PRACTICAL WORK

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PRACTICAL WORK

Chapter 1

THE ART

Q.1. Bring out clearly the meaning and functions of teacher education.

Ans.

Meaning of Teacher Education

It is only very recently that art has come to be included in the curriculum of Indian schools. For centuries, education of the intellect was regarded as the end of educative effort, while the finer feelings and emotions of the child were entirely neglected. But psychological research has clearly revealed the importance of art education in the harmonious development of the child's personality.

Art represents one of the greatest achievements of mankind; it is the expression of man's creative impulse and fulfils a deep desire to create something beautiful through the medium of line, form or colour. Instruction in art is necessary for the full mental development of the pupils, especially if that development includes a cultivation of the aesthetic sense, and an appreciation of art on its higher and finer levels. In fact, one main purpose in teaching art is to cultivate in the child a sense of beauty which will endure throughout life, and so make him discontented with the ugliness around him. Besides this, psychologists have discovered that the repressed emotions of the child find a healthy outlet through the artistic expression.

Prof K. G. Saiyidain states in his introduction to Child Art: "But art is an essential element in his education because it is an essential medium of self-expression from him. Encouraged to express himself in various media, the normal child will seek spontaneously to express his imagination and his observation in drawing and painting. The teacher of an may get to know the child more easily and more fully through the child's drawings and paintings and modelling than through the more stereotyped school activities. Language conceals or confuses thought as often as it reveals it, and this is as true of the unsophisticated child as it is of the sophisticated adult. But a child's drawing is curiously revealing. The more obvious things that the child's art reveals are a flair for colour, a sense of for van instinct for symmetry, and an independent and original approach to expression. For, the choice of a subject is just as revealing of child talent and originality or even eccentricity as it is of child environment and his adjustment to it. Sometimes a drawing reveals unsuspected potentialities: sometimes it is a pointer to unsuspected limitations. But it always tends to stimulate further development and, properly guided, it does not suppress what lies latent in the child."

There are two methods of approach in the teaching of art. One is by stimulating the interest and feeling of the child, based on his natural desire for self-expression. The other method is to take the child through a course of exercises designed to give him technical skill. In spite of the fact that technical skill is necessary in artistic expression, we must not forget that it is not the essence of art. If the pupils leave school with a mastery of technique, and have attained skill in the use of pencil and brush, but evince no have and discernment of the beautiful, we have certainly failed in our tasks. The method of teaching employed must develop the faculty of observation, so that nature's loveliness and artists' work may be appreciated by the pupil and he should be alive to all forms of beauty.

Some Problems

The introduction of art in our schools has created a number of problems which are somewhat difficult to tackle. The first one is that of suitably qualified teachers. The introduction of art in the B. A.

courses by the Punjab University, some years ago, has eased the situation to some extent, teachers are now available who have had some instruction in art at University stage, but there are very few teachers with a teacher's training in art. Until we have a large number of trained art teachers, and not merely good artists, this important subject will surely suffer in our schools. The other problem which confronts us is that of large classes. To expect a teacher to give instruction to an art class of 45—50 or more pupils in a period of 45—50 minutes is a gigantic task; fruitless efforts and a waste of time are the usual results. The group method of teaching has been found to be the most effective combination. A group of 12—15 children at a time is about the maximum to whom lesson; in, art can be given effectively.

Methods

There are certain aspects of the teaching of art which must be considered here, before we can decide on the most suitable methods teaching the subject in our schools. There are two methods available—first of all, the old method of imparting direct and dogmatic instruction to the child on the technique of art during all lessons, and the other, and the modern method of leaving the child without direct instruction and example, merely encouraging him to express his own ideas freely through the medium which he selects. These are the two extremes and we have to evolve a method which combines the advantage of both while eliminating their limitations. We realise that it is the teacher's duty to give some idea of technique to the pupil, but this instruction must be adapted to the age and ability of the child. It is very necessary to show the child a variety of examples and to train him to look and think for himself. What we see, he will make real to himself in his own work, and this will be possible by what he learns of technique from his teacher. The child's nature is so strong that he gathers and assimilates much material for expression work from his environment. The main things that the teacher has to teach him or the power to use materials with skill so that he may be able to express his ideas freely, the ability to observe his surroundings and to absorb all the beauties he sees around him in the world of nature, and lastly to appreciate the beauty of design wherever it occurs.

In this connection **Hellier** writes in "Indian Child Art" that the aim of the drawing or art teacher in former years was to "impart skill in representation and the ability to draw an object or person realistically with its proportion correctly indicated." What the education achieved by this method was some technical efficiency but no originality, the method was not guaranteed to give joy or satisfaction to the pupil and it gave no scope for individuality.

Children were expected to learn skill in the way they were told to do. Each child was treated in the same way. The modern methods aim at developing the individuality in the child. Children now have a scope for their natural delight in making things in their own way. There is no need for constant correction or fear of doing the wrong thing and incurring the teacher's censure.

Materials

The introduction of art teaching in our school has brought a very difficult problem to the forefront and that is the problem of the cost of apparatus and materials. We shall here consider which are the most necessary materials in the teaching of art, and what principles should guide us in their selection, bearing in mind their cost and suitability and the age of the pupils for whom they are meant.

Paper. For school use the usual book-form is most unsatisfactory. The pupil should be allowed to work on large sheets of paper. Each pupil can make a thick paper envelope in which he may keep his best drawings. Different sizes of paper may be used for the different exercises; besides, the pupil may use different qualities and kinds of paper according to the work he is doing. Thus, the pupil has much more freedom in the selection of paper than when he has to use one drawing note-book for every attempt of his. His drawings can be hung up along with those of other pupils for comparison and criticism, and his poorest attempts can easily be discarded by him if he does not like them.

The choice of the type of paper to be used is not as easy as it seems. For early experimental work in the kindergarten and lower primary classes, the cheaper paper may be used provided it has an

unglazed surface. Unprinted newspaper and rough grey or badami paper is easily available and fairly cheap. Packing paper in different shades, brown, buff, or badami. if obtainable, is very suitable for crayon work. In most modern schools, however, the children of the lower classes make their early attempts at drawing on wall blackboard with white "and coloured chalks. Here they can get sufficient practice in making large and bold drawings.

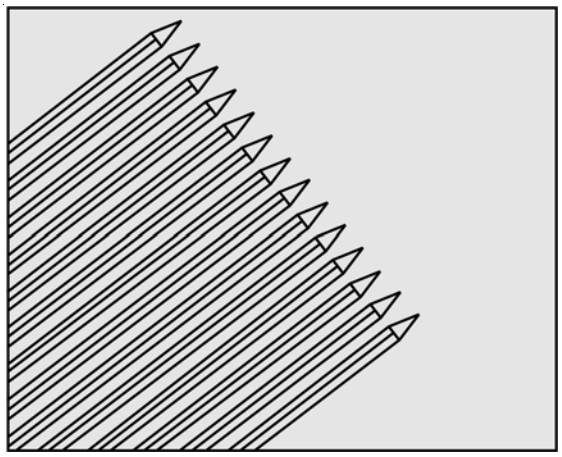

Fig. Pencils

Pencils. Children should be given short soft black pencils for their early attempts at drawing. Short pencils are necessary so that they may be held with the thumb on top. Later on, when the pupils have gained muscular control, long pencils with the points may be provided for finer and smaller drawings, A good sharpening machine is very necessary in the art room, and the teacher should help the pupils to keep their points trim and sharp.

Coloured pencils are very useful in many ways, especially in designing and drawing patterns, but they are not easy to obtain these days and their prices are prohibitive.

Water colours. If the pupils can easily afford them, moist colours in tubes, or the usual types of cakes of colour from paint boxes are the best forms of water-colour for painting. But many children in Indian schools can scarcely afford these. The best substitutes which we have been able to procure under the circumstances are the bazar dyes which are very cheap and easy to buy. They can be had in a large variety of colours in powder form; they must be mixed with water and boiled before use. Small empty jars from toilet creams may be used to store them and they can be labelled. Natural vegetable dyes can also be experimented with.

Brushes. It is very necessary to have good quality brushes for water painting in advanced classes, but again the problem of prices and availability comes in the way. For the kindergarten and lower classes the paint-rag is a cheap and useful tool for laying on water colour. A small bit of cotton wool is folded in a very soft piece of rag, is held by the fingers, dipped in the colour and is then spread rapidly on the paper. It can be used for making large diagrams and maps, etc., by senior pupils as well as by the teachers. Another substitute which we have found useful is a moon; brush, made by the pupils themselves; these are very cheap but cannot be used to give finer effects or shading.

Fig. Brushes

Crayons Coloured crayons may be used freely in the infant and junior classes. They should be soft and in a large variety of colours. Coloured chalks are often very useful; they are also much cheaper and can be obtained easily from stationers. Children like to use ordinary white chalk on dark grey or brown paper, and some attempt at drawing with charcoal on white or light-coloured paper may prove very effective.

