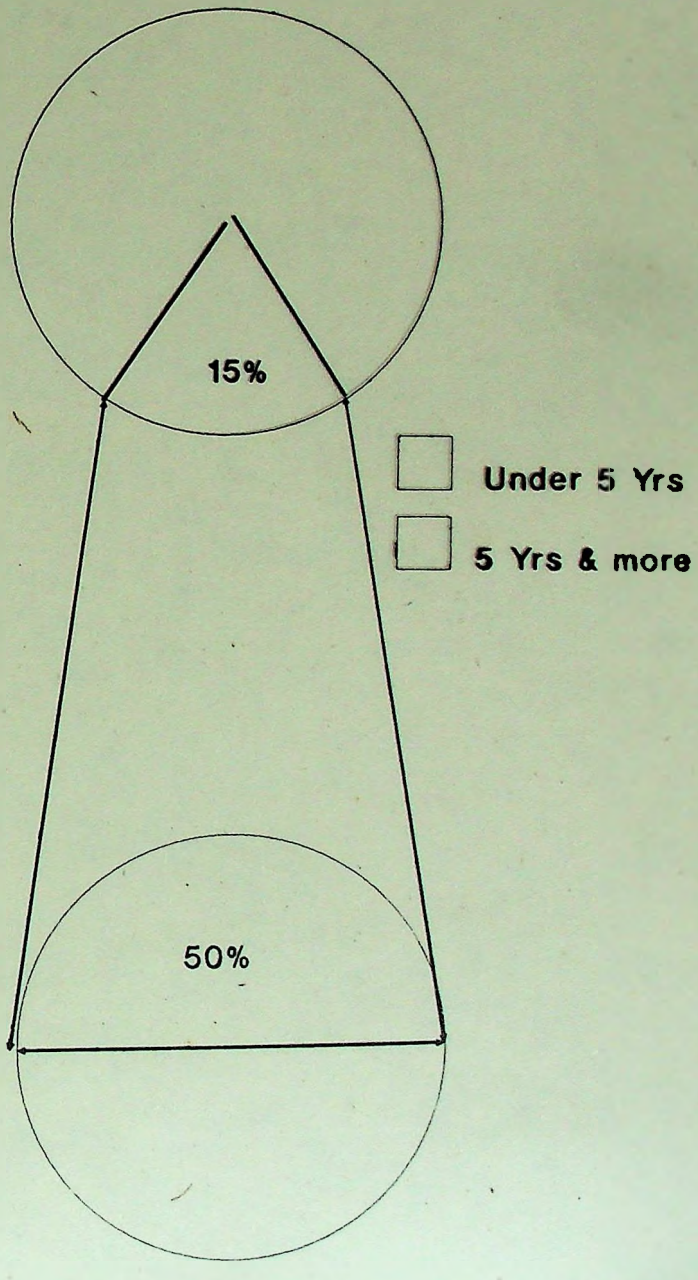


CORONARY ARTERIAL TREE

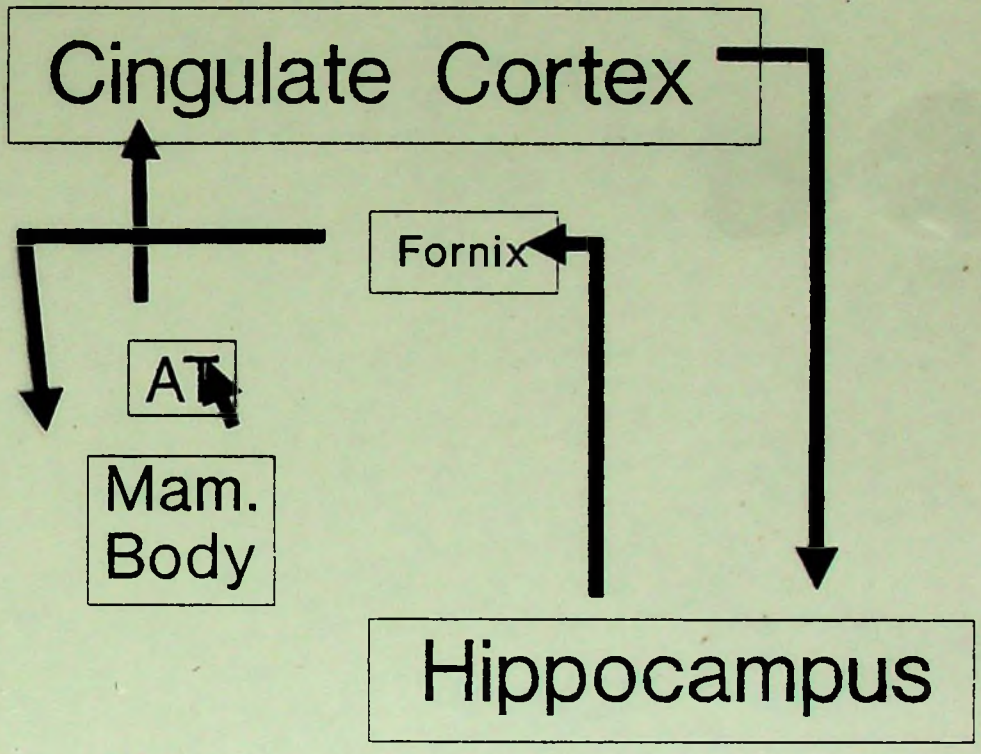


ANATOMY OF HAND

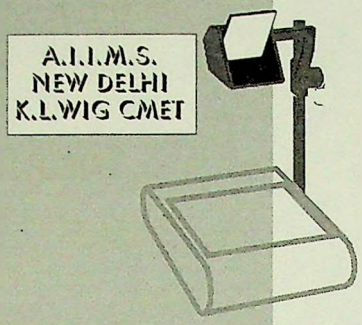
Population

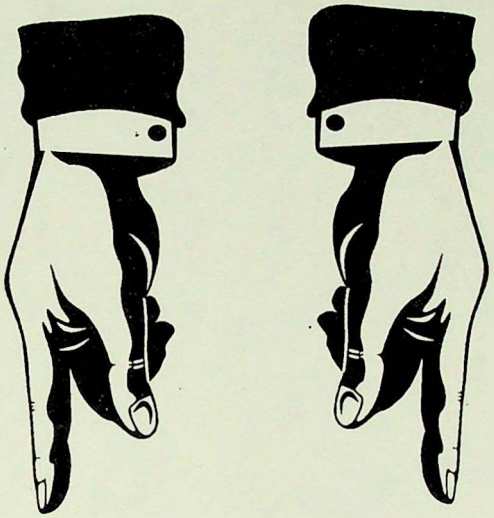


Deaths



Papez Circuit

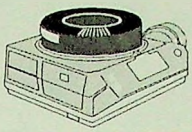




LETS GIVE IT A TRIAL (OHP)

We hope you have liked reading about the use of OHP as a teaching media. You are now familiar with the procedural aspects of its preparation and storage. It is time for you to take a break and start working on something really of your own. Choose a topic of your interest, identify a concept where you could effectively use an over lay or revelation technique. Utilizing the guidelines given, prepare one set of OHP transparencies. Pre test your transparency by actual projection in presence of your colleagues and take suggestions to implement it in your routine teaching. . Give a surprise to your students. Wish you good luck. The next step - But do not fail to get feed back from your students about your 'innovation'. That's great experience. Isn't it?

TAPE SLIDE PROGRAMME



TAPE SLIDE PROGRAMME

Tape slide programme is not a substitute for the teacher but an extension of him. It is a useful teaching aid and easy to prepare and update. A tape slide sequence differs from an illustrated lecture. In a lecture slides usually have complex diagrams, the most important channel of communication is the lecturer and slides are used to illustrate only some selected points.

A tape slide programme is usually intended to work in the absence of the teacher. The slides are the most important channel of communication and the audio-channel is used to complement them. There are many more slides than in a traditional lecture which carry different types of information and the quantum of information is also much more. The information about structure of the programme and guidelines for working through the programme are also put on the slides. Conceptual basic principles of a topic and the related facts can be effectively learnt through a tape slide programme.

Advantages of tape slide programme are that it is simple, easy to use in the library or by individual students at home. A well designed package once made can be used repeatedly by learners. The learner can stop and start, go back and try again and study at his own pace.

The tape slide equipment is simple. Standardised copies of material can be easily made for circulation. Several copies of a programme can be made economically if several groups of students have to use a programme at the same time. Institutions with tight budget and limited staff can easily make and use tape slide programmes.

Individual learner can use this tape slide material to learn basic principles. The unit may be programmed and structured to include problem solving exercises, practical work, question answers and work book so that it becomes a self learning module. The tape slide can have recordings of classical signs and symptoms of diseases, recordings of patients voice, heart and chest sounds, interviews, case histories and a collection of typical slides.

The tape can provide basic information which can be used for indepth study or for special projects. If any lecture or discussion

was missed due to an illness, absence, or due to any other reason, tape slide programme can be used effectively for catching up and also for learning and filling upgaps in knowledge. Self assessment exercises enable the learner to judge his own level of mastery of the topic. This particularly is useful for postgraduate students.

In small groups, tape slide programme can be effectively used to stimulate discussion to define a problem and then pose questions. It can be used to provide basic information in a problem solving exercise for group. The tape may be stopped at given points for the groups to discuss and then proceed further. Individual members of a group may listen to a programme separately before the meeting.

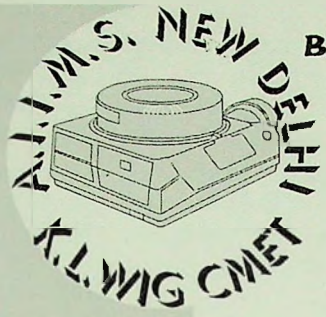
A group for tape slide usually should not be larger than ten people.

All the advantages of a tape are lost if the recording is bad or sound is poor and slides are of poor quality. The enthusiasm and personality of a teacher is effectively conveyed by good recording of programmes and this helps to create interest in the topic.

DESIGNING A TAPE-SLIDE PROGRAMME

A. ? DEFINE THE OBJECTIVES

The first step for designing a good tape slide programme is to specify its objectives. The objectives include ability to comprehend a topic, carry out a technique or a practical skill, or understand a complex biological process. The objectives of the programme will be governed by the type of learners who will be using it and the level of their background knowledge and competence. The place of the programme in the overall teaching curriculum should be decided. Further it should be clear in the mind of the designer whether he is making a programme for self-study by an individual or for a group. It is advisable to make several short tapes on clearly defined topics rather than to make a single long tape on an extensive subject.



B. THE SCRIPT:

The content of the script should be written now. Each main point or idea should be written in a separate paragraph. The illustrations which would match the written content should be decided. The visuals should be balanced with the spoken words. Once this format is ready a story board should be made by writing content on the right half of page and the ideas for visuals on the left side of the page.

The content now should be divided into sections and with breaks for question answer, performing a practical work or answering the self assessment questions in the accompanying work book. The material should be structured into well defined steps for the learner to follow.

C. STYLE:

Style of talk should be informal and conversational as if talking to a friend or to a small group rather than delivering a lecture from a platform. Use direct and active speech e.g. "Look at the graph and note the increase in weight" and not "The graph should be seen for the weight gain". Use short and simple sentences.

When the script is ready, read it aloud and modify it if it sounds too formal and stilted.

D. PLANNING THE SLIDES:

Slides and text should complement each other. The number of slides should not be more than is absolutely necessary. Redundant slides which do not add anything to the message should be deleted. It is important to see that a visual does not remain on screen for too long. It is better to include a slide giving a simple summary of points made so far. Allot each slide its place in the script. The slides should be organised as a set. Some may have just headings or written statements or diagrams or graphs. Photographs, X-rays or a patient history may be included as slides. The set should have a uniformity of style and should be compatible. Each slide should be neat, lucid and simple with nothing redundant on it. Too much information on a single slide should be avoided. The visual should not distract the user from the main point being described. Lettering should be legible and clear. Use bold type face to highlight or emphasize an important idea.

Use slides to recapitulate, to list the principles, to build up an idea or to construct a complex diagram in stages. Question can be asked on a slide and then be followed by an appropriate pause to allow time for the listener to read and comment on it. Good quality photographs in black and white or colour may be used but too many colours should not be mixed. When the slides are ready, run them thorough to check that they are legible, compatible and make an ordered sequence with the script.