Clay. The clay used by potters for making earthenware's is good for school use. If this is not handy and there is clayey soil in the school compound or hereabouts, the pupils can dig some of it, spread it on a 'flat surface', bear it to get the stones out, and then knead it into the right consistency to

make convenient lumps. This may be kept in a metal box, or an earthen jar for use in making models of fruits, houses, maps, etc., whenever necessary.

Free Expression

The child's attempts at artistic expression in the early stages are generally described under the heading of "free expression" work; this is because he has at this time, no consciousness of technique, his sense of sight and power of observation not being fully developed; yet he sees things differently from adults, hence his efforts are devoid of much meaning for the grown-up. He is very anxious to experiment with and manipulate materials, and express his ideas about his environment in his own way, but his experience and knowledge are very limited.

Free expression is a valuable instrument in the all-round education of the child; the child expresses his thoughts and feelings which he cannot put into words, in this way. He should be encouraged in this direction, for the maxim "no impression without expression" holds good in teaching children any subject. Here it is necessary to remember that children see the objects of their surrounding quite differently from adults, because in the case of the latter they are helped by wider experience and ideas of the shape. The child is more imaginative and his attempts are full of obvious discrepancies and what apparently seem to us absurd notions. If we relate a story to him about children of other countries and ask him to illustrate it, he will produce the figures and objects of his own home and surroundings. An examination of the early free expression work of children reveals that it is more an explanation of things that they have seen. The sky is put right at the top, the people down below, and the subjects of the story placed together somewhere in the middle. As they grow older, the subjects become larger and bolder, and the paper is filled in a conventional manner like the pictures the children may have seen around them. There is much more in children's drawing than mere surface colouring. There is much of thought and effort, a great deal of creative effort, and romance. The little child draws for pleasure, and this actually enables him to express himself far better than he can do in speech.

In expression work, we find that children always like to draw the outlines of their figures first, and then fill in the space with colour. The very small child could think in terms of a series of units all of which are connected with the story of his picture. Each shape signifies an outline to him. The child should be allowed to draw the outline of his picture freely as he likes and then he may fill in the outline with colours of his own selection. In doing this he is not merely space filling, he is creating, and while he is creating, he is educating himself, and unconsciously developing the power of self-criticism.

In free expression work, we do not want the child to illustrate stories only, he should be allowed to draw, to paint or model whatever he likes according to his own choice. He should be encouraged to make his own selection of subject as well as material for expression work. Children of seven years of age like to illustrate subjects such as a train, a ship, an aeroplane, the zoo and others. Children from five to six have been found to illustrate scenes of the classroom, playground, bazar, etc. Often, the results of their efforts are queer and fantastic to the adult eye, but it is the sincere expression of their own ideas, it is full of life and vigour, and our aim is not to create fine draughtsmen or perfect artists, but to help and encourage the child to express himself freely on all occasions; and to give him the joy of accomplishment.

Representational Drawing

Many teachers believe that lesson in technique should be given to the pupil when he finds that he cannot represent the shape of an object or express an idea in the way that he would like to. At this stage we should encourage him to observe and study the shape of that object in its basic form and attempt to draw it from different angles. The essential points only, and not its details, should be put down. It would be better still if the pupil is allowed to touch and handle the object in order to gain fuller knowledge of its shape.

Representational drawing is a means of acquiring not only technique; it also helps in encouraging the child to appreciate form, colour, texture and design. The teacher's choice of objects helps in this appreciation and she can also make them discuss and compare their shapes with those of other objects in their environment. Here she should be careful to select for their consideration only those forms, colours and designs which have beauty and symmetry in them so that ugly and ill-formed shapes should not leave their image in minds. This training is valuable if it enables the pupils to decide upon what is good and what is not, from the artistic point of view. For this it is necessary to organise a series of observations so vividly that the children can remember them, and the laws underlying their shape and structure. The correlation of art with hand-work is a great help in this matter, we can use as objects for the drawing lesson the things made by the children, and if the same teacher teaches both the subjects, there will be no difficulty in grading them. As soon as the pupils are able to draw an object in several positions, they should be made to represent in simple groups and compositions.

Nature-drawing. Children are far more interested in diving and growing things than they are in lifeless objects. They love to draw flowers, leaves, trees, plants, animals and birds, but here the teacher must help the pupils to note carefully their form, and characteristic growth which fits them for the field, garden or park where children can observe nature at first hand.

Figure-drawing. Little children like to represent men and women in their drawing, and it is well if the teacher helps them in this direction. In the early stages stick men are useful, as they give the idea of action. They may be drawn in many different positions to illustrate a story or an incident.

Figure-drawing of human beings and of animals is a very difficult branch of art which requires much study and practice, and even after years of effort very few artists attain the desired proficiency. But we are not expected to teach the art of figure-drawing as such in schools. Our aim is to encourage children to express their ideas freely, and to introduce the human element in their pictures. If the pupils can put spirit and feeling in their composition, it does not matter if the figures are not altogether correctly represented.

In order to appreciate figure-drawing by children we must abandon, as Hellier advises us, all thoughts of what is correct and consider the matter as a psychological study in child development and the self-expression of primitive minds. As such the art teacher should not try to correct these drawings of figures according to adult standards all the time.

Memory-Drawing

There are many considerations which recommend drawing from memory. One of the foremost of these is its value in training the visual memory, so that it is possible to see a thing which is not present, and this in its turn aids and strengthens creative powers of the child. Another advantage is that when drawing is the result of a mental image, its parts have a unity of form which often is lacking when a drawing is made part by part with the object placed in front. Continual practice in object drawing dulls creative efforts, and the freedom and zest for self-expression often die out. Hence memory-drawing is a valuable form of exercise at all stages. Practically all the things which have been suggested (on a subsequent page) for the equipment of the art room may be used as suitable subjects for exercises in memory-drawing. The object may be simple or difficult according to the age of the pupils. The younger pupils may draw leaves and flowers of simple shape, the seniors may draw shells, tools, utensils and sprays of foliage. Animals and birds offer scope for memory-drawing.

Exercises in memory-drawing and painting which are given to provide practice in technique and close observation, such as the drawing of tools, objects, buildings and plants, whether drawn singly or in groups, should be interspersed with other exercises to give training to the creative imagination and powers of expression of the child as well. Here, it is a good plan to the pupils to suggest subjects, or tonics may suggest themselves to pupils when the teacher reads out a story or poem, or narrates a tale to them. On the whole it is better to keep within the domain of the child's possible experiences. When

historical subjects are illustrated, efforts should be made to show pictures and scenes first, so that, the pupil may have some ideas from which he can reconstruct his illustrations. Magic lanterns and movie pictures are very useful aids towards this end, for they can help in training the memory and also the inventive powers of the child.

Designing

A glance at the drawings of young children reveals that they have an instinctive love of rhythmic pattern and design, but the conscious recognition of design comes much, later than story illustration and other types of expression work.

The designing of patterns is an exercise which provides training to the imagination and inventive faculty of the child, but if the teacher does not provide the right type of stimuli and proper guidance it may degenerate into stereotyped conventional designing which has no educational value. It is therefore necessary that the pupil be constantly encouraged to make use of the beautiful objects of nature which he finds in his environment for the basis of his designs. Good design is the result of practical work and not of abstract thinking and the principles of design are based on practical experiments. We cannot think of design apart from the thing designed.

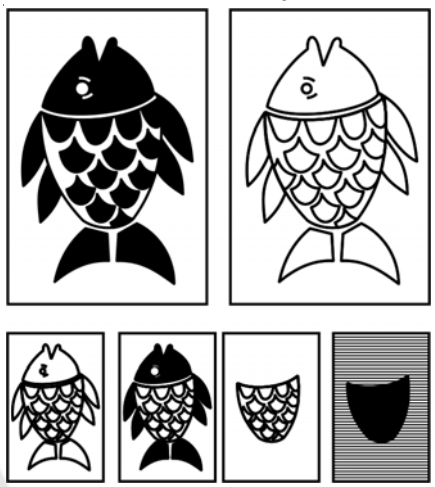

Fig. stenciling

Design cannot exist without handwork, and handwork improperly designed is ugly. Making and designing should always go together, and the main principle in designing should be fitness to purpose. A picture frame whose design attracts more attention than the picture does not fulfil its purpose, however beautiful it may look in itself. In many school crafts we notice the tendency to cover every square inch of available place with crowded ornamentation which completely hides the object ornamented. Loud, gaudy colours and showy patterns ruin a beautiful surface.

Pattern designing gives children great pleasure and should be encouraged from a very early stage. Sticks or pieces of rubber cut into different geometric shapes give many decorative possibilities. Patterns can be printed with these on the white paper with colours mixed with a little gum. Very good pattern printing can also be done with cotton reels, by cutting the wooden edges to make flowers and other circular designs.

Stencilling is a simple method of making patterns, and can be used for many decorative purposes on a wide range. In a stencil those parts which are cut away show in the print: it is a series of hopes with paper in between. For stencilling we require stencil paper, stencilling brushes, paint, and a sharp knife. The brush is made of very stiff hair which has to be held upright, dabbed in paint and rubbed lightly on the cut-out space on the stencil. The paint must be rather dry and stiff. Oil paint is useful for stencilling on wood and cloth. The pupils must be encouraged to make their own original designs instead of merely copying. Stencilling can be made for ornamentation of curtains, sari borders, table cloths, etc. It can also be used for lettering in the making of charts and pictures.

Lino-Cut. The pictorial imagination needed for lino, work is of a much higher order than that needed for ordinary pattern making and this art is more suitable for senior pupils whose artistic ability is slightly above the average. In order to make a lino-cut, we must first fix a piece of thick cork lino to a block of wood, and on it draws or traces a design. A sharp knife, a chisel and water colours, oil paints or printing colours are all that are needed. But cutting out the design on the lino often presents many difficulties which can only be overcome with practice and experience.

Lettering

Training in the accomplishment and appreciation of good lettering is very desirable as a part of the course in art, and it is one of the most useful of crafts that can be taught. It has many uses and very little apparatus is needed. Letters of good proportion and fine form are difficult to make, but discipline and practice can make their execution possible. Different kinds of pens are necessary—pens of quill reed and steel, cut square or slanting. Chisels are used for writing on wood, plaster or very hard surfaces. The teacher must know how to cut pens for various purposes. Hindi and Urdu lettering with Indian ink can be done in many different styles, and although it is difficult to achieve the fineness of the Persian script which is the hereditary art of many professional writers, the teacher should try to make the pupil practise such lettering for decorative purposes.

Colour

In many schools lessons on colour commence with the making of colour charts, and a study of the theories on which they are arranged. This method kills the child's natural delight in colour. The aim of lessons in colour should be to make him enjoy the beauty of colour and to increase his appreciation of tender hues, light and shade, and enable him to use these with skill which will produce lovely effects. Theories and principles of colour should never come first, they should arise as a result of enjoyment and experiments by the pupils themselves; technical lessons may be given when the need for them arises. A love of beautiful colour and taste can be developed by allowing the pupil to see and experience a large range of examples.

In the study of colour, interest and beauty should be the first considerations, and here the teacher may develop her lessons according to the following principles: the effects of contrast—by placing light colours against darker ones, and dark colours against light ground and the effects of light and dark lines. Colour harmony and contrast must also be observed and studied from suitable examples taken from nature and the child's environment.

The following types of exercises in colour are suggested in the order in which they may be set, but they must be related to subjects which are of interest to the child. They deal with changes and qualities of colour in the order in which children generally discover them. The teacher should all the while bear in mind that the value of these formal exercises lies in developing keener powers of observation, and a wider appreciation of beauty in art and nature.

Fig. Colour

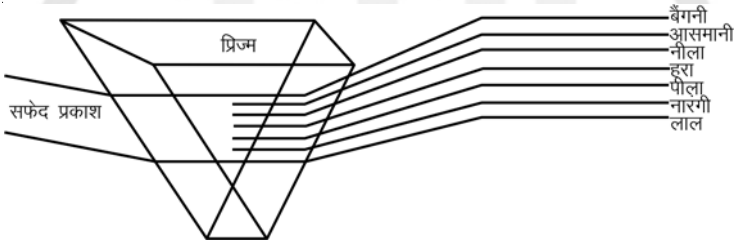

Fig. Prism

(i) *Laying of colour washes.* It is more difficult to lay on even colour wash with dark colour than with a light one. Practice in laying washes comes from experimenting with the colours in a box. At first the shapes to be coloured be small and simple in form, and must be washed with the brush dipped in plain water first, and then the colour may be laid on it with the same brush while the surface is still damp.

(ii) *Experiment with colours.* To know the colours and how they change each other may be found out by means of exercises in laying washes of colour in wide strips which cross

each other. Many simple patterns can be made with bands of varying widths and at different strengths.

(iii) *Exercises to show range of colour.* Every colour has a wide range from pale to dark. In a series or opposite of spaces a pale flat shade is put at one end and the darkest shade of the same is put in the last space, the intermediate shades are then filled in order.

(iv) *Different shades of the same colour.* One colour may be taken, and its many variations shown by collecting as many objects as possible of that colour, e.g., if the colour selected is blue, then the objects will be put in a series ranging from grey blues to greenish blues.

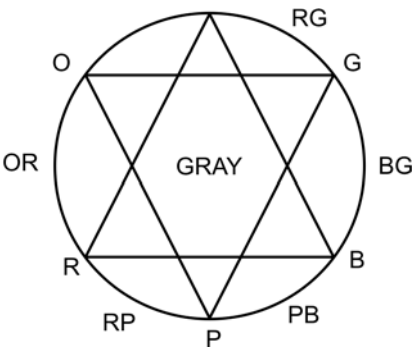

Fig. Supplements/Colour or opposite

Art Appreciation

Aesthetic appreciation is one of the more difficult subjects that have to be undertaken by the teacher, for art and beauty cannot be appreciated through direct teaching. Love of beauty is largely instinctive in children, and it can be made to grow and develop given that proper environment and correct guidance. But this education must begin from a very early age for it is through the sense of sight that the love for beauty is stimulated and not through reason and intellect. The teacher's own enjoyment of beautiful things is helpful in arousing the enthusiasm of the children. Besides, the pupils' taste should grow and develop through the exercise of personal choice for which opportunity must be provided continually. The pupils must be given chances of electing from two or more beautiful things in order to decide which of them the best is and why they like it. For this purpose, art room must be properly equipped; the materials in it must range from pretty stones, shells and feathers to reproductions of master-pieces.

Art appreciation should not aim at standardizing the tastes of the pupils, but should help each one to develop his own. The teacher should encourage him to make the most of his inherent powers.

The Art Room

Attempts should be made to provide a separate art room in every school. This room should be well lighted from one side, the window-sills being at least four feet from the floor, so that shadows from the hand while drawing a painting may be reduced. The windows should ordinarily reach the ceiling to provide sufficient light. Cup-boards may be placed along the wall, and opposite the windows for keeping apparatus, models and pupils' work. The entrance to this room should be from this side so that the pupils may take their work from here when entering the room, or leave it after the lesson is over. The top of cup-boards can be used for displaying a few beautiful objects, and on the wall above them some pictures may be hung. In a corner of the room, so as to be easily accessible, there should be a water tap and sink, with shelves above for placing water pots. A chair and some type of easel must be provided for each pupil. The simplest and cheapest easel is a large wooden stool, against which the pupil leans a drawing board while it rests on his knees.

Art has a much wider-connotation these days; hence the art room must have an adequate space and equipment for a wide variety of experiences. Preferably, it should be on the ground or first floor so that supplies may be brought in easily arid the classes may go outdoors to .sketch, paint and model with a minimum of disturbance to other groups. It .should have enough wall space to be used for display purposes, Lighting should be planned so as to reduce shadow and to display art objects. Locked storage space should be provided for valuable materials and supplies.

The Art Teacher and His Functions

In new an teaching, the teacher has to play a significant part. "He is not supposed to pour instruction into docile recipients, His work must be creative." He should provide the right atmosphere

to inspire the child to do creative work. He should teach his pupils the minimum of technique needed to express himself with different materials. He should confine himself too little and timely instruction and much less correction. The teacher's own style or preference should not be imposed on pupils. A teacher who has worked in many media should be able to indicate the possibilities and limitations of each. "Where it is essential, the teacher should offer a variety of techniques that assist in creative expression." Techniques, however, are not an end in themselves; they are simply a means in the creative process." Prof. K. G. Saiyidain has summed up beautifully the function of the art teacher as follows: The function of the true art teacher is initially to stimulate, guide-and direct, and-at a later stage, to each techniques whereby satisfying results can be obtained. As in the case of writing, so in the case of art,' watering pot 1 is much more important in the early stages of, art education than the 'pruning hook'. The main business of the teacher should be to release the child's creative impulses through the provision of a congenial environment and stimulating materials. An art teacher cannot, as a rule, confer upon children a sense of colour, but he can often cultivate in them a sense of form and of" balance. He can gradually improve the sense and technique of craftsmanship and, where the child's interest is naturalistic, he can teach perspective and accuracy of reproduction."

Developing A Programme of Art Education for Higher Secondary Classes

In the higher secondary school classes most pupils undergo rapid physical and psychological changes. They develop new drives and interests. The programme of art education should be so planned as to meet their special needs. This programme will have the following aims—

(i) To develop an awareness of beauty and an appreciation of art in daily living,
(ii) To develop opportunities for creative expression of which all are capable,
(iii) To seek out and encourage the gifted pupil,
(iv) To introduce pupils to the many fields of art.
(v) To create recognition of the relationship of art to other school activities and its place in the total school programme.
(vi) To help improve the appearance of the school plant.
(vii) To develop good work habits.
(viii) To develop individual initiative and to encourage self-reliance.
(ix) To acquaint pupils with the latest trends in art. Emphasis in general should be on increasing the power to see, to feel and to appreciate as well as on growth in skills. The programme should provide opportunities for working in a variety of media. Individual differences and interests should be reckoned with for the satisfaction of the creative urge and the development of skills on "a more mature level. The cultural and practical aspects of art should not be lost sight of. Let the teacher create a classroom climate where art talent can flourish and where opportunities abound for developing Imagination and for expressing ideas in an infinite number of ways. Let him (the teacher) deflect sparks of originality, evidence of good visual perception, effective expression of the pupils, feelings and an unusual grasp of significant concepts. The talented pupils should have opportunities of meeting professional artists and observe them at work in the studies and of becoming familiar with as many aspects of art world as possible.