E. RECORDING:

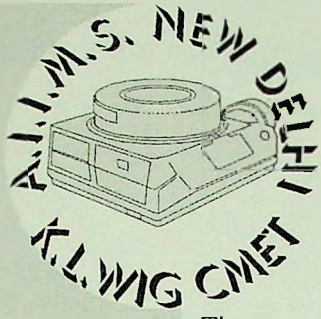
For best results, commentary should be recorded in a sound-proof room with professional grade sound recording facilities. It is necessary to have a small quiet room, a good recording equipment and microphone placed at a suitable distance for sound recording on an audio cassette or a reel. The speaker should have slides in front of him while recording. Avoid noise of slide changing or the rustling of papers. Have each page separate and laid in front of the speaker. Incorporate stop stations in the commentary and indicate the points at which the individual or the group is expected to perform an experiment or answer questions. Instructions for restarting the programme after activity should be added in the commentary. Synchronised tape and slide units are available which permit recording to be done as a smooth presentation, allowing an automatic change of slides as the audio commentary continues. Stop stations for practical activity and facilities to restart the programme at the completion of an activity can be included.

USES OF TAPE SLIDE UNIT

A. For self study by individual learners:

The programmed tape slide units are used where students answer questions during the programme as they proceed through the programme at their own pace and at a time convenient to them. They can stop and go over a part of a programme till they have grasped the idea and then go ahead. Each unit consists of:

(i) Audio material on tape-cassette or reel. Audio channel would provide information and questions for the students to answer.



(ii) Visual material is in the form of 35 mm transparencies (slides).

(iii) A workbook or response sheet which contains structured questions and space for answers.

B. For Group Discussion:

The tape slide unit can be used to pose a problem of patient management or provide initial information for discussion which follows.

C. For Revision of basic information:

Such units of tape slides are ideal for postgraduate students.

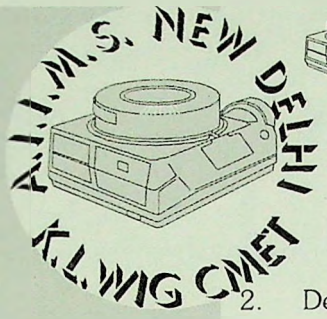
METHOD OF PRESENTATION OF PROGRAMMES

1. Simple portable equipment with an audio cassette player for the commentary and a manually operated slide projector can be used. A handviewer for slides can also be used and slides changed by hand.

2. Automatic synchronised tape slide equipment in study-booths may be provided if possible. The recorder is pulsed to change the slides at appropriate points on the tape. Commentary stops when a question is asked and the student has to restart the programme when he is ready and operates it at his own pace.

LIMITATIONS OF TAPE SLIDE PROGRAMMES :

Tape-slide programmes are not suitable for imparting learning of higher cognitive objectives. These programmes have fixed rate of information flow. The routine maintenance and operation requires special care otherwise slides may be missed or go out of sequence thus creating chaos while viewing.



CREATING A SLIDE/TAPE PROGRAM

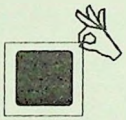
(Steps Involved)

Planning

1. Choosing target audience
2. Deciding title(s)
3. Justification for selection of title(s)
4. Structuring objectives
5. Task description\analysis
6. Design description
7. Identification of requirements (material and equipment, site, space, location, funds and personnel)
8. Description of contents using following format :
   a) Audio-script (use the following format for making a story board).

Sound Audio	Visuals/Slides	Remarks/ Instructions

b) Accompanying booklet and assessment questions



Developing:

9. Collection of material
10. Preparation\recording of slides\audio
11. Editing

Evaluation:

12. Preparation of proforma for evaluation
13. Evaluation by target audience, peers and experts
14. Recommendations and guidelines for future work.

A Workshop Session on
Creating Slide/Tape Programme

Specific objectives of the session:

At the end of the workshop the participants should be able to:

1. list the steps involved in creating the slide/tape program.
2. write script for the slide/tape program for a given title in his\her speciality.
3. prepare visual material required for the program.
4. list characteristics of a good projection slide.
5. design camera ready visual material for five text\graphic projection slides.
6. write script for above mentioned program.
7. edit the visual material and script to fit one with the other.
8. record and erase synchronising pulse on a given audio cassette.
9. perform audio recording along with synchronization of visual material.
10. state how to make duplicate copy of whole slide\tape program.

Preworkshop activity

On the day of the workshop it is desirable that the participants come prepared with the following material:

1. Title and broad objectives of the program(s) to be created.
2. Specific learning objectives of the program(s)
3. Material required for preparation of slides and script ie. references, diagrams, hand written material.

4. Adequate number of slides (approx 10 per individual), if possible.

5. If possible typed script (max. two typed pages; may be read out in five minutes) according to slide sequence.

Activity in the workshop

* Review entry behaviour
* Decide theme\title for the group/individual.
* Justify theme\title
* State objectives
* Prepare\collect visual material and sequence them
* write audio script.

Check for:

- content per visual
- concept (s) per slide
- content continuity
- usage of key words
- language style

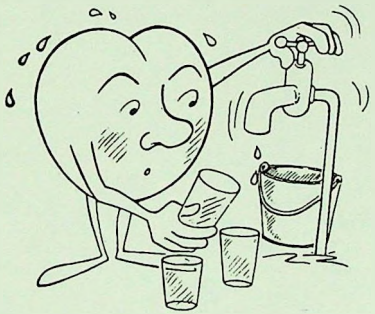
* Practise recording and erasing synchronising pulse
* Complete audio recording with synchronization of visual material.
* Peer evaluation of the product.

MYOCARDIAL INFARCTION

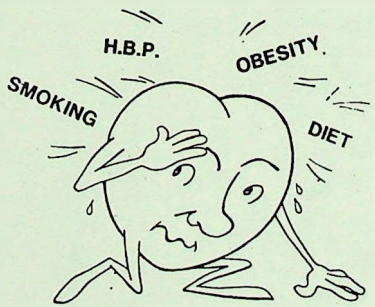
Myocardial infarction is one of the several serious manifestations of ischemic heart disease (IHD). We will be dealing with some aspects of this one only.

MYOCARDIAL INFARCTION

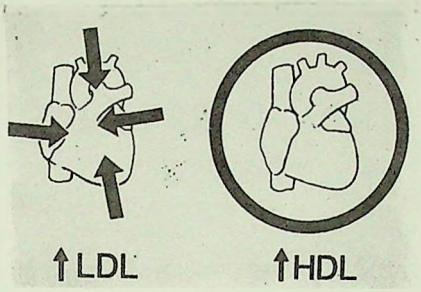
Ischemia occurs when there is discrepancy between the blood supply and demand by theheart. Although this can occur in several pathological states, ischemic heart disease generally implies ischemia which is consequent to atherosclerotic coronary artery disease so much so that the terms ischemic heart disease and atherosclerotic coronary artery disease are often used interchangeably.



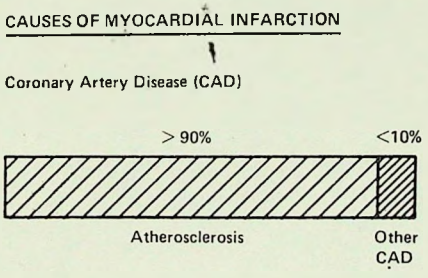
Several risk factors have been identified in IHD. Some can be controlled such as obesity, smoking, and others which are not under ourcontrol.



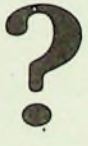
Hyperlipidemia, for instance, is an important factor in IHD. It mediates its effect through its role in the pathogenesis of atherosclerosis. There is no sound epidemiologic evidence to suggest that high levels of low-density lipo-proteins (LDL) predispose to IHD whereas high levels of high density lipoproteins (HDL) havea protective influence.



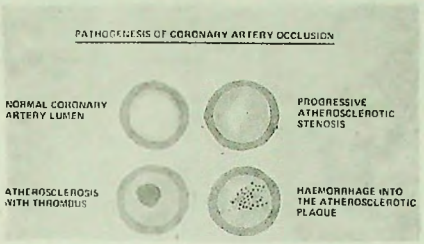
Atherosclerosis accounts for the vast bulk of coronary artery disease while other vascular diseases such as polyarteritis nodosa, giant cell arteritis and other arteritedes are extremely uncommon. Occasionally the coronary arteries may be completely normal in which case the ischemia possibly is a result of arterial spasm.



Can you think how atherosclerosis causes narrowing or occlusion of the coronary arteries ?



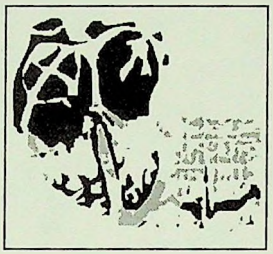
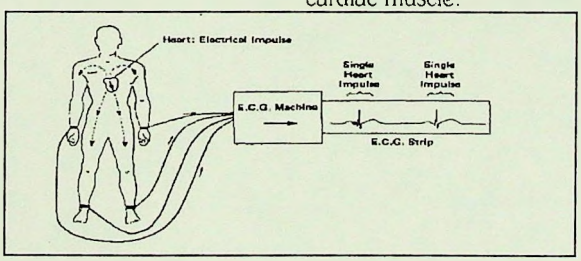
Depicted here in a diagrammatic fashion we see the various processes of narrowing of the artery which in turn may result in ischemia of the myocardium.



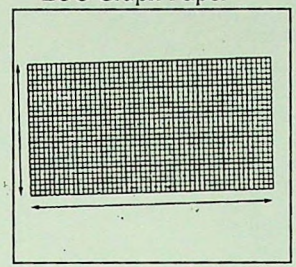
The subsequent 2 sections have been prepared from narrowed coronory arteries. In this section you can see that more than half the lumen is narrowed due to eccentric intimal thickening. The lumen contains a fresh thrombus.

Cross section of coronary artery from another case shows severe occlusion of the lumen which is barely maintained by recanalisation of thrombus.

THE ELECTRICAL AND MECHANICAL EVENTS OF THE NORMAL CARDIAC CYCLE

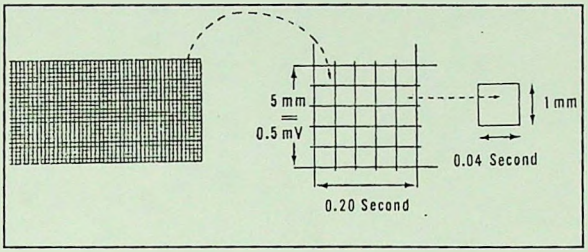
Slide No.	Description/Visual	Commentry
1.	The Electrical and Mechanical Events of the Normal Cardiac Cycle.	This tape-slide programme deals with the electrical and mechanical events of the normal cardiac cycle
		
2.	Electrical Conduction System of the heart Normal Pathway	The Cardiac impulse originates in the SAnode and passes through the network of conducting tissues which consists of .Sino- atrial node, .Inter-nodal and inter- .artrial pathways .Atrio- .ventricular node .bundle of HIS .Right and left bundles .the Purkinji fibres
		
3.	ECG. The Electrical the Impulse Pathway (diagram)	The eletrocardiogram is a recording of the electrical impulse through the cardiac muscle.
		
		Electrodes, placed on the skin of chest and on the limbs, sense this impulse. It is transmited through an ECG machine which delivers a tracing, consisting a series of deflection.

4. ECG Graph Paper



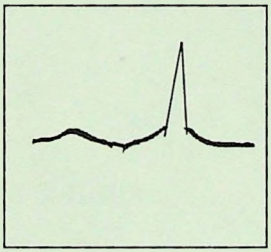
This impulse is recorded on special graph paper. The vertical axis represents the magnitudes of the electrical impulse. Duration or time taken for the impulse to travel over the cardiac tissue is measured by the horizontal axis.

5. ECG Graph Paper



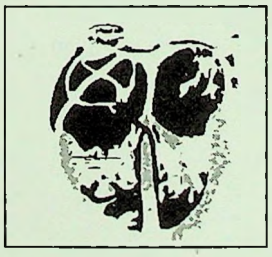
The graph paper is divided into small squares 1 mm high and 1 mm wide. This is further divided into larger squares 5 mms is equivalent to 0.5m- volts. In the horizontal axis, 1 large square represents 0.2 seconds while 1 small square is equivalent to 0.04 seconds.