The art programme should include the use of various audiovisual aids such as film on art, of visits to various museums, exhibitions, art studios and libraries as well as to areas which provide examples of historic and modern architecture.

The modern art programme should aim at integration. Pupils should be encouraged to apply their knowledge of art to activities in the school society. Pupils could design and build stage sets, design costumes for play", illustrate class magazines, decorate halls for dramatics and daaes, and could help in carrying out projects in other subjects from the point of view of art and aesthetics.

The modern art programme may have three main sections—

(A) General art including a survey of principles of colour and design, application of design principles of various crafts, provision for creative expression., study of relation of design principles to daily living and general survey of vocational opportunities in art.

(B) Basic art including fundamentals of design and drawing, development of skills and facility in various media, two and three dimensional designs, creative expression and appreciation of arts.

(C) Creative crafts including fundamentals of design applied to various materials, development of skills in metal, wood, leather, weaving and ceramics and appreciation of various crafts and materials. These have been discussed in greater detail in the following sections.

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Chapter 2

HANDWORK AND CRAFTS

The term "handwork" is generally used to denote the use of the hand in making things of many different kinds. In schools, handwork is the subject which enables the child to perform many practical activities and to make the things he wants. But handwork is not merely "doing things", it involves mental effort, and requires the use of the constructive imagination, thinking and reasoning to the type of work undertaken.

Its Purpose and Aim

The aim of all exercises in handwork is to train the observation power, to teach the child to see accurately, to make him realise the value of accuracy and to develop his power of invention. Handwork has certain disciplinary values also; it cultivates habits of neatness and attention to detail—such qualities as are very valuable in later life. Besides this, practical work is very useful for children who have not much inclination for the study of books, and it arouses the less intelligent pupils to greater effort and interest in their school work. It also provides a healthy and pleasant change of occupation for all types of pupils when interspersed with theoretical studies. Handwork should also be taught and encouraged as a leisure time pursuit; many crafts learnt at school can be continued as hobbies in later life.

Relation to Art

Handwork is very closely related to art, and it provides many chances for children to exhibit in a concrete manner the artistic impressions which they gain from lessons in art. Especially in drawing, painting and designing. Handwork and a when properly correlated develop in pupils the recognition and appreciation of beautiful form, colour and workmanship; they learn to see beauty in simple objects which are well formed and proportioned, and require no additional adornment.

Methods of Teaching

In the choice of method, the teacher will be guided by the aims of teaching handwork. But apart from these, teacher's own interests and special qualifications, the accommodation, and equipment of the school, the nearness to art schools, museums and galleries, and most important of all, varying abilities and interests of the pupils will be the most important considerations. A rigid and formal scheme of work should not be adopted, for a good deal of failure in handwork was due to this in the past. The "telling" method was the most common, the teacher simply showed the pupils how to do or make a certain thing, without explaining why or giving the pupils any scope for original thought or the exercise of their imagination and they merely copied the teacher's model.

In the early stages of handwork, the teacher can give some definite rules and guidance in technique, but after that the child must himself experiment and find out the best methods to be followed. Some pupils will be quicker than others and those who get on well can help themselves as well as others, and the teacher also learns new ways of doing things.

Size of Classes

In the average Indian school, the paucity of trained and able teachers of handwork generally leads to the problem of a single teacher for the subject, who has to handle very large classes, often 40-50 pupils at a time, during single period of 30-40 minutes. The only solution possible is to divide the

class into small groups. When a new piece of work is to be undertaken, six of the best pupils in the class may be taught the fundamental involved in the initial steps of making the first article, the rest of the class may be engaged in different individual occupations which do not require much guidance or supervision. When these six pupils have mastered the first steps, each of them may teach another child how to make that article. In this way the groups may go on helping each other, and the teacher can give each group help according to their needs.

Materials for Crafts

It has often been remarked by parents and teachers of the old type that handwork require the use of materials which are costly, in actual practice, however, a little intelligence and foresight on the part of the teacher can make it possible to 'carry on lessons in handwork with scarcely any cost of materials. The pupils can be encouraged to satisfy their acquisitive instinct by collecting waste materials for handwork. A box for collecting such materials may be placed in a corner of the room. Bits of coloured papers, old newspapers, empty paper and card-board boxes from soaps, bulbs, etc., silver and tinsel paper, labels of different colours, fused bulbs, glass bottles, broken china are, metal wires, ail have their uses and can be employed for a variety of purposes. Beautiful and at the same time useful articles can also be made from wheat stalks, cane, reeds, twigs, raw cotton and similar materials easily obtainable in rural areas. Ideas for making use of these in an effective artistic manner may be adapted from some of the indigenous crafts in our villages. The revival of ancient Indian arts and crafts some of which are most unique, is a task which should be taken up by every enthusiastic handwork teacher, and the materials for such crafts are easily available, from local sources.

Equipment

Many teachers are of opinion that handwork requires expensive equipment; this is not at all necessary. We find that most forms of handwork require very little equipment, and these articles which are essential are either easily adapted from materials at hand, or can be made at very little cost, *e.g.*, basket making requires nothing beyond a knife or a pair of scissors for cutting the cane or wheat stalks. Book-binding again requires an ordinary knife, set-squares, scissors, ruler, and a press for cutting the books. For weaving small scarf, towels, niwar, etc. the looms can be made out of boxes or easels, while larger and stronger frames for durri weaving can be made by pupils taking up carpentry. Much of the other equipment required can be made by the older pupils who learn wood-work and metalwork.

The Craft Room

Although a separate room for handwork is not necessary for the primary classes, there should be a separate craft room for the middle and high classes in every school. This should be large, airy and well-ventilated, the accommodation being sufficient for at least 40 pupils. The desks should be placed in such a way as to have their ends facing the windows, a central passage and another passage is necessary at each side of the room. There are certain fittings which are very necessary in this room.

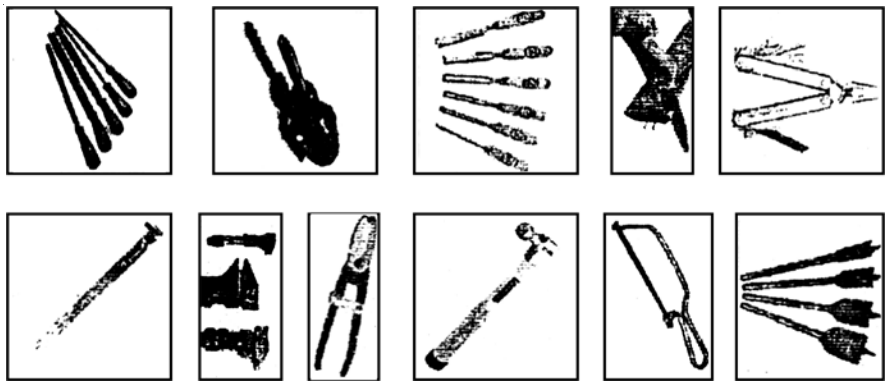

Fig. Equipment & Tools

Water. A water-tap or water tub must be provided for pupils to wash their hands before or after taking up a piece of work.

Desks. These should be very strongly made, and if possible should be fitted with drawers, so that the pupils may place their unfinished work in them.

Tool-racks are essential, so that the pupils may keep their tools safely after use, and be able to get at them easily. Much confusion and waste of time are thus avoided.

Cup-boards. Several large-sized cup-boards are necessary. Some of them should have glass panes so that specimens of completed work may be exhibited.

First-aid Outfit. A simple first-aid outfit should be placed in every craft-room. It should contain cotton-wool, small bandages, tincture iodine, ethylated spirit a bottle of carbolic oil, so that in case of accident, it may be possible to render first-aid immediately.

In most of the high schools in Great Britain, there is separate well-equipped room for manual training and handwork. Wherever it was not possible to provide this, separate buildings were erected for "centres" where instruction in the hand working was to be imparted. These centres are properly equipped for teaching pupils who came from neighbouring schools to attend classes by turns and four to six hundred boys receive instruction every week.

The Choice of Crafts

There are a few general principles which should govern the choice of the subjects to be included in the handwork course. A subject must be educative and should specially stimulate independent effort and inventive power. It should be attractive to the children, and afford a welcome relief from other studies, the operations involved at all stages being such that the pupils are able to reach a good standard of craftsmanship. The crafts selected should in no case necessitate the use of expensive materials.