6. Cardiac Cycle: Graphic Presentation



The tracing of one normal heart beat shows three major deflections. These are: .the p-wave .the QRS complesx .the T-wave

7. Sequential events of cardiac cycle



It is important to understand what each part of the heart wave represents. The P-wave represents atrial activity while the QRS complex is derived from the depolarisation of the ventricles and the T-wave represents repolarisation of the ventricles.

AIDS CLINICAL PRESENTATION AND DIAGNOSIS

NARRATION SLIDE

I

Infection with the HIV and AIDS represents a Major challenge to health workers and the capacity to diagnose it is fundamental to the care and management of HIV infected persons.

SLIDE NO.1

AIDS -
Clinical Presentation and
Diagnosis

II

All persons in the high risk group for eg. homosexuals, heterosexuals with multiple partners, persons affected with sexually transmitted diseases and those receiving multiple transfusion or blood products such as in thalassaemia or haemophilia, are likely to be infected by the HIV virus. The I/V drug users too are at great risk to be infected by HIV.

SLIDE No.2

HIGH RISK GROUPS

- Homosexual / heterosexuals
- STD
- Multiple transfusions/blood products
- I/V drug users
- Infants of HIV + mothers

III

A person with HIV infection remains symptom free or may present with weight loss, lymphodenopathy, recurrent fever and diarrhoea. All these symptoms are nonspecific and form the presenting features of several diseases.

Can you think of other diseases with similar presentation?

SLIDE No.3

PRESENTING CLINICAL FEATURES
ASYMPTOMATIC

- Weight loss
- Lymphadenopathy
- Chronic cough
- Recurrent fever

IV

As these clinical features mimic other illnesses, the CDC, i.e. centre for disease control (USA) has laid down certain criteria for the clinical diagnosis of AIDS. One must suspect AIDS when there is weight loss of more than 10% of the body weight in one month, chronic diarrhoea for more than one month or presence of prolonged fever which can be continuous or intermittent for more than one month. These are the major signs of AIDS.

SLIDE NO.4

MAJOR SIGNS OF AIDS

Weight loss > 10% in 1 mth
Chronic diarrhoea > 1 mth
Prolonged fever > 1 mth

V

Besides these, there are minor signs such as persistent cough for over a month, unexplained persistent generalized lymphadenopathy, fatigue and drenching night sweats. Opportunistic infection or in children confirmed maternal HIV infection.

SLIDE No.5

MINOR SIGNS OF AIDS

- Persistent cough > 1 mth
- Persistent generalized lymphadenopathy
- Fatigue
- Drenching night sweats
- Opportunistic infection
- Confirmed maternal HIV infection in children

VI

The CDC (USA) recommends that a clinical diagnosis of AIDS be made, if two major and any one of the minor signs is present. In paediatric age group (< 13 yrs)AIDS may be clinically diagnosed if two major and two minor signs are present in such cases. Known causes of immuno deficiency must be excluded.

SLIDE NO.6

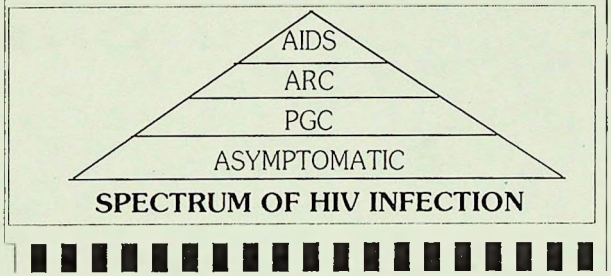
CLINICAL DIAGNOSIS OF AIDS

ADULTS	CHILDREN < 13 YRS
Two major signs	Two major signs
One minor sign	Two minor signs

VII

Look at the distribution of HIV Infection. At one end of the spectrum is a fairly large number of asymptomatic HIV positive persons, while at the other end, is a much smaller, percentage of patients with established signs and symptoms of AIDS who would succumb to their disease. In between are patients with persistent generalized lymphadenopathy.

SLIDE NO.7



SPECTRUM OF HIV INFECTION

VIII

Let us now look at the CDC classification of the wide spectrum of HIV infection. There are four major groups.

Group I - Acute infection
Group II- Asymptomatic infection
Group III - Persistent generalized lymphadenopathy
Group IV - Constitutional disease/ARC with or without neurological disease, secondary cancers and secondary infectious diseases.

SLIDE NO.8

CDC CLASSIFICATION

Group I	Acute infection
Group II	Asymptomatic infection
Group III	Persistent generalized lymphadenopathgy
Group IV	Constitutional disease/ARC with or without neuological disease, secondary cancers and secondary infectious diseases

IX

The initial infection may go totally unnoticed as in many viral diseases. The serum tests positive for HIV infection. Sometimes patient may have flu like symptoms, fever, skin rash and diarrhoea.

SLIDE NO.9

Group I : Acute infection (Self Limiting)

. Seroconversion
. Flu like symptoms
. Fever
. Skin rash
. Diarrhoea

X

After the acute illness, the infected persons remain symptoms free for long periods of one and half years to 12 years. Most of them are unaware of their infection and they may pass on the infection to others, through blood and genital secretions. It is estimated that 25% of these persons will develop full blown AIDS in 5 years time.

SLIDE NO.10

Group II : Asymptomatic infection

. Long symptom free period
. Diarrhoea/Fever +
. Infective to others
. 25% develop clinical AIDS in 5 yrs

XI

In the stage of PGL, lymphadenopathy, usually generalized is present. The lymphnodes usually more than 1cm in diameter are firm and non tender. At this stage the disease can be clinically mistaken for tuberculosis.

SLIDE NO. 11

Group III : Persistent Generalised Lymphadenopathy(PGL)

Non tender, discrete lymph node enlargement 1 cm at two or more sites other than cervical groin, neck and axilla

Fever off and on

Diarrhoea off and on

XII

Constitutional disease or ARC marks the beginning of complete breakdown of immunocompetence and the clinical presentation of AIDS. The disease at this stage is heterogenous and besides having the symptoms and sign such as weight loss of more than 10% of normal body weight, fever of 38°C or more, persistent diarrhoea and lymphadenopathy, patient may have neurological disease such as HIV encephalopathy, peripheral neuropathy. Opportunistic infection with candida, pneumocystis carinii etc. or have secondary malignancies such as Kaposis sarcoma, non Hodgkin's lymphoma etc.

SLIDE No.12

Group IV: Constitutional disease/ARC	
	Other diseases
. Weight loss 10% of wt	HIV encephalopathy
. Fever of 38° C or more	Peripheral neuropathy
. Persistent diarrhoea	Opportunistic infections
. Lymphadenopathy	Secondary malignancies

XIII, XIV, XV

This is a slide of a 24 year old African male with full blown AIDS showing extensive* oral candidiasis, *lymphadenopathy and *profound weight loss.

XVI

To reiterate, HIV disease has a wide spectrum stating with acute serum conversion, passing through a long phase of asymptomatic period, followed by persistent generalized lymphadenopathy and the terminal clinical illness interspersed with recurrent episodes of opportunistic infections, cancer, deamentia leading to death.

SLIDE NO.16

SPECTRUM OF HIV DISEASE

Acute serum conversion	Asymtomatic Period	PGL Constitutional sympt	ARC/AIDS + Other Diseases
Variable 3-17 wks		Variable 1 yrs - 12 yrs	Fatal in 1-5 yrs months

XVII

HIV infection can be established either by indirect evidence such as demonstration of antibody to HIV e.g.by ELISA or western blot or by direct evidence such as demonstration of the virus by isolating the viral Ag, viral culture or HIV nucleic acid by PCR.

SLIDE NO. 17

DIAGNOSIS

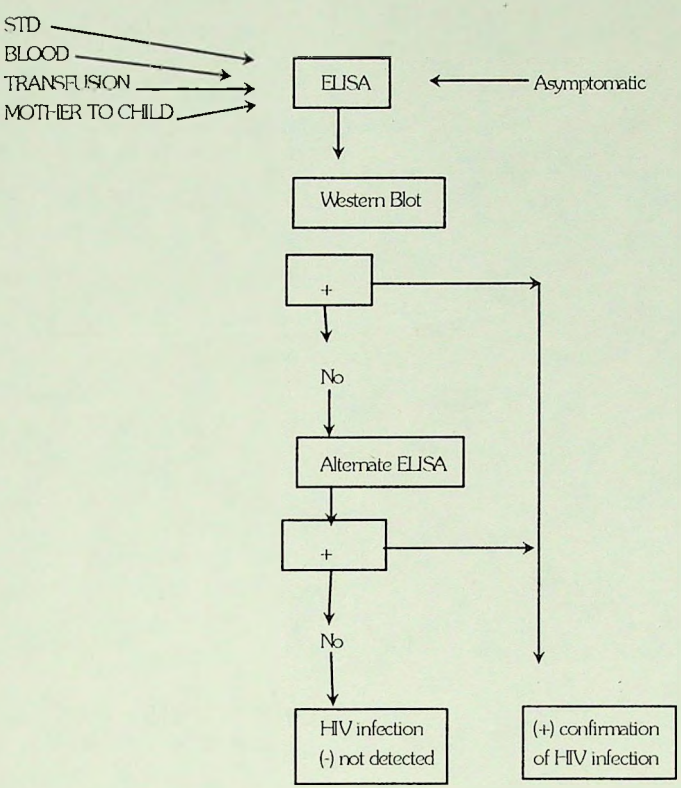
Indirect testing	Direct testing
HIV antibody	HIV Ag
ELISA	HIV Culture
Western blot	HIV nucleic acid

XVIII

All high risk groups such as those with STD; multiple transfusion or children of mothers with AIDS should have their blood tested for HIV infection. The most economical and popular method with a high degree of sensitivity is the ELISA test. If the ELISA is +ve, a confirmation by the Western blot is a highly sensitive and specific test in which small amounts of antibody in the patients serum can be detected. Western blot is considered as the Gold standard for HIV infection. In some of the western countries, however, even when the western blot is negative an alternate ELISA testing is done and if found positive the patient is taken to be infected with HIV. He is declared negative for HIV when alternate ELISA also shows him to be negative.

SLIDE NO. 18

LABORATORY DIAGNOSIS OF HIV INFECTION



XIX

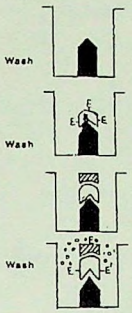
We have stressed upon the ELISA test as an important diagnostic procedure. Would you like to know the principle of ELISA ? Enzyme linked immunosorbent assay (ELISA) is a colour reaction test in which virus particles are fixed on to a plastic plate. The antibody if present in serum would bind to the HIV antigen. This complex will fix the added secondary reagent resulting in colour change. A positive result confirms that the person indeed has been infected by HIV and has generated antibodies to the virus. There can be false positive and false negative results.

SLIDE NO.19

A diagramatic outline of ELISA ASSAY

1. Antigen absorbed to plate
2. Add serum, any specific antibody attaches to antigen
3. Add enzyme-labelled antiglobulin which attaches to antibody
4. Add substrate

Amount hydrolysed ▪ Amount antibody present



The principle of the enzyme-labelled antiglobulin method for measuring antibody (indirect method)

XX

Rememberthat ultimately an index of suspicion by the physician is critical for the detection of a large number of HIV positive asymptomatic patients.

For further information you could refer to Baillere's Clinical Haematology Vol 5(2) 1992, 273.

A Weekly epidemiological record WHO (Geneva) No. 37, 1990.

AIDS in the tropics - MA Ansary, SK Hira et al Wolfe Medical publications 1989.

SLIDE NO.20

Critical element

High index of suspicion !

References

Baillere's Clinical Haematology
Vol 5(2) 1992, 273.

A Weekly Epidemiological Record·WHO(Geneva)
No. 37, 1990

AIDS in the tropics - MA Ansary, SK Hira et al
Wolfe Medical Publications 1989

SLIDE/TAPE PROGRAM ON RECORDING & ANALYSIS OF HUMAN EEG

INDRODUCTION AND INSTRUCTION SHEET

The slide/tape program is on "Recording and analysis of human EEG". It is assumed that you have gone through readings on theoretical basis of electroencephalogram, normal human EEG and its applied significance.

View the program carefully so that you could understand everything. If you have any querry, please note it down on a separate paper and do clarify it later.

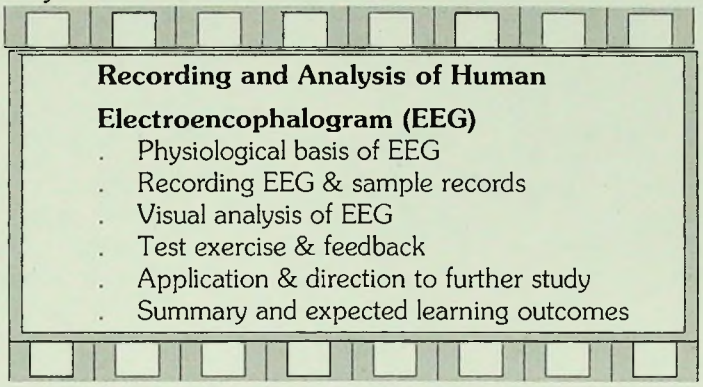
At one point of time you will come across test exercise. This the time you should stop the program for a while. Please use the accompanying test exercise sheet and assess yourself. After finishing the exercise start the programe again. Now you can confirm your findings. In caseof any mismatch you should review concerned slide(s). Then continue with the rest of the program.

References for further reading:

1. *Ganong WF(Ed) Review of Medical Physiology, 1987.*
2. *Kiloh L G et al (Eds) Clinical electro-encephalography 1981.*
3. *Cooper R et al (Eds) EEG Technology, 1981.*

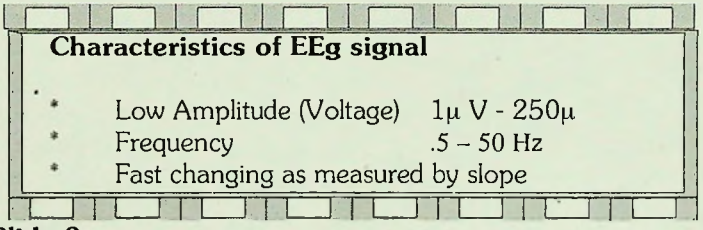
Slide 1

This Tape/slide program is on recording and analysis of human electroencephalogram. It is presumed that before viewing this program you already know the theoretical concepts of electroencephalogram or as shortly called EEG.
In this program I will explain briefly the physiological basis of EEG. Substantial time will be spent on the practical aspects of recording and visual analysis of EEG. At one stage you will come across a small test exercise for self assessment. Towards the end you will be told about application of EEG and direction to further study.



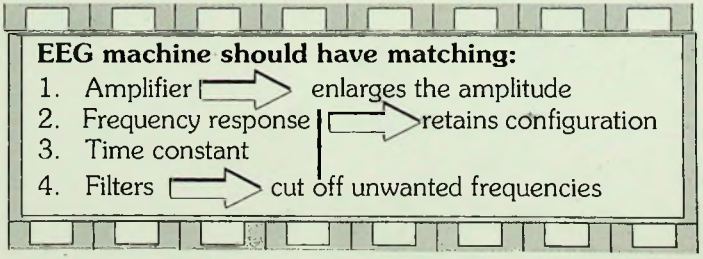
Slide 2

The EEG has some characteristic features: It is of low amplitude and measured in microvolts. The range is 1 to 250 microvolts. The frequency ranges from 0.5 to 50 hertz. The waves of EEG are fast changing as measured by slope.



Slide 3

Thus to record EEG signal the machine should have a suitable amplifier. The machine should have suitable frequency response and time constant in order to retain the configuration of input signal. Filters should be there to cut off unwanted frequencies.



Slide 4

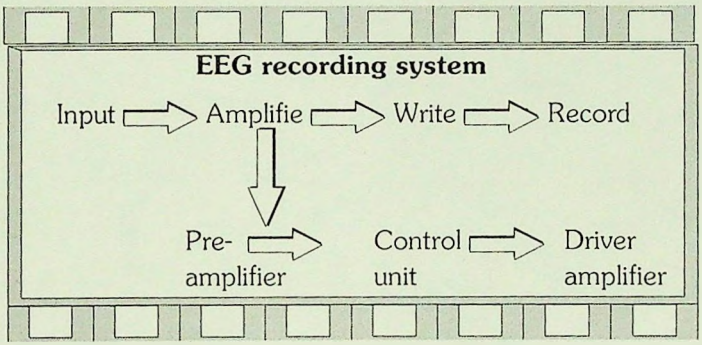
In technical terms the EEG machine should have Sensitivity which gives 1 millimeter deflection to a signal of 5 microvolts. It should be able to record frequencies between 1 and 65 hertz. To retain the wave configuration the machine should have time constant of at least 0.3 second. The machine should have filters which cut off low and high frequencies.

In technical terms EEG machine should have:

1. Sensitivity - 5μV should give 1 mm deflection
2. Should record frequencies between 1 - 65 Hz
3. Time constant - at least 0.3 second
4. Filters - low band pass (less than .5 Hz) High band pass (50 & 70 Hz)

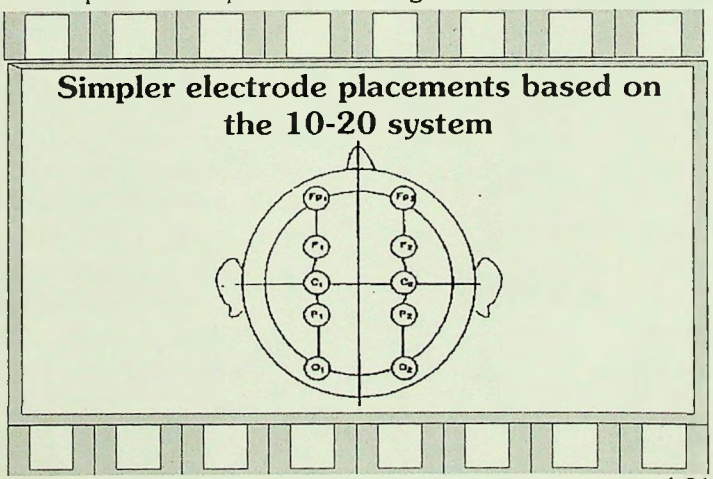
Slide 5

Now you are viewing the schematic representation of EEg recording system. The input from scalp is fed to amplifier which consist of preamplifier, control units and driver amplifier. The amplifier feeds its output to ink writing device.



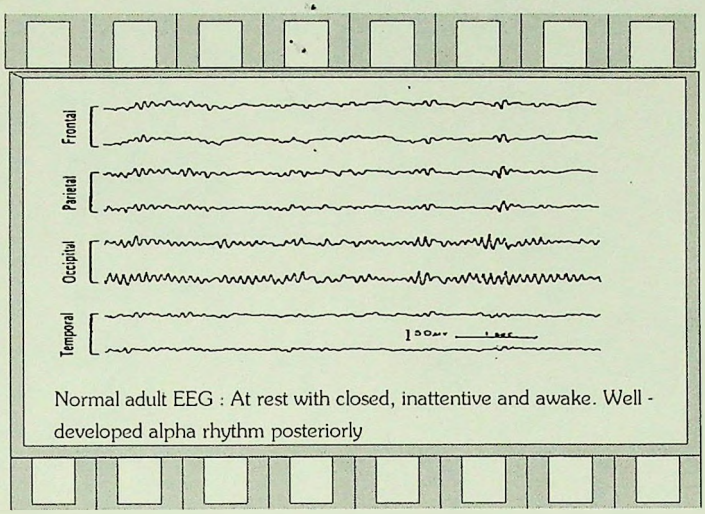
Slide 6

One bipolar-anteroposterior montage is shown here.



Slide 7

The normal EEG looks like this. This is taken when subject is at rest with eyes closed, inattentive and awake. The third set of record that is EEg from occipital region depicts absolutely different types of waves these are called alpha waves.



Normal adult EEG : At rest with closed, inattentive and awake. Well - developed alpha rhythm posteriorly

Slide 8

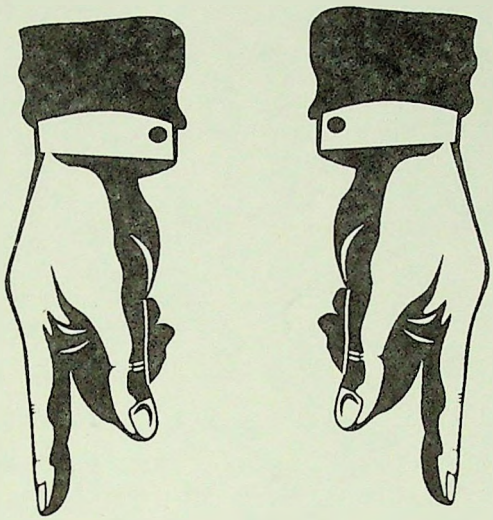
Some clinical application of EEG as diagnostic tool are:
the epilepsies
the brain tumor
developmental disorders
and some degenerative disorders.

Some clinical application of EEG

* **the epilepsies**
* **brain tumor**
* **developmental disorders**
* **degenerative disorders**

Slide 9

Note:- Only a part of program has been reproduced here. This program is currently used for undergradute teaching.

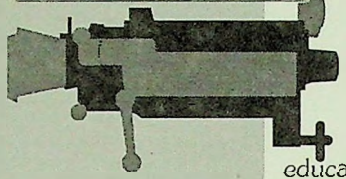


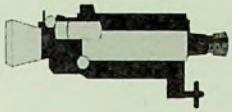
LETS' GIVE IT A TRIAL (TSP)

Now that you have read about the production of a tape slide programme and also seen an illustration, you should be in a position to prepare your own tape slide programme on a suitable topic of your discipline. A realistic estimation of time required for commentary to match with the visuals is something crucial. Make adequate time provision for students' response in case you wish to make your programme 'interactive'. Your originality and creativity comes in to picture at this stage.

What if you do not have a tape slide synchronizer? Nothing to worry. You can achieve a similar effect by using an audio tape and slide projector. The viewers may be instructed to 'pause' the tape to synchronize with the slides. The tape slide programme may be made available to the students at a 'self study corner' in the library and with sufficient motivation you may build up your own library of topics of relevance!.

VIDEO AS AN EDUCATIONAL STRATEGY





VIDEO AS AN EDUCATIONAL STRATEGY

A well planned instructional media enhances the learning process. Video is a powerful medium of instruction which motivates the viewers and can be used to achieve specific educational objectives. It is well established that impressions created by combinations of pictures, words and sounds are retained by viewers longer than when they are only heard or read. Use of pictures, words and sounds enables the viewers to be attentive, helps to understand concepts and acquire information which is too complex for verbal explanation alone. Instructional media appropriately used helps to overcome the limitation of time, size and space.

Video provides a flexible play back system which can be used in a class room or small group situation. A video programme is useful as a self learning module. The video as media has the advantage of being able to provide display of movement and activity as well as to show inter relationships. Performance of physiological experiments showing end results and movement of cells can be shown. Recording of real life situations, signs of a clinical syndrome, emergency situations can be recorded and kept for use as and when required.

Video has several advantages over 35 mm slides. It is useful for displaying motion and provides instant replay of the recording. This is specially useful for group discussion, analysis of performance of skill and critical review of examination of a patient. Video tapes are reusable. It is easy to achieve lip synchronisation on video tapes. Time lapse and animation can be recorded on video tape for educational purposes. It provides instant access to individual frames and can give instant feed back on performance at an interview. This feed back would be of value in improving communications skills. Video provides play back system which students can use for self learning. The tape can be stopped and viewing of any part of video programme can be repeated as often as required.

A self le ing programme of video cassette can be supplemented by a workbook which contains objectives of the prog me and self assessment questions. Guidelines for working through the programme can be included in the workbook.

EQUIPMENT NEEDED FOR PRODUCING A VIDEO PROGRAMME ARE:

1. Recording and play back camera.
2. Compatible VCR,
3. Television monitor, and
4. U-matic video cassettes

For outdoor shooting portable camera is required. For fixed locations basic camera and tripod are enough.

PLANNING A VIDEO PROGRAMME:

Steps involved in planning are:

1. Define the educational objectives of the programme

2. Identify the target audience
   The entry level of the audience and the advantages that the audience would get after exposure to this educational exercise should be carefully considered. Factors which would motivate them to use the programme should also be noted.