Handwork and Crafts in the Primary School

Handwork occupies a very important place in the education of the young child. In the primary stage it should not be treated as an isolated subject but should arise out of the other subjects taught in the class-room. Projects and "centres of interest" provide a valuable means of achieving this end. The children should be given full opportunities to gain experience in handling ordinary materials and to know what can be done with them. They should be given freedom to manipulate in a number of media. The child at the kindergarten stage attempts to experience in handling materials and in acquiring simple techniques. He does not need formal directions, and should be allowed to experiment with toys and models of his own invention instead of being made to copy the teacher's designs.

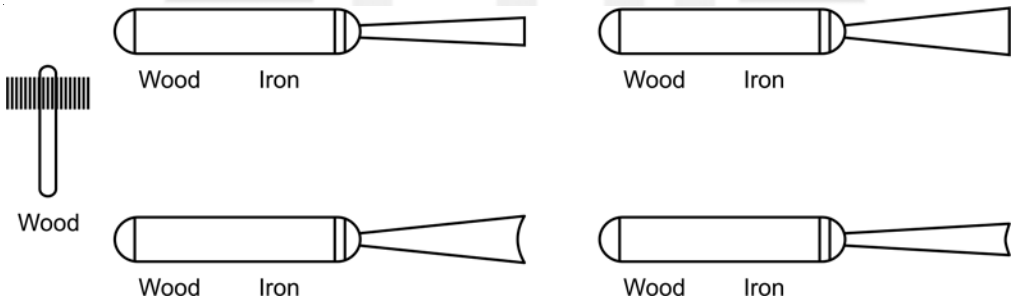

Fig. Tools

The forms of handwork that can best be practised in the primary school will comprise paper and card-board work, raff in work, basket-making, weaving and clay-modelling.

(a) Paper folding, cutting and mounting. These have been for many years one of the recognised branches of infant handwork. Some time ago. They were used merely as an exercise for teaching

children to acquire manual skill and muscular control. But today teachers in the modern primary school realise that, although the training and the development of hands and muscles is important, it is still more necessary to cultivate in the child a receptive and intelligent mind.

The first stage consists of imitation of the patterns. Unless the pattern is large, the teacher should draw the design on the blackboard with coloured chalk so that the pupils can easily see what they are to do. Another board should be near so that the teacher can build up step the work that has to be done under his direction. This demonstration must be made slowly and very effectively. The materials supplied to the children will be coloured paper, a pair of scissors or a knife, sheets of ordinary paper and paste. In the second stage, more originality should be cultivated, the pupils should adapt and make their own patterns, keeping a clear distinction between the "repetition" and the "alternate" pattern and thus developing ability in invention and designing.

(b) Clay modelling. The materials needed are clay, real objects, a board or a slate. The object to be modelled should be shown to the children, and examined and discussed by them. The teacher can then demonstrate how the form is to be modelled, how much clay to take, how to handle it and how to proceed step by step. Later on, more difficult models may be attempted such as a sphere, an apple, a banana, etc. The aim will be to help the pupils to establish in their mind a connection between geometrical shapes and common objects of nature of art.

Toy-making. This can form a most valuable portion of the handwork scheme in the primary school, for toys is a source of real pleasure to children. The toys can be made of soft materials such as cloth stuffed with cotton-wool, saw-dust and fibre. Other toys can be made of paper and card-board, stained and painted.

Handwork and Crafts in the Middle High Schools

Handwork and crafts will form an important part of the curriculum in middle and high classes. The skill in the use of materials which the pupils have acquired in the primary classes can now be applied systematically to crafts such as basket-making, weaving, book-binding, needle-work, etc. The practical as well as the cultural values will be kept in mind while teaching these and attempts will be made, at all times to correlate art and crafts work. Good proportion, sound construction, and beautiful finish should be kept in mind in the making of any article. The value of good workmanship will be appreciated by boys and girls at this stage if they are taught correct), their standards of judgment will improve by the study of work done be their teacher and other class-fellows.

Weaving. This is one of the oldest crafts, and has only recently been reviewed as a form of handwork in our schools. It can be introduced in an elementary form in the primary classes; Handloom weaving provides large scope for patterns in colour and a variety of textures. Niwar and durrie weaving have many educational and practical values. The pupils may also weave scarfs, towels, belts and bags. Spinning may also be practised at the same time. The pupils can learn the use of the "takli" and "charkha", spin yarn from cotton and wool while experiments in dying these from natural dyes can also be made. They should be encouraged to make use of local resources and thus to revive some crafts which may, otherwise, die out.

Needlework. Needlework is not a very suitable form of activity at the kindergarten stage, because it involves much effort of the hands and eyes, and is opt to strain both. But it has many educational possibilities when taught properly in the middle and high classes, because of its constructive and decorative qualities. The teacher must exercise careful thought in order to plan such a method of approach to the subject as will arouse the pupil's interest in it. Needlework is often the dullest and most unpopular subject in our schools because it is generally taught by an untrained or an un-enthusiastic teacher who limits her teaching to calculations, measurements and proficiency in stitchery, and takes no account

whatsoever of the immense possibilities for design in colour and shape. In addition to making garments, embroidery is also an object of practical and artistic value. This should not consist of merely lying different kinds of stitches on cloth, but should offer scope for invention in artistic design and colour. Needlework at the high stage should aim at giving the pupils the ability to make garments and household necessities in a correct and skilful manner,

In the high or higher secondary school classes, if facilities are made available, many creative crafts could be introduced, allowing the use of a variety of media such as leather, metal, cloth, wood, clay. In American school systems creative crafts encouraged are mainly of four types: (i) Structuring, (ii) Sculpture, (iii) Graphics, and (iv) Finishing.

The term "structuring" means the art of arranging, building and forming various materials so as to create an organised and integrated design; The process, according to **Dr. Gordon E. Van Hooft**, involves the application of skills in fabricating and blending materials in such a way as to produce purely artistic results or well designed objects which serve utilitarian needs. Structuring will cover peppier machine, leather craft, metal work, working with wire, working with plastics, mosaics, making stage sets, costume designing, room decoration, furniture designing, weaving, embroidery, etc.

Sculpturing is the art of arranging and altering plastic or rigid materials. This may be achieved by means of carving, moulding, pouring and other procedures. Sculpturing includes carving, working with clay, sand casting, making of paper materials, mobiles, stabiles or making puppets of all types.

Graphics include the expressions of art produced by printing from various screens, stencils, types or plates such as etching, dry point lithography, block-printing, silk screening and photography.

Finishing is another creative craft. It is the process of preparing and treating surfaces of materials so as to enhance the inherent characteristics. As such, the visual and tactile as well as the utilitarian-qualities of objects 'finished' are improved. Finishing may include enamelling on a metal, glazing, wood finishing, decorative painting on the walls or other places.

The Correlation of Art and Handwork with Other School Subjects

It is not necessary to allot any special time to illustrate handwork, because in most modern schools nearly all subjects are taught by practical methods. Handwork has become a method of approach, and is used as a teaching method; in fact, it has become the "handmaid" of teaching subjects.

Gardening. Gardening and handwork form one of the oldest combinations of subjects. Some of the gardening tools and accessories may be made by boys in the woodwork and meta! work classes—spades, seed drill, number-boards, plant-labels.

Geography. This subject offers wide scope for correlation with handwork. Models of the relief of countries, mountains, canals, means of transport, wind-vane, sun-dial, etc., are only some of the objects which can be taken up and can be made as "application" work following a lesson given on the same topic.

History. Scenes depicting chief events in history may be made in colour, wood, clay or peppier machine. Tools and weapons of different periods can be modelled.

Dramatisation. This is one of the best ways of emphasizing the teaching of history and literature. Dresses and stage equipment can be made, and thus different forms of handwork involving the use of a wide range of materials is possible. The making and painting of stage scenery give opportunities that are valuable in developing initiative and inventiveness.

Mathematics. Calculation and mathematical knowledge become very necessary in the more advanced stages of crafts such as woodwork, metal-work and book-binding where accuracy in measuring lengths and surfaces is involved. The correlation of mathematics with Art becomes a necessity in drawing and designing, when straight lines, rectangles, squares, triangles and circles form the bases of new and beautiful patterns,

Socially Useful Productive Work (SUPW) Meaning Of SUPW

For harmonious development of the child personality, it is necessary to expose him to scholastic areas for intellectual development as well as to put him in situations where he may get opportunities to work with his hands and develop proper attitudes towards manual labour. In addition, there is an urgent need to bridge the gap between the world of school and the world of work. If not controlled this gap will widen further due to the modern technological developments and the increasingly technology-based society of the future. Processes and skills of work are changing. An early initiation of children into these is possible only through work experience of socially useful productive work (SUPW). Hence, the Education Commission (1964-66) made a strong case for introducing work experience as an essential component of general education at all stages of social education. The work experience or SUPW approach should permeate the entire curriculum.