3. Design of teaching strategies for using the video film should be decided earlier.

4. Organise the sequence of objectives.

5. Details of the educational process need also to be planned.
   Points to be emphasised should be identified.

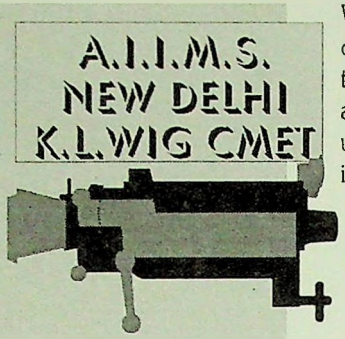
DESIGN PROGRAMME STRATEGIES

The main components of a video are:

P - Picture

A - Activity

S - Sound, word, music



While designing the programme it is essential to have an optimum blend of pictures, actions and sound. Visuals form the dominant component and should be used to catch attention of the audience. The audio component should be used to complement the visuals and should not distract from it. A careful planning of the script is therefore essential.

PLANNING THE PRODUCTION:

1. Make a list of requirements:

i) People -specialists in the field
ii) Rare diseases, case records
iii) Surgical operative procedure
iv) Latest medical equipment and its functioning
v) Graphs and other media -film strips to be included.

2. Programme format:

Objectives, sequence, location, resources,

3. Evaluation of the programme

Critical assessment of the programme by experts for effectiveness.

Script:

Note the shot sequence, type of shot and sound recording. Script for video shooting is usually in two column format. Visuals on the left and sound on the right.

Guidelines for preparation of a video programme

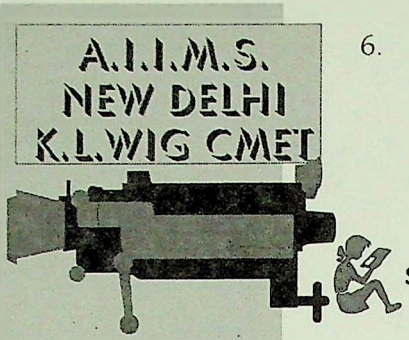
1. Select a topic and divide it into subtopics

2. Identify the objectives of the programme

3. Identify the target audience and their background level of knowledge.

4. Plan the content Identify the visuals
   Select the shots-long shot, medium shot of close up.

5. Make the programme interactive by inserting questions and self assessment questions in the programme.



6. Provide topic organisers and summary at the end of the programme Supplement programme with a workbook which would provide guidelines for pro ceeding with the programme and indicate stop stages in the programme for answering questions.

Specific Learning Objectives of Video Session

At the end of this session, the participants should be able to:

1. Justify that there is a definite need for making a video film on a particular instructional situation
2. Outline its basic contents and structure
3. Write the script of the programme intended
4. Prepare a story board or shooting script of the material
5. Guide the camera, technician about various shots and angles.
6. Direct the shooting of the video film and understand basics of sound recording
7. Understand basic principles of editing.

CREATING A VIDEO FILM

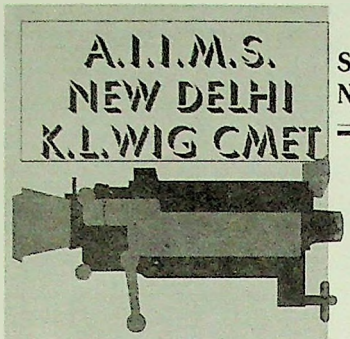
Each group should now be able to create one video film of about 5 minutes duration.

Shooting Script : A sample

TECHNIQUE OF EXTERNAL CARDIAC COMPRESSION/ MOUTH TO MOUTH BREATHING

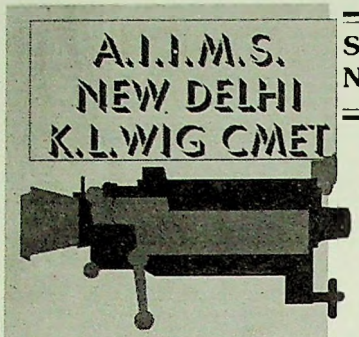
Target audience : Undergraduates, Para Medical

Duration : 5 minutes



Shot No.	Description of shot	Camera No.	Visual	Audio
1.	L.S.	1	Dummy and the presenter	For external cardiac compression the correct place for application of hands is the lower half of the sternum
2.	C.U.	II	Presenter identifying the suprasternal notch	The correct point is identified by feeling the suprasternal notch and the xiphoid
3.	C.U.	II	Presenter identifying the Xiphoid	
4.	C.U.	II	Presenter puts his hands on the lower half of the sternum	The lower half between these points is the site for placement of the plam.
5.	C.U.	II	Showing the placing of heel of palm on the sternum	The heel of hand is applied to the lower sternum
6.	C.U.	II	Followed by placing the second hand	
7.	M.S.	I	Showing body, the hand position for external compression	Second hand is placed on top of the first hand
8.	M.S.	I		The compression is done straight downwards using the body weight keeping the arms straight.

L.S. :- LONG SHOT, C.U. :- CLOSEUP M.S. :- MID SHOT



Shot No.	Description of shot	Camera No.	Visual	Audio
9.	C.U.	I	The compression by the presenter	The sternum is pushed downward by about 1-1/2 to 2 inch for an effective compression
10.	M.S.	I	Repeat compression by the resuscitator	
11.	L.S.	I	Presenter coming to the head end and making position for mouth to mouth breathing	After every 15th compression 2 breaths to be given by the resuscitator and the cycle is to be repeated. Incase of 2 resuscitators, 1 lung inflation is interposed after every fifth sternal compression.

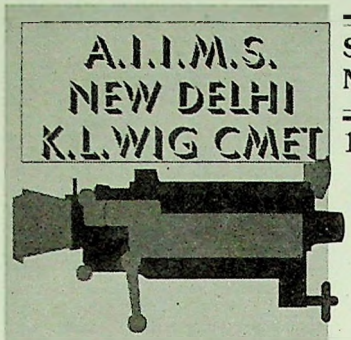
Sample of video script on preparation of a peripheral blood smear:

Target Audience : Undergraduates (on any subject)

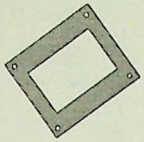
Work Plan:

The group will be first shown the procedure of making a video film by resource person. Later they would write their own script and shoot a 5 minute film. An overview of editing techniques will be demonstrated in the studio.

Format for writing a video script:



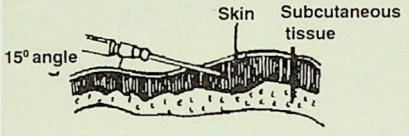
Shot No.	Description of shot	Camera No.	Visual	Audio
1.	Long Shot of Tray	1	Presenter identity & Each objective order 1,2,3	Essential requirement for making a good p/s is to keep the following ready : 1.Scrupulously clean slides 2.Smooth edged in spread 3.Swab, spirit and lancel.
2.	C.U.	2		
3.	M.S.	2	Presentor cleans the finger with swab	Clean the index on middle finger & spirit & allow it to dry completely
4.	C.U.	2	Presenter giving finger prick	Give a finger prick Do not squeeze the finger and the blood to flow freely.
5.	C.U.		Of sqeezing the finger with X	
6.	C.U.		Spreader to put on blood and blood seen to spread on spreader	Place a drop of blood on the slide and allow the blood to spread on the edge of the spread.
7.	C.U.		Focus on angle	the angle of the spreader to the slide should be 30°
8.	C.U.		Good Slide point, shape, size, head body and tail	A good smear should be 2 cm in length tongue shaped and have identifiable, head, body and tail.
9.	C.U.		Long smear hesitation marks thick smear, thin smear	Bad smears are too long, have hesitation marks and are either too thick or thin.



Description/visual
A sheet of typed script:

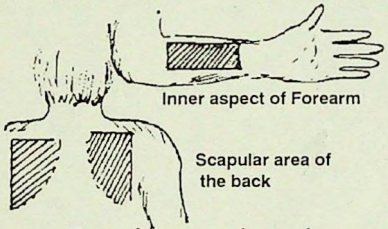
* Intradermal
* Subcutaneous
* Intramuscular
* Intravenous

Commentry
Parenteral medications are given by four different routes; Intradermal, subcutaneous, intramuscular and intravenous.



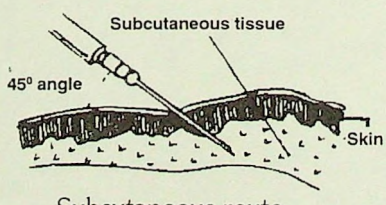
Intra-dermal route

With intradermal route, medicationsare deposited just under the epidermis. After the injection, a small wheal is visible on the skin. Only small amounts are injected and absorption is very slow. This route is commonly used for allergy or tuberculosis testing.



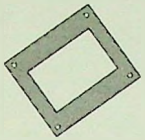
Sites for intra-dermal injections inner

Sites for intra-dermal injections are inner aspects of forearm and the scapular area of the back.



Subcutaneous route

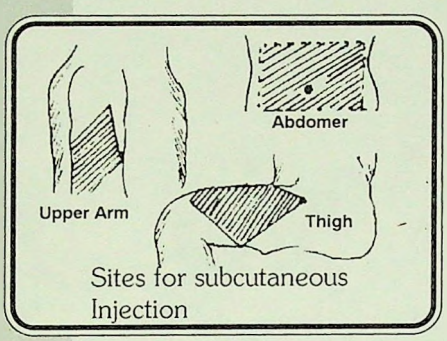
Subcutaneous route provides fairly rapid absorption that is within 20-30 minutes of small amount of highly soluble drug. Medication is deposited into the fatty connective tissue underlying the skin but above the muscle tissue.



Description/visual

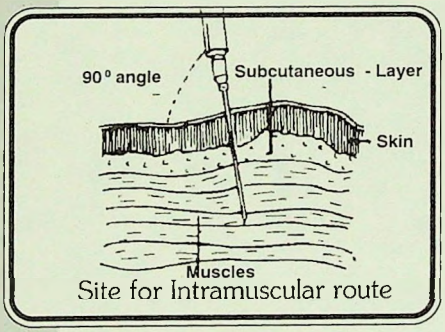
Commentry

The sites for subcutaneous injection include the forearm, thigh or abdomen where bones and blood vessels are not close to the skin surface.



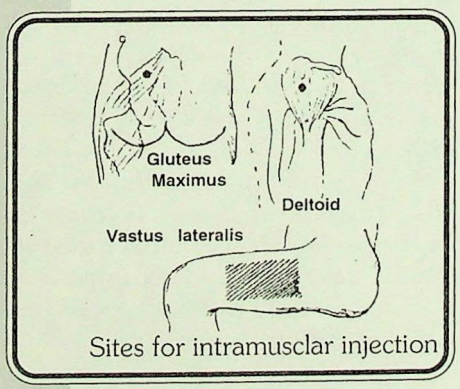
Sites for subcutaneous Injection

The intramuscular route is commonly used, especially when medications are toxic or irritating when given by alternate parenteral routes. Medication is deposited directly into the muscle layer where it is generally quickly absorbed.

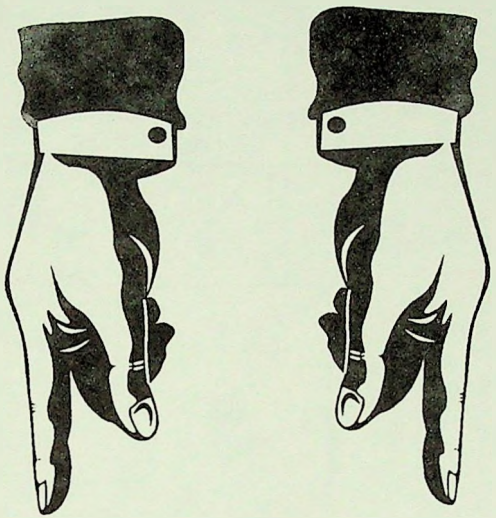


Site for Intramuscular route

Common sites for intramuscular injection are the gluteus maximus, ventrogluteus, vastus lateralis and deltoid.



Sites for intramusclar injection



LETS' GIVE IT A TRIAL (VIDEO)

By now, you have a fair idea of video production. It is time you plan for making your own video clipping on a topic that fits into the video format.

If you have studio facilities around, do not hesitate to exploit the situation.

Low cost video production is not a utopian concept. You can begin your production even by a portable video camera, using VHS format. After writing the video script, the visuals can be recorded first and then the cassettes can be got edited with voice over and special effects with outside assistance.

Where there is a 'will' to produce video films, there is 'way' to sort out technical problems. So why not make a beginning?

INSTRUCTIONAL TEXT DESIGNING

INSTRUCTIONAL TEXT DESIGNING

INTRODUCTION Print media are perhaps the oldest media known to mankind, but most commonly used amongst media in learning. Whether, it is textbook, handout, manual, workshop pamphlet or a lecture note, a printed material has the advantage of being easily accessible, affordable and acceptable. The print media offer a high degree of flexibility for use according to one's own pace of reading and learning. One can go deeply into the matter or quickly 'browse through' the contents or 'exit' whenever desired. Both fast learners and slow learners can benefit from a printed text. However, a very little attention has been paid on how to improve the 'readability' of a text and how to increase the learning value.

RECENT INTEREST

The print medium has been fully exploited for commercial purposes in the terms of advertisements, to promote a service or a product, to publicise an event or to develop an attitude. However, it has not been exploited for educational purpose. This is not only due to lack of awareness of research information in this field but also attributed to apathy on part of the teachers and the students. However, with the shift in the emphasis from didacted teaching to 'active learning' educators all over the world are confronted with the issue of improving the quality of text. the growing interest in the field of distance learning as a viable alternative to formal schooling has provided a new impetus to the improvement of text.

MEDIA : A COGNITIVE VIEW

One of the most important ideas derived from the field of cognitive psychology is that media 'perse' does not facilitate learning. It is the interaction of media with the processes of perception, communication and cognition , that results in learning.

According to cognitive view, learning is a 'constructive' process controlled by the learner. A learner receives external information and processes the same through perception, communication and cognition in the light of his/her previous representation in the memory system to build his /her own **knowledge**. In this process, the **media attributes** facilitate in encoding of the information in the memory system.

RESEARCH FINDINGS

From the available research on learning from text it can be concluded that:

(a) reading is an interactive process between reader and text;

(b) The process is contributed by characteristics of both the text and the reader;

(c) Knowledge in memory is highly structured and organized;

(d) The content of the text can be organized in such way that it facilitates cognitive processing

(e) The design of the text can be manipulated through verbal and typographic cuing supported by visual illustrations and proper organization.

The approach to the instructional text designing therefore should address three issues:

i) Analysis of the learner characteristic,

ii) Analysis of the content,

iii) Analysis of the design elements.

LEARNER CHARACTERISTICS :

By and large, fast learners are fast readers and slow learners are slow readers. Fast learners can easily handle a large chunk of information, where as slow learners require learning material to be broken into simple steps, aided by illustrations, scope for elaboration through questioning etc. The challenge for a text book designer is therefore how to organize a text book in such a way that readers of different ability can be equally benefited from the text. Provision of different tracks of text, or branching of text as done in programmed learning text etc. could be useful.

CONTENT OF THE TEXT :

Considering the theoretical principles of learning one can derive following implications:

(1) Efforts should be made to provide maximum interaction between the reader and the text:

This can be done by following mechanisms:

(a) Providing questions at appropriate intervals

(b) providing blank spaces, space for making readers own notes, symbolic representations in the form of concept maps; flow charts etc.

(c) Providing opportunities for feedback at appropriate interval. This should include provision for failure analysis.

(d) systematically building on previous knowledge and relating the content to the life experience of the learner.

(e) Modeling of the complex concepts by providing illustrations, pictorial representation, two dimensional effect etc.

2. Directing attention of the reader to what is being presented results as 'advance organiser for motivating learners. It also provides an 'over view' of the matter which helps in learning. Sometimes a pre-instructional strategy such as distributing the objectives of the text before hand would help. Providing an over view or a beginning summary would greatly contribute to learning.

The title of an instructional text is perhaps most important device in directing learning. Sub-titles for various sections/ideas in the text facilitate sequential development of text. The title could be in the form of a questions, a catchy phrase etc.

3. The sequencing of text should be logical, that is,in the order of events that occur. However psychological consideration should over ride the logical organization. For instance, the end part can be told first and the events can be told later as done in case of 'flash back' technique.

The sequencing of text is greatly facilitated by conducting 'topic analysis. The topic analysis results in hierarchical relationship amongst various concepts and ideas.

4. While beginning summary helps in providing over view of the text, the end summary helps in recapitulating the ideas and summarizing the important prints.

5. The style adopted by the author in communicating content is of considerable importance in literacy texts. In case of instructional text, the style may be simple.

Language plays an important role in comprehension. The language should be simple. It is always preferable to use active voice. Double negatives should be avoided.

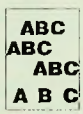
The readability of a text depends upon the length of sentences. Sentences with less than 20 words are ideal, between 20-30 words are satisfactory and between 30-40 words are difficult to comprehend.

DESIGN OF THE TEXT

The design of the text involves its layout,spacing of sentences and pharagraph, use of different size and font of letters for highlighting , appropriate use of visuals etc.

SPACING

The spacing and layout of the text can be varied according to the requirement, thanks to the availability of the computerized desk top publishing systems.Though double spaced text is more readable, it increases the cost. Single space text on the other hand is more economical but less readable. The readability can be increased by increasing space between paragraphs and between sub sections in a proportionate manner. For instance 2 line space can be left in between paragraphs and 4 line spaces in between sub sections. It is proper use of white space in the background of text, which really matters in making the text more readable.



JUSTIFICATION

Computer based word processing provides for automatic justification on both sides. However, reading research shows that people tend to direct their eye movement from left to right. It is therefore desirable that left side justification is preferable to right side or both side justification. Breaking of words toprovide justification may be avoided. Wherever possible a new sentence may start from left side.

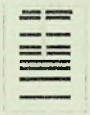
TYPOGRAPHICS CUES:

Bold, underlined or italic fonts can be used to emphasize the matter. While capital letters are commonly used for titles, letters in lower case are preferable for continuous text. Lower cases have better readability than upper case.

The use of numbering system helps to differentiate different points. The use of bullets, asterisk marks etc. are other mechanisms for providing cues.

USE OF VISUALS

Pictures, illustrations, tables, graphs , flow charts and other kind of exhibits play a very important role in increasing learning. Because visual cues are more appealing and facilitate comprehension. They also break monotony in reading. It is important to see that visuals appear at appropriate place in the text as otherwise reader may have to struggle hard to link textual matter with the visual.



SINGLE VS DOUBLE COLUMNS

Single column has the advantage of being more economical. However, from the print of view of readability double column is preferable especially in case of texts with A 4 size.

SUMMARY Instructional text designing based on the principles of media related to learning opens up a new era of excitement and opportunities so far untapped by the educators. Keeping in mind the characteristics of learner, and the attributes of the print medium one can scientifically proceed towards the organization of the content and formulation of design. The fullest exploitation of multi media in learning is the ultimate agenda of the future. In this race, print medium constitutes the core of the strategy. The sooner one is prepared to exploit its potentials, the better for a learning society.

INTERACTIVE HANDOUT

The limitations of a didactic lecture in sustaining motivation for learning are well known. Sometimes teachers resort to giving handouts to supplement classroom instruction, or to substitute a lecture when there is shortage of time. Unfortunately such handouts also do not serve the purpose as the students may not be able to correlate the concepts with the information given in the handout. One of the best possible solutions is to design Interactive handout which can be deployed as a tool to focus the attention of learners on relevant issues while delivering the lecture.

Interactive handout provides the basic framework of the lecture content, yet gives ample scope for the learner to 'elaborate', explain and clarify the concepts in the light of his or her own conception of the learning task. It enlists the objectives of a teaching session in the beginning.

By virtue of active learner participation, interactive handout has high potential for promoting learning. It enables the teacher to break the monotony and boredom induced by a long lecture. More importantly it generates a very useful reference material created **by the learner** and **for the learner** for consolidating and furthering his/her learning at a later stage.

We have demonstrated below a specimen of interactive handout on this topic itself which can be used for training the users in using interactive handouts. The users could be students, teachers, or both. The time required for running this session is about 45 minutes. The interactive handout can be actively managed by the teacher or could be administered to a group alongwith detailed instruction without teachers participation.

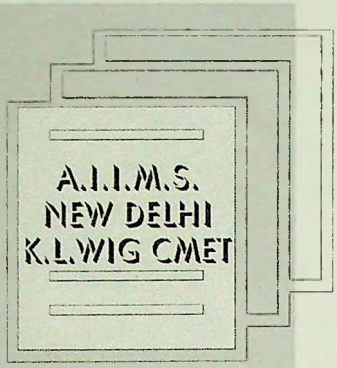
TURNING LECTURES INTO INTERACTIVE HANDOUTS

For many reasons, among which tradition, necessity, convenience and choice are perhaps the most prominent, the lecture method continues to be the dominant mode of instruction in institutions of higher learning.

One criticism of lecture method is that it is a system of one way communication in which the student is a passive participant-merely a listener. Today we shall deal with Interactive Handouts which may be one of the ways of overcoming some of the problems of lecturing.

The specific objectives of this session are that at the end of this session you should be able to:

1. Describe the behaviour of students in lecture sessions.
2. Analyse student behaviour in terms of actively or passively.



3. List some of the problems of lectures.
4. Outline some of the problems of lectures.
5. Describe how handouts can be made interactive
6. Design interactive handout material of your own.

1. What do your students actually do for most of the time they spend in your lecture? List verbs below- honestly please.

*
*
*
*

2. How much are your students learning during your lectures? Go back to the verbs written in Qs. 1 and decide which were

* Active and constructive (AC)
* Active but destructive (AD)
* Passive but constructive (PC)
* Passive but destructive (PD)

regarding your students during the lectures.

3. List below three (or more) problems with the lecture situation.

*
*
*

4. What are the advantages of using handouts.

*
*
*

5. What are the disadvantages of using handouts.

*
*
*

Traditional lecture is dominated by "Content".
We feel; Comfortable if content well prepared.
Relaxed if we know what to 'cover'
Pleased if we map out content of future lectures.
But; what about the process?

1. **Teaching process**
2. **Learning process**

Do students learn everything that we cover?
Let us now look at the responses to what students actually do during the lecture.

Passive {+}	Active {-}
Writing what you say	Asking questions
Writing from the blackboard	Answering questions
Copying from screen	Calculating
Day dreaming	Discussing
Listening to you	Interpreting Data
Fidgeting	Working out reasons
Watching you	Deciding what is
Looking out of the window	important
Doodling	Fault finding
Yawning	Self marking
Lecturer's problem	Making decision

In control of time, place, pace, style and content but it is not so easy to control the attention of the students.

The focus is on what the lecturer wants to say which may be at the expense of what the students need to know.

STUDENT'S PROBLEM

1. May fail to attend - physically or mentally
2. Become bored or distracted - by the topic or the speaker.
3. May take notes which are irrelevant, incomplete or illegible.
4. May not be at their best at that time of the lecture.
5. May hesitate to ask questions.

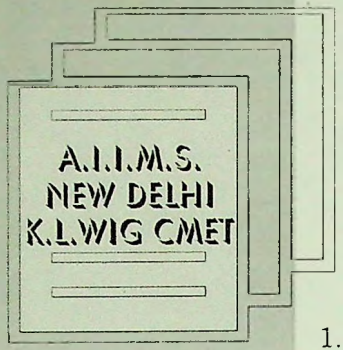
ADVANTAGES OF USING HANDOUT MATERIAL:

Handouts can mean that students have "guaranteed" reception.

1. Straight handouts
2. Interactive handouts

SOME ADVANTAGES OF USING HANDOUT MATERIAL:

1. Each student gets the same set of notes
2. Students do not have so much passive work to do.
3. So more time to think about the content of the lecture.
4. Slow writers are not at a disadvantage.



WHAT ABOUT THE DISADVANTAGES:

1. Students may " switch off"
2. May not come at all
3. Handout is too extensive!
4. Is expensive!

WHAT IS AN "INTERACTIVE HANDOUT"?

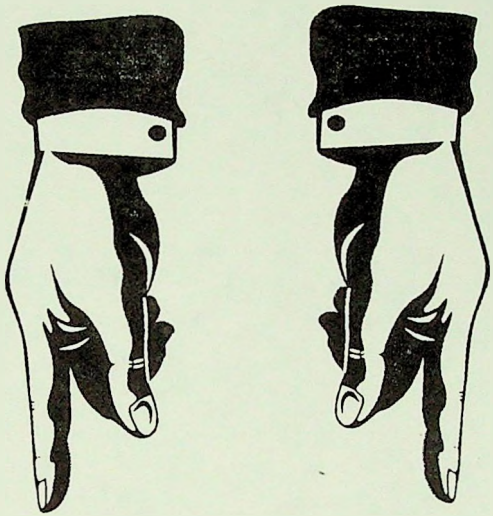
1. More like mini open learning modules than like lecture notes.
2. They contain white spaces
3. Every now and then each student does things.
4. Around them a variety of activities are structured during a lecture.
5. Each student works independently at times during the lecture.