Scope of SUPW

As the basis for the development of knowledge, skills and attitudes are useful for later participation in productive work. SUPW covers production, maintenance and the technological process as well as human relations, organization and management and marketing. The areas of work chosen should have local significance and should be such as to develop the competence of the students. It is not just learning to work, it is work education.

Historical Review

1. Ancient India—The concept of manual work as a tool of education was recognised long before the advent of formal education. In ancient India when the students used 10 live in their schools (ashrams) with their teacher (gurus), they had to do every kind of manual work for living and learning. Education was related to the life of students. The dichotomy between education and work was not existing.

2. British Period—When formal education was introduced in the country, education became bookish. It started preparing students for white collar jobs. There were no provisions of manual work in formal education. This limitation was pointed out in Woods Education Despatch (1854) which contemplated the introduction of pre-vocational education at the secondary stage. But practically, no action was taken in this direction. **Wood** and **Abbott** (1937) also stressed the need of manual work in education for the sake of harmonious development of child's personality.

3. Pre-Independence India—Deploring the ineffectiveness of bookish education. Rabindranath Tagore also stressed the role of manual work in education for all-round development of the child. Mahatma Gandhi insisted for the first time that education should centre around manual and productive work. This proposal was accepted at the Wardha National Education Conference in October 1937. It was given a practical shape by the Zakir Hussian Committee. Basic Education was accepted as the national pattern of education at the primary level in 1938.

4. After Independence

(i) 1966 Kothari Commission—It suggested that Work Experience should form an integral part of general education (Class I to X). The Commission also clarified that the concept of work-experience was essentially similar to the Mahatma Gandhi's philosophy of Basic Education. It might be described as a redefinition of his thinking in terms of the changes in society due to the development of industrialization. Consequently , great emphasis was given to work experience in the new 10+2 pattern of education.

(ii) Ishwarbhai Patel Committee (June 1977)—It pointed out that work-experience which was intended to be an integar feature of the curriculum, at all stage, did not find a proper place in teaching learning process that followed the introduction of the new pattern. 'This Committee recommended and scheme having three components—humanities, science and work (Socially

Useful Productive Work and Community Services), together with aesthetic appreciation to illuminate the curriculum.

(iii) Adiseshiah Committee—It accepted the concept and objectives of Socially Useful Productive Work (SUPW) as defined by Ishwarbhai Patel Committee, for plus two stage with minor modification.

(iv) The National Education Conference (December 18 to 20, 1977)—Held in New Delhi, under the chairmanship of Shri Sriman Narain, it recommended that 50 per cent of the total school time ought to be devoted to productive, creative and recreational activities, at least half of which should be focussed on SUPW of various kinds. It also urged, as did Patel Committee, that the existing burden on student of textbooks, due to a large number of compulsory subjects, should be reduced proportionately.

Objectives of SUPW

(1) To prepare students to practice and perform manual work individually and collectively.
(2) To acquaint students with the world of work and services to the community and develop in them a sense of respect for manual workers.
(3) To develop a desire to be useful members of society and contribute their best to the common good.
(4) To indicate positive attitudes of team work and socially desirable values like self-reliance, dignity of labour, tolerance, cooperation, sympathy and helpfulness.
(5) To help in understanding the principles involved in the various forms of work.
(6) To lead children to participate increasingly in productive work as they go from one stage of education to another and, thereby, enable them to earn while they learn,
(7) To provide opportunities of creative self-expression and for the development of problem solving abilities.
(8) To provide for the development of vocational preparedness.
(9) To develop in the students as awareness of social problems and inculcate in them positive attitudes towards community service.

SUPW Syllabus

The SUPW syllabus should be flexible. It should depend upon the local needs and facilities available. It should have three components—

(1) Study of the world of work through observation and enquiry.
(2) Experimentation with material, tools and techniques.
(3) Work practice.

The first two components concerned with preparation for actual participation in productive work and service, make the common core programme of SUPW. The third component, "work practice" may lead to remuneration or earning. The purpose of the common core programme will be to bring about attitudinal changes and to develop readiness for work practice.

The purpose of work practice is to give a vocational basis to the programme.

Areas of SUPW Syllabus

(1) Health and Hygiene.
(2) Food.
(3) Shelter.
(4) Clothing.
(5) Culture and Recreation.
(6) Community Work and Social Service.

Middle Level (VI-VIII)

(A) Common Care Programme

1. Health and Hygiene—Dusting of furniture, cleaning of classrooms and science laboratories, school buildings, the school compound and its vicinity.

2. Food—Vegetable gardening or pot culture, cooking of meals.

3. Shelter—Construction with plastic, pliable and rigid material, maintenance of articles of use.

4. Clothing- Spinning and simple hand weaving or knitting, clothes, stitching, mending.

5. Culture and Recreation—Recreating the classroom, preparation for important national days, festivals and school function.

6. Community Work and Social Service—Cleaning the neighbourhood, planting and care of shade trees, running of cooperative stores, the school panchayat, helping adults in productive work.

(B) Work Practice

Projects may be selected according to the need and interest of students and availability of time in each class from the following list—

1. Health and Hygiene—Making of tooth powder, soap, disinfectants, detergent powder, hair oil, brooms, waste paper baskets, dust bins, first-aid boxes, health posters, scrap books on health and hygiene, keeping health records, keeping the neighbourhood clean, working at health centres.

2. Food—Growing of selected vegetables and flowers, plants in plots of pots—where possible, also for sale; seed collecting, soil testing, experimentation with different kinds of soils, different types of seeds, different kinds of manures; vegetative propagating, by grafting of propagation by breeding, vegetative propagation by grafting vegetative reproductively, layering, soil conservation; making of jam, jelly, ketchup, sauce, pickles, fruit juices, confectionery or bakery items; working in canteen, or stalls for a specified period; packing of food material.

3. Shelter—Making stationery items, while washing, polishing doors, windows and furniture; canning chairs, repairs of furniture, casual labour work in the school.

4. Clothing—Spinning, making school bags, school uniforms, handkerchiefs, table cloths, pillow cases, knitting, making mats,

5. Culture and Recreation—Toy making, artificial flowers making, pottery painting, making games material, greeting cards, fancy covers for book and book binding, fancy candle making.

6. Community Work and Social Service—Helping adults in their work as projects, such as keeping a specified area clean, helping in the case of the sick, first-aid, helping at functions and during festivals, traffic control, helping in the literacy campaign.

Secondary Level (IX-X)

At this level more emphasis should be given to work practice. Activities may be selected according to the need interest of students and availability of time in each class from the following list—

1. Health and Hygiene—Growing medicinal plants, eradication of communicable diseases, paramedical service; cleanliness of the neighbourhood, well and pond, and the disposal of garbage; construction of toilet facilities and composite pits; making tooth picks, tooth powder detergents, disinfectants, first-aid boxes; construction of wastepaper baskets, dust bins, garbage cans, brooms, brushes, dusters, map, etc.; detection of adulteration.

2. Food—Agro-industries; kitchen gardening; pot culture! crop and seed production; repair of farm implements; soil conservation and desert control; horticulture, animal husbandry, and dairying, beekeeping, poultry farming, fish culture, distribution and fertilisers and insecticides, processing and

preservation of food, hydroponics, mushroom culture; khandsari, gur and candy making; canning; making jam, jelly, squashes, pickles; packing food, marketing, bakery; confectionery, cooking.

3. Shelter—Pottery, masonry work, workshop practice-mechanical, electrical, electronics; cane and bamboo work; black-smith, wood work, carpet weaving; home, village and town planning; minor repairs in buildings, fittings, furniture and household articles, decorating the home, gardening, interior decorations, construction of decorative pieces, chalk and candle making.

4. Clothing—Production of cotton, wool, silken and other fibres, weaving, dress making, knitting, hosiery work, embroidery work, dress designing, leather work, spinning of different fibres; dyeing, printing and repair of garments, laundry, work.

5. Culture and Recreation—Making toys and puppets, making and repairing musical instruments; making games material printing book binding, photography, stage craft, making costumes, holding exhibitions.

6. Community Work and Social Service—Identification of problems relating to health and hygiene, supply of drinking water and adult literacy; rendering help in solving these problems; helping teachers in tackling school drop-out problem by visiting houses of children and finding out their difficulties; motivating the people in slum and unhygienic areas to maintain cleanliness of their surroundings by joining hands with them in cleanliness campaigns; helping the illiterate people in the community by way of writing letters, filling in application forms and reading telegrams for them; helping in road construction and digging of well etc. in the community and their maintenance; during natural calamities involving students in the relief work and help the people in the asected areas; serving the sick people in the community; tree plantation; craving the soil erosion; canal repair and maintenance.