FEATURES OF INTERACTIVE HANDOUTS:

1. Two to six A4 sheets, issued to students at the start of the class (this will ensure punctuality).
2. Start with a list of objectives to give the students a clear idea of "where they should be" by the end of the lecture.
3. Use it to elicit information.
4. Use it for students to practice things.
5. Final page, sometimes, can contain a short post-test which reviews the content of the lecture just given. The post test can be self assessed by student, by peers or occasionally collected in and marked by the lecturer.

FROM LECTURE NOTES TO INTERACTIVE HANDOUTS:

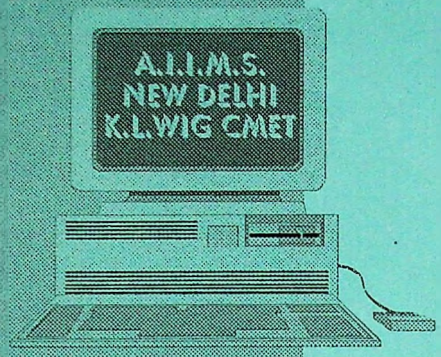
1. Delete quite a bit of the detail
2. Add blank spaces.
3. Write briefings for students regarding what exactly they should do.
4. Design revision tasks
5. Provide a clear set of objectives and place them at the beginning of the handout.



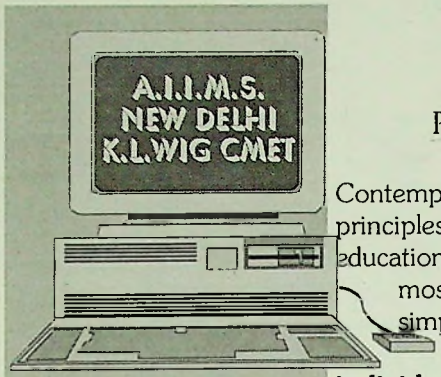
LETS' GIVE IT A TRIAL (TEXT)

Having gone through the write up on text designing and interactive handouts, we hope, you will be enthused to develop an interactive handout to supplement your scholastic (but boring !) lectures. Keep your students awake by making them scribble, out line, flow chart or even reproduce your important points , individually or in small groups during long sessions.

You do not need a printing press for designing your texts. Thanks to computers now freely available. You can play with different fonts, layout, spacing and styles of presentation. All you need is little more effort and a lot more 'imagination' to see that your texts and handouts are really interactive.



ROLE OF COMPUTERS IN LEARNING

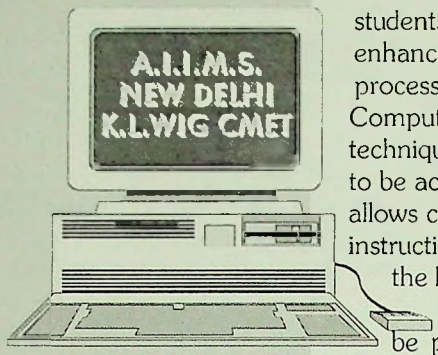


ROLE OF COMPUTERS IN LEARNING

Contemporary research in human learning has revealed many principles that imaginative educators have exploited to make the educational enterprise more efficient or more effective. But the most profound of these research findings may be the simple confirmation of a self evident truth- that **learning is an individual matter, accomplished by individual learner in an individual way, at an individual pace, in response to individual motivation and personal rewards**. Teaching methods which place the learner in an **active situation** are more likely to be effective than those which do not. Biomedical knowledge and professional skills are changing so rapidly that what is learned at college may be obsolete by the time a student becomes an independent practitioner. The major goal of any medical college, therefore, should be to encourage and reward students for assuming increasing independent responsibility for their own learning.(1)

Arguably the computers constitute the most important single resource ever to become available to the teachers and students since the invention of the printing press and may well have a similar revolutionary effect on the way education is carried out, bringing about the massive shift from conventional expository teaching to the mediated individualized learning which is interactive, stimulating and rewarding.(2)

It is not too far fetched to visualize that in the coming decades computers will be involved in almost all learning/ teaching. Apart from acting as data bases for information, computers will guide students by devices such as hypertext and will also provide assessment at critical junctions, giving immediate feedback. Clinical skills such as anesthesia, image interpretation, neuroanatomy and cardiopulmonary resuscitation will be taught through realistic simulators on screen or via computer controlled mannequins. The advent of "virtual reality" in which a three dimensional scene is viewed through stereo-goggles and objects within the computer generated scene are manipulated by movement sensors in the operator's gloves, will even allow surgical training by simulation. Obvious advantage will be safety, the ability to repeat tricky maneuvers and simulation of complications. No expensive operating theater, staff will be needed and "patients" will be available at the touch of a button. There will be rich potential for examination, both undergraduate and post graduate and for selection of candidate for particular jobs; interviewees for a surgical post will each be observed removing the same "virtual appendix".(3)



In the present decade, computers can help to liberate students from the burden of the rote learning of facts and to enhance the role of reason and imagination in the learning process.

Computer assisted learning is an indiviualised learning technique which allows a wide range of educational objectives to be achieved with the learner working at his own pace. It allows considerable interaction between learner and instructional program which can be adapted to needs of the learner and can be highly stimulating. A wide range of otherwise inaccessible learning experiences can be provided to the learner. Computers can have the additional benefit of allowing on going assessment and monitoring to take place automatically and so can be used for assessment- both formative and summative.

The early days of using computers in teaching and learning saw a plethora of acronyms describing different styles of Computer Assisted Learning (CAL) such as the Computer aided instructions (CAI), Computer based learning (CBL) and the Computer Managed Learning (CML) among others.

In 1977, Kemmis, Atkin and Wright (4) proposed a framework for evaluating CAL which has stood the test of time and it seems unlikely today that any form of computer-learner interaction could be conceived which could not be helpfully illuminated by their scheme of classification.

Kemmis et al suggested that all forms of CAL could be categorized under one or the other of four paradigms, and that these paradigms could be directly related to general educational trends and theories. The paradigms were:

1. Instructional Paradigm
2. Revelatory Paradigm
3. Conjectural Paradigm
4. Emancipatory Paradigm

1. INSTRUCTIONAL PARADIGM : (5)

This is programmed learning based on the behaviorist psychology of Skinner. The basic concept in it is that learning takes place by reinforcement of success. A correct response is therefore rewarded and reinforced while incorrect responses are ignored. The programmer to ensure continued success of the learner has to break the learning process into small steps. This small step wise learning then ensures success but it also guarantees boredom. The student is soon put off by the tediousness.

Skinner's theory which was based on observation of the animals has to be modified and it is now felt that in humans immediate feedback is more important than guaranteed success for learning to take place. In this role the computer is an invaluable tool and modified packages allow the learner to proceed at a much greater rate, while still informing him of errors and misunderstandings.

It is possible to construct Instructional programs of the branching type which test the student's knowledge and allow remedial loops to be entered if a certain pre determined score has not been achieved by the learner.

These programs, however, give no freedom of choice to the learner and pace them through the pre-prepared dialogue of the instructor. They are relatively easy and cheap to prepare. Multiple Choice Questions (MCQ) will probably fall within this category.

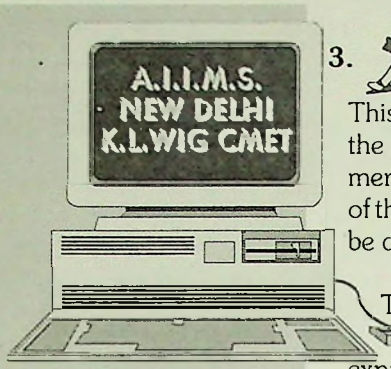
2. Revelatory paradigm:

It is based on the cognitive psychology. This is the "discovery learning" approach. It is held that learning takes place in the successful meeting and overcoming of difficulties of understanding, that the light dawns and the truth is revealed at the frontier between what is known and understood and what is being encountered and explored for the first time.

In this form of CAL, much more emphasis is placed on the learners and their needs and much less on the instructional material. Instead of the programme being in total control and the learner as a passive responder, the programme allows and encourages the learner to choose paths through the knowledge base, to explore what is hidden and what is gradually revealed.

Typically, the programme sets up a model of reality which the learners can explore at their own pace and in their own fashion. The model of reality often takes the forms of simulation. A simulation is appropriate when reality itself is too complex, too dangerous, too remote in space or time, too expansive or otherwise inappropriate for the learner.

No computer simulation can, however, hope to model every facet of the real life situation. Therefore, the CAL programme should refer the students to other sources of information and data to supplement the learning experience.



3. Conjectural paradigm:

This is an extension of the revelatory and like it may well take the form of a simulation. It, however, allows the learners not merely to explore the model, but actually to change the nature of the model,or atleast the parameters underlying it. This may be described as the "What if.....?" approach to learning.

The ultimate use of this type of CAL is the knowledge base or expert system, which consists of logical rules expressing all the known wisdom on any particular topic. The student compare his responses to a given situation with the "expert view".(6)

4. Emancipatory paradigm:

This CAL programme presents a screen of information which summarizes the knowledge base of a particular subject. Students move a cursor over the screen with a mouse or a tracker ball and highlight areas in which they are interested. If a button on the mouse is pressed, the student can enter a deeper level of information and the process is repeated. Thus it is possible to browse through a subject at a superficial level, pausing to give more attention at a point of interest or confusion and to request further information.(7)

4.1. Interactive Video:

Interactive video is an example of hypertext/ hypermedia. It a system of structuring and presenting textural, graphical, audio and video information in an integrated form. Hypertext allows the author to make use of existing material to create an interactive lesson.(8,9,10)

In Interactive video the computer controls the video source which can be video tape, video disk or CD-ROM. It requires a special board to integrate video and computer signals. The student can input information through the keyboard, mouse or directly onto a special video screen. The student now has an opportunity to navigate through the material at his own pace and to form his own structure.(11,12)

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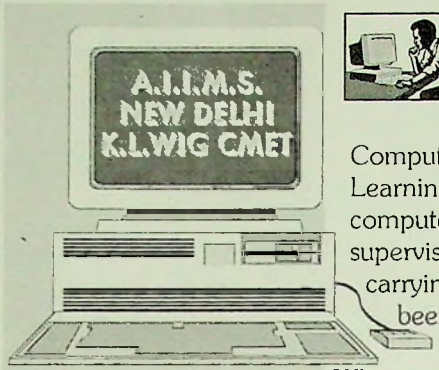


COMPUTER ASSISTED LEARNING

Computers can be used as a versatile tool for learning. Learning can be direct with the computer in the form of computer instructions or Computer can help in learning by supervising the progress, making a work schedule and by carrying out periodic assessment of whatever has been learnt.

When computer only plays a supervisory role like in time table or budget planning it is called Computer Managed Learning(CML). In Computer assisted Learning (CAL) computer directly acts like a teacher.

For any educational or learning process it is important to have a student with improved performance in specific areas at the end of learning session. CAL is primarily a Student centered learning approach in contrast to Teacher centered approach traditionally followed, thus it has all the advantages of a student centered learning system. These include learning in specific units at a time, which ensures quality of learning material, there is a clear cut end point with self paced learning and self assessment facility. Besides student has to actively participate in learning which helps to maintain the concentration.

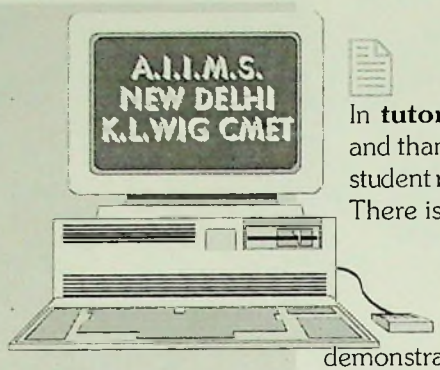
Of course this means that student has to be alert with high motivation. Besides preparation of good learning material requires considerable time and skill and is available only in selected subjects and areas. Some teachers do not like a passive role and infrastructure is not available everywhere to conduct CAL exercises effectively.