Senior Secondary Level (XI-XII)

1. Common Core Programme—The work done in the previous classes should be further extended at this level.

2. Work Practice—It should include mass production of work done previously as community and social work.

3. Subject Related Suggested SLPW Activities

(i) Physics—Gaining the basic knowledge about how to prevent electric shock accidents; giving the knowledge about how the lightning and the thunder occur and what are the use of lightning and thunder; giving an idea about how we receive the sound from the radio which is relayed from the radio station; preparing hot water with the help of solar heat energy; giving the knowledge about how to produce artificial rain; giving an idea of how to get electricity from the water and the steam; giving the basic knowledge about how to operate the machines like washing machine, grinding machine, electric cookers, etc:, giving the knowledge about how the sound is produced from various sound instruments; giving them the basic knowledge and practice about electronics and electrical gadgets.

(ii) Chemistry—Preparation of soap and washing soda; explaining the use of dettol and phenyl for cleanliness; preparation of tincture-iodine and simple ointments for wounds; preparation of dyes; explaining the preparation of bleaching powder; explaining the equipping technique and uses of gobar gas plant in the houses making use of animal waste; explaining the uses and preparation of ammonium nitrate; explaining the fixation of nitrogen; explaining the uses of insecticides; demonstrating the method of purifying water; giving them the basic knowledge and practice about various processes involved in photography.

(iii) Biology—Helping the farmers to get rid of the insect pest; learning methods of vegetative propagation; introducing modern techniques in incubation in poultry; practising the way of

getting uniform fruiting and blossoming through simple techniques using chemicals (hormones); leathering of economically important animals: making them aware of economic zoology; providing them the knowledge of crop rotation; helping them to know about the various source of nitrogen manure in the form of nitrogen yielding plants (legumes) and easily available cultures to increase the yield; making them aware of contamination; giving them the basic knowledge and practice about various processes and techniques involved in gardening,

Levels of Evaluation Work in SUPW

1. By the teacher—The teacher should note the behaviour of children and the skills learnt by them during SUPW activities.

2. By the children—The students should maintain dairy of the daily work and experiences gained along with their reactions.

3. By the parents and community members—The parents and the community members involved in organising SUPW activities should be consulted while assessing students behaviour and participation

Tools of Evaluation

1. Attendance—A record of attendance should be maintained in SUPW classes (Indore or outdoor).

2. Observation—Not only the product (goods or services), but also the process and the quality of learning needs to be evaluated for which 'observation' is a reliable technique. 'Anecdotal Records' and 'Check lists' may be used when this technique of evaluation is used.

3. Self-evaluation—Self-evaluation of their work by the students may lead to some exaggerations in the beginning but, if persisted in, wilt turn out to be a very reliable tool of evaluation.

4. Written Tests—Written examination in SUPW may cause some disadvantage. Assessment, therefore, should take the form of demonstration, viva voce, or examination of the product or service.

5. Feedback from Parents—Parents and guardians may be able to give valuable feedback of their children's work (SUPW) at home.

6. Feedback from Community Members—In cases of community service projects, the assessment by the beneficiaries may also a good source of evaluation.

Grading the Student in SUPW According to the Central Board of Secondary Education (CBSE), New Delhi, the assessment should be done on the following 7 points scale—

Grade A	(Excellent)	75 per cent and above
Grade B	(Very Good)	60-74 percent
Grade C	(Good)	53-59 percent
Grade D	(Quite Satisfactory)	45-52 per cent
Grade E	(Just Satisfactory)	33-44 percent
Grade F	(Poor)	15-32 per cent
Grade G	(Very Poor)	Below 15 per cent

It is necessary to follow the problem solving approach to ensure that the objectives of SUPW programme are achieved. Students should be made aware of the problems related to their needs. They should be led to arrive at solutions by discussing the material, tools and techniques necessary for performing such work and services. A built-in system of evaluation should be developed to enable the students to improve their performance and to enable teachers to give a fair assessment of their work.

Need of Work Experience

Kothari Commission recommended work experience as an integral part of education. Following points may be a cited to prove the need of work experience.

1. Bringing School close to the Society and Community—Through work experience among members of their society and community, student come closer to the society and community. They understand the difficulties of other person and to try remove them.

2. Primary of Activity experience in place of Bookish Knowledge—Since the beginning of formal education, bookish knowledge is being emphasised in Indian educational system. New Government policy 1986 lays emphasis on work experience so that the educated men and women may become self dependent.

3. Self-education—Work experience provides self education without books. Literacy alone is not education. An educated person must be able to fulfil demands of life task.

4. Self-dependence—Work experience makes boys and girls self dependent. They are able to earn their living. "Earn while learn" is a slogan which lays emphasis upon the pupils earning to meet expenses of his education. This is very popular now a day particularly in western society and among pupils pursuing of higher education without any financial help from their families.

5. Encouraging Skills of Work—The best-methods of knowing is through doing. Skills cannot be developed without work experience. Work experience selected' to individual traits provides vocational opportunities.

6. Development of Total Personality—Personality development requires cognative and affective development residues cognitive efficiency. Therefore, work experience is needed for total development of personality.

7. Reducing Gap between Intelligentsia and Labour Class—Dignity of work alone can hedge the gulf between the intelligentsia type and the labour class. In west, due to paucity- of domestic servants, most of the men and women themselves perform all work in the family. This is not possible without-providing work experience in student life.

8. Adopting Useful Hobbies—Without work experience, pupils work their leisure time in useless pursuits. Work experience provides them opportunities of adopting useful hobbies such as gardening, growing vegetables, clay work, painting, etc.

9. Creating Work Awareness—Progress in any field of life requires awareness among pupils. Provision of work experience in early education creates such work awareness.

10. Knowing Productivity—Productivity is concerned with production, consumption and sales etc. Through work experience pupils learn to the life means to be productive.

11. Increasing Nations Productivity—Work experience in early education makes boys and girl's productive, thus increasing total productivity the nation.

12. Coordinating Theories and Practices—Theoretical knowledge in any field is lame without its actual practice in daily life. Work experience is needed for coordinating theory and practice.

Importance of Work Experience at Elementary School Stage

Meaning of Work Experience

Work experience means to obtain experience through work. 'Work experience' is a technique through which 'work' and 'education' are correlated. The 'work' means that activity which is productive. 'Work experience in education is that activity which develops a tendency for productivity. In India, the current system of education is so theoretical that "the students seldom get an occasion to learn, things by doing. They are generally passive listeners in the class. The students will be able to learn by their own experiences if more importance is given to 'work' in education. They will not be always dependent upon others' experience. They will learn many things on self-experience.

India is continuing its old 'traditional methods education even now. In vocational education, one does not employ the latest technological and scientific methods. Through work experience, one

may learn use of modern methods in productive activities. One may learn how to bring out productive activities on modern lines. This will ultimately enhance the rate of production in factories, mills and elsewhere.

Importance of Work Experience at Elementary School Stage

1. Development of skill—Work experience should not be related only with productivity, rather, it should aim at developing a skill for productivity.

2. Self-experience—Work experience should give self-experience to students which would satisfy his interests and aptitudes.

3. Modernization—As the student has to employ latest technological at and scientific methods in work experience, it develops a tendency towards modernization. A smooth path is paved for the society imbibing modern culture.

4. Self-dependence—Work experience makes the student self-dependent to a certain extent, as he may earn for himself for a part of his expenses of education.

5. Vocationalization—Work experience vocationalizes education.

6. Community Development—As work experience makes the educational institution a centre of community development, it meets some needs of the community.

7. Material Gain—By education imparted through experience both the student and the school may gain materially through some products of daily use.

1. Making Education a Part of Life—Introduction of work experience in education is likely to reform our stereotyped educational system. Through this education will become a part of life, as it emphasise learning by doing.

2. Introducing Sense of Dignity of Labour—Work experience develops a sense of respect in student for manual labour, as each has to do some labour. This may bridge the gap between the labour and the intellectual class.

3. Developing Community Consciousness—Work experience develops communal unity. The school imparts education according to the needs of the immediate community. This develops close relationship between the school and community. An attempt is made sometime to find out solutions community problems through work experience in schools. Thus, the school becomes a community centre.

4. Solving Problems of Unemployment—Education based on work experience may solve the problem of unemployment, as the student is able to learn some trade business which makes him dependent when he completes his education.

5. Utilising Natural Resources—Education based on work experience teaches us to utilize natural resources intelligently.

6. Contributing of Natural Prosperity—The students becomes more skilful and may contribute more to the growth of national prosperity through work experience.

Important Factors in Work Experience

The following points should be remembered while employing work experience methods in education—

1. Work Experience-centred Education—Work experience cannot be accepted as an independent subject of study. It will have to be integrated with all other subjects of study. It cannot exist by its own. Total education has to be made work experience-centred.

2. Teaching for Work Experience—For the success of work experience, one will have to make the total atmosphere of the school favourable to it. For this suitable text books will have to be prepared.

Teachers will also have to be trained on new lines for this purpose. Teachers 'training colleges will have to revise their courses for the preparation of work experience teachers.

3. According to Stages of Learning—Work experience method may be freely utilized up to the secondary level of education. Work experience method is not possible at the pre-primary stage, because at this stage the young children lack the necessary co-ordination between the movements of their hands and feet. However, they may be given sensory training which may equip them for some sort of work experience. At the primary stage, children may be taught some mechanical activities in order that hands and feet become suitably trained for using certain implements later at the secondary stage.