In student centered learning system, computers play the front line role in teaching. Not only subject content can be taught but computers can also simulate laboratory situations or patient problems and model experiments can be conducted on computers.

Basically computers play two important roles in CAL system.

1.  **Tutorial mode** - computer acts as an instructional device.

2. **Laboratory mode** - computer acts as a learning resource on which experiment is conducted.
   Sometimes it may be a combination of two.



In **tutorial mode** students is presented with information and than questions are asked on this information. Based on student response additional learning information is provided. There is facility to interact at several levels.

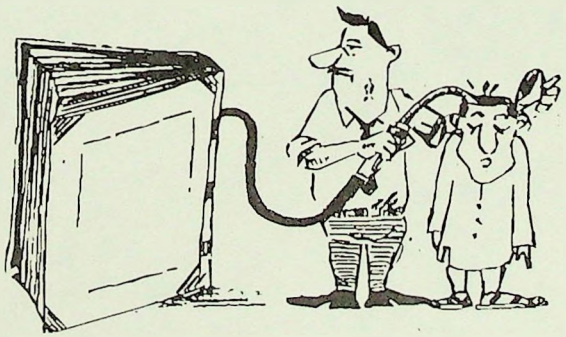
Laboratory mode is specially useful when a practical demonstration otherwise difficult or impossible or apparatus or machinery required to carry out the experiment is not there. Sometimes even real life situations which would otherwise take unacceptably long time can be investigated through use of computer.

Main strength of CAL lie in having a possibility to achieve a wide range of educational objectives, self paced and interactive learning based on level of individual learner and facility of providing a regular feedback and being available at any time of the day.

Difficulties for CAL include non availability of suitable ready-made courses, time consuming and expensive designing by experts if one wants to prepare such courses and inability to teach psychomotor and communication skills. Besides availability of computer hardware and computer literacy is a must for CAL.

Computer use is still limited due to several technical factors including availability of computer and software as well as due to attitudes of educationists and administrators.

Ideally computer to be used effectively should be used as a supplement to the teacher and not as a substitute.



Pouring information....
let's put an end to this

SUMMARY OF CHARACTERISTICS OF INSTRUCTIONAL MEDIA

MATERIAL	ADVANTAGES	LIMITATIONS
PRINTED MEDIA	1. Include common types of materials 2. Have wide variety of applications 3. Simple types quick to prepare.	1. Sophisticated types are costly to prepare 2. Requires suitable reading ability
DISPLAY MEDIA	1. Useful in any kind of room without special adaptations 2. Allows user to be flexible for making changes as presentation proceeds. 3. Easy to prepare and use materials	1. Limited to use with small groups 2. Requires some showmanship on part of speaker 3. May not be accepted as important media forms when compared with projected types

MATERIAL	ADVANTAGES	LIMITATIONS
OVERHEAD TRANSPARENCIES	1. Can present information in systematic, developmental sequences 2. Use simple-to-operate projector with presentation rate controlled by instructor 3. Requires only limited planning. 4. Can be prepared by variety of simple, inexpensive methods 5. Particularly useful with large groups	1. Require special equipment, facilities, and skills for more advanced preparation methods 2. Are large compared with other projectors
AUDIOTAPE RECORDINGS	1. Easy to prepare with regular tape recorders 2. Can provide applications in most subject areas 3. Equipment for use is compact, portable, easy to operate 4. Flexible and adaptable as either individual elements of instruction or in correlation with programmed materials 5. Duplication easy and economical	1. Have a tendency for overuse, as lecture or oral textbook reading 2. Fixed rate of information flow 3. Low fidelity of small portable recorders

MATERIAL	ADVANTAGES	LIMITATIONS
SLIDE SERIES	1. Require only filming, with processing and mounting by film laboratory 2. Result in colorful, realistic reproductions of original subjects. 3. Prepared with any 35mm camera for most uses. 4. Easily revised and updated 5. Easily handled, stored, and rearranged for various uses. 6. Increased usefulness with tray storage and remote control by presentor 7. Can be combined with taped narration for greater effectiveness 8. May be adapted to group or to individual use.	1. Require some skill in photography 2. Require special equipment for close up photography and copying 3. Can get out of sequence and be projected incorrectly if slides are handled individually

MATERIAL	ADVANTAGES	LIMITATIONS
FILMSTRIPS	1. Are compact, easily handled, and always in proper sequence 2. Can be supplemented with recordings 3. Are inexpensive when quantity reproduction is required 4. Are useful for group or individual study at projection rate controlled by instructor or user 5. Are projected with simple lightweight equipment	1. Are relatively difficult to prepare locally 2. Require film laboratory service to convert slides to film strip form unless special camera available 3. Are in permanent sequence and cannot be rearranged or revised
MULTI-IMAGE PRESENTATIONS	1. Can demand attention and create strong emotional impact on viewers. 2. Can compress large amounts of information in short presentation time. 3. Provide for more effective communications in certain situations than when only a single medium is used	1. Require additional equipment, complex setup, and careful coordination during planning, preparation, and use. 2. Equipment and production costs high for complex programms

MATERIAL	ADVANTAGES	LIMITATIONS
VIDEO AND FILM	1. Particularly useful in describing motion, showing relationships, and giving impact to topic 2. Allow instant replay of video recording 3. Videotape reusable 4. Easy to record lip synchronization on videotape 5. May include special filming techniques (animation, time-lapse) 6. Combine still and motion on videodisc 7. Standardized film projector available everywhere	1. High cost for studio production equipment 2. Resolution limited with video for fine detail close-ups 3. Incompatibility of video format types 4. Value of investment in motion picture equipment reduced as video replaces film
COMPUTER-BASED INSTRUCTION (CBI)	1. Presents text information and graphic images 2. Interacts with learners on individual basis through asking questions and judging responses 3. Maintains record of responses 4. Adapts instruction to needs of learner 5. Controls other media hardware 6. Can interface computer and video for learner-controlled programs	1. Requires computer and programming knowledge 2. Requires essential hardware and software for development and use. 3. Resolution of graphic images limited on microcomputer systems 4. Effective when used by only one or few individuals at a time 5. Incompatibility of hardware and software among various systems

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K.L. WIG CENTRE FOR MEDICAL EDUCATION AND TECHNOLOGY

NATIONAL WORKSHOP ON "MEDIA IN MEDICAL EDUCATION"
22-24TH MARCH, 1993.

PROGRAMME

22nd March'93

08.30-09.15	REGISTRATION	
09.15-09.45	INAUGURAL SESSION CHAIRMAN:	PROF. S.K.KACKER DIRECTOR, AIIMS.
09.20-09.25	INTRODUCTION TO WORKSHOP DR. USHA NAYAR, PROF. IN CHARGE, K.L. WIG CMET.	
09.25-09.35	INAUGURAL ADDRESS PROF.S.K. KACKER	
09.35-09.40	INTRODUCTION OF PARTICIPANTS JT. ORGANISING SECRETARY.	
09.40-09.45	VOTE OF THANKS ORGANISING SECRETARY	
09.45-10.15	TEA	
10.15-10.30	PRE-WORKSHOP QUESTIONAIRE	

Key note address

10.30 -11.00	Role of Media in Medical Education - An overview	Dr. L.M.Nath

SESSION - I

Key note address

11.00-11.15	Tape Slide	Dr. P. Chopra
11.15-11.30	Attributes of a good Slide	Dr. V.K.Paul

11.30-13.00 GROUP ACTIVITY

GROUP CO-ORDINATORS.

Group I	Dr. P. Chopra Dr. K.K. Deepak Dr. V.B. Manhas
Group II	Dr. V.K. Paul Dr. Bir Singh Mr. B.V.Adkoli
Group III	Dr. J.Lobo Dr. O.P.Kharbanda Dr. Sapna Naskar

13.00-14.00 LUNCH

SESSION - II

Keynote Address

14.00-14.15 Over Head Projector Dr. Kusum Kapila

14.15-16.00 GROUP ACTIVITY

Group Co-ordinators

Group I	Dr. Manju Vatsa Dr. V.L. Kumar Dr. Anil Gupta
Group II	Dr. Arun Gupta Dr. Rita Sood Dr. A. Shrivastav
Group III	Dr. K. Kapila Dr. S.P. Garg Dr. Manju Mehta

5.00 P.M. Inauguration of K.L.Wig CMET

SESSION -III

23rd March '93
Key note address

09.00-09.15 Video Dr. U.Sabherwal

09.15-11.00	Group Activity

Group Co-ordinators

Group I	Dr. U. Sabherwal Dr. Rita Sood Dr. G.P.Dureja
Group II	Dr. A. Jayaswal Dr. Manju Mehta Dr. V.L.Kumar
Group III	Dr. Bir Singh Dr. S.P. Garg Dr. Arun Gupta
11.00-11.15	Tea
11.15-13.00	Group activity contd.
13.00-14.00	LUNCH

SESSION IV

14.00-15.30	Continue Group activity of Sessions I,II, III
15.30-15.45	Tea
15.45-17.00	Continue Group activity of Sessions I,II, III

24th March 1993

SESSION V

Key note address

09.00-09.20	Computer Assisted Learning Dr. Sunita Mittal
09.20-09.40	Instructional Text Mr. B.V.Adkoli
09.40-11.00	Demonstration of Interactive Hand out Dr. Ashok Rattan
11.00-11.15	Tea

11.15-13.15 Presentations by Participants/Discussion

13.15-14.00 LUNCH

14.00-14.30 Post workshop Questionaire

14.30-15.30 Finalise various activities for presentation during valedictory session

15.30-17.00 **VALEDICTORY FUNCTION**

- Presentation of some of the media prepared during workshop
- Address by Dean
- Views of participants
- Vote of thanks

Rapporteurs for Session

Dr.Vinod Paul - Session I

Dr. Manju Vatsa -Session II

Dr. Manju Mehta -Session III

Dr. Ashok Rattan -Session V

K.L. WIG CENTRE FOR MEDICAL EDUCATION AND TECHNOLOGY

NATIONAL WORKSHOP ON "MEDIA IN MEDICAL EDUCATION" 22-24TH MARCH, 1993.

Name	Designation	Speciality	Place
Dr.S.S.Sircar	Asstt.Prof.	Physiology	UCMS, Shahdara, Delhi
Dr. Naresh Khanna	Lecturer	Pharmacology	UCMS Shahdara, Delhi.
Dr. A.Bhattacharya	Professor & Head	Anaesthesiology	UCMS Shahdara,Delhi
Dr. Usha Rusia	Reader	Pathology	UCMS Shahdara,Delhi
Dr. B. Srinivas Rao	Asstt. Prof.	Physiology	Osmania Medical College Hyderabad (A.P.)
Dr. R.S. Ashok Kr.	Asstt. Prof.	Pathology	Osmania Medical College, Hyderabad (A.P.)
Dr. B.A. Rama Rao	Asstt. Professor		Surgery Osmania General Hospital, Hyderabad.
Dr. M. Sridevi Reddy	Asstt. Prof.	Surgery	Osmania General Hospital, Hyderabad.
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Dr. A Baji Rao	Non Medical Asstt	Forensic Med.	Sidddhartha Medical Colleg e Vijawada-8
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Dr. Khaja Nasseruddin	Asstt. Professor	E.N.T.	Govt. Medical College, Mysore.

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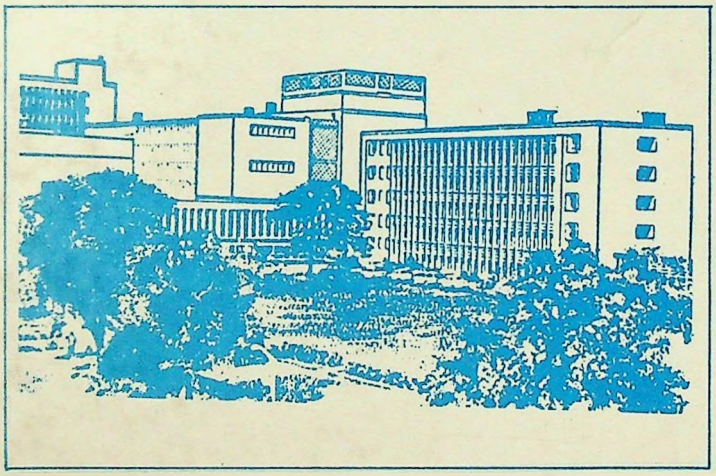

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