Problems and Remedies of Work Experience

1. The Problems of Determination of Aims—People assign different aims to work experience. While some take it as a means for creating the trait of productivity, others think that it should develop a capacity for production.

Remedy—In fact, the aim of work experience should be dependent or principles of work experience. One does not aim to make the child an artisan by developing in him a capacity for production; its purpose should be to develop the virtue of productivity in the child. When he develops the virtue in himself make production also in due course.

2. The Problem of Suitable and Trained Teachers and Guides—Indian training colleges produce teachers to impart theoretical instructions to children. These teachers are unsuitable for giving education based on work experience. It is, therefore, that our multipurpose schools have not succeeded. Similarly, our work experienced base education may not succeed in the absence of suitable teachers.

Remedy—Keeping in view the implications of work experience, we have to prepare such trained teachers and guides who impart education based on work experience. They should establish a close relationship between general education and work experience. Till such trained teachers are available, one should seek co-operation of trained workers from the nearby industries. For making the workshop experience more practicable and meaningful, it is necessary to establish a close relationship between training institutions and industries.

3. Lack of Interest and Motivation for Work Experience— Education based on work experience requires a close relationship between education and practical work. As 'Work' is more dry and tiring than 'play', it is possible that the .child will not take interest and lack motivation in education based on work experience. Under such a situation, he will not be benefited by education through work experience.

Remedy—The creative tendency in the child keeps him active. He takes pleasures in satisfying his creative tendency. Therefore the work experience technique should be introduced through play-way method which is likely to be very interesting to children. The interest and capacity of the child should be taken care of while organizing education through work experience. In order to motivate the child should be acquainted with the benefits of work experience in which he is to be engaged.

4. The Problems of Incorporation of Work Experience in the Curriculum—What should be various aspects of work experience? How to plan them? How to incorporate them into the curriculum? The purpose of work experience will remain defeated unless these issues are satisfactorily decided.

Remedy—First of all one should decide programme of work experience according to the mental level, interests and aptitudes of children. Afterwards these should be organized in a logical and psychological manner for incorporation in the curriculum. The various types of activities and works chosen for work experience should be related with local industries or with the needs of the immediate society. This will be a prelude to obtaining co-operation of the local industries.

5. The Problems of Instruction and Method of Work—Work experience can be obtained only through doing. Manual labour and social service are necessary for this general education. The objectives of work experience cannot to obtain through lecture method. In this context 'correlation' and free methods may be useful.

Remedy—In the correlation method, one gives instruction in various subjects around the work experience as a nucleus. The subjects which cannot be taught through the correlation method, may be left for 'free' method. In the 'free' method the student is left free for obtaining experience in the workshop.

6. The Problem of the Necessary Teaching Materials—Due to paucity of financial resources, it has not been possible to transform secondary schools into multipurpose schools. Therefore, the objectives of vocationalization of education have not been realized. The same problem is faced in relation to work experience. It appears difficult to arrange the necessary materials for work experience in schools and colleges. For the work experience, programme is needed a correlated time-table, laboratory, workshop and contact with the local industry. It is really a difficult problem to organize all these.

Remedy—Work experience should be related to vocationalization of education which requires organisation of necessary materials, equipments and laboratories, etc. The Central and State Governments should give adequate grant for this purpose. The materials should serve many purposes,

7. The Problem of Evaluation—The current system of examination is subjective. It cannot be useful for evaluating the progress of students who have learnt through work experiences. This requires devising objective and rated evaluating devices.

Remedy—The productivity of the student should be accepted as the basis of evaluation. This requires practical examination, laboratory experiment and oral and written examination, all taken together. The written examination should be supplemented by some objective tests as well. The daily work of the student be a supplementary device for assessing his merits.

8. The Unfavourable Attitudes of Guardians towards Work Experience—As the guardians have not fully understood the importance of vocationalization of education, so they react favourably against work experience. They do not like to get their wards admitted to those schools where they are required to do manual work. They believe that their wards can get better vocational training without going to schools for it.

Remedy—The guardians should be told that the current system of education is creating unemployment because the educated youths who have only theoretical knowledge of things, cannot stand on their own legs. Favourable attitude may be created guardians for work experience through exhibition, seminar, lectures, publicity through newspapers and radio etc.

9. Work Experience—Yet another means of relating education to productivity is to include work experience which may be defined as participation in productive work in school, in the home, in a workshop, in a factory or a farm, or in any other productive situation, as an integral part of general education at the school stage. This work with hands will help the young to develop insights into productive processes and use of science and inculcate in them respect for manual labour and habits of hard and responsible work,

Seminar on Primary and Work-Oriented Education (1970)

Objectives

The National Seminar on primary and work-oriented education was organised by the National Council of Education Research and Training, as a part of the programme for the celebration of the International Education Year. It was organised to take stock of the trends of development in the field of pre-primary and primary education during the sixties and to formulate programmes and policies for its improvement in the seventies, the seminar was organised in New Delhi from November 9 to 11, 1970 with Prof. S.V.C. Aiya, Director, National Council of Educational Research and Training as the Chairman of the organising committee.

Recommendation

It made the following major recommendations—

1. The programmes of pre-school education be closely related to the home and community environments of the child.

2. The expansion of the programmes of pre-school education may be left to the care of voluntary agencies. The agencies engaged in pre-school education should try to develop less costly equipment with the help of indigenous maternal community resources he fully utilised.

3. Necessary additions/modifications in the primary school teacher training programmes should be made to include principles governing child care and pre-school education so as enable the primary school teachers to look after pre-school programmes in mixed schools.

4. The State governments should be in a position to provide funds for the purpose of training teachers and specially trained supervisors for pre-primary education.

5. Special attention should be paid to the promotion of the following Gandhian values in primary schools—

(i) The dignity of manual labour through the use of work, as a part of the educational programme.
(ii) A sense of social awareness and social responsibility through involvement of pupils in community service.
(iii) Secular outlook and respect for other religions through an understanding of the fundamental unity of all religions.
(iv) Fearlessness, truth, non-violence (universal love), purity, service and peacefulness through participation in curricular and co-curricular activities, and through stress on songs, stories and dramas based on Gandhian life and values.

6. While taking steps for providing work-experience at primary stage, the following details to be spelt out—

(i) Formulation of the operational concept of work-experience.
(ii) Types of work-experience programmes to be introduced during 1970's in our country.
(iii) Minimum work-experience programmes to be introduced in all the schools in the country with stress on structured activities to be introduced in selected schools.
(iv) Action programmes pertaining to production of curriculum materials.
(v) The pre-service and in-service training geared to work-experience to be provided to teachers and supervisors.
(vi) Steps to be taken for the mobilisation of public opinion in favour of work-experience.

7. Work-experience should be socially meaningful. It should be realistic physical work, without overemphasis on economic aspects at the cost of learning outcomes and it should lead to the development of productive abilities and the total personality of the child.

8. Individual schools might be encouraged to develop their own programmes of work-experience and the results of their programmes might be made available to the various agencies and institutions in the country.

9. The agencies for curriculum development at the Centre and State level may start a continuous dialogue on programmes and techniques of curriculum development.

10. In order to improve the competence of teachers, the following steps may be taken—

(i) Suitable in-service and pre-service training courses may be developed by each State Government.
(ii) Suitable materials as help books and teacher guides may be developed by State Institutes Education.
(iii) NCERT should take up programmes on development of good techniques of teaching for the primary classes and make the same available to the State level agencies.

11. Efforts may be made to institute the programmes of close supervision of schools to provide guidance to working teachers.

12. The teachers, supervisors and parents may be made conscious of the rate of wastage and stagnation and efforts may be made for identification and proper treatment of potential cases of wastage and stagnation in the school.

13. The possibility of implementing syllabi on health education for the age group of 6-11 and 11-14 along with that of primary teacher training school developed by the Central Health Education Bureau and the Ministry of Education jointly may be explored,

14. As there were a large number of pupils who were unable to take advantage of the use of full schooling facilities, the possibility of providing some part-time education as a temporary measure for such children may be examined. Shift system may be accepted only as a measure of expediency and not as a principle.

15. The Government grant policy should develop an incentive to exploit one's own resources of finance, even though by the large the Government has to be the main source of financing the primary education in future.

16. The local bodies should exploit the sources of revenue fully for primary education.

17. There is a need for evolving a suitable curriculum for the schools functioning in tribal areas. This curriculum may be science-oriented but culture-based.

18. Steps to improve the Ashram school education may be taken. The teacher-community relationship may be improved

Seminar on Gandhian Values in Education (1970)

Introduction

This National Seminar was organised by the Ministry of Education and Youth Services in collaboration with the Maharashtra Government and the Hindustani-Talimi Sangh to discuss some important facts of the problems relating to Gandhian values in Indian education. It was inaugurated by Prof V.K.R.V. Rao, Union Minister of Education and Youth services. It was presided over by Shri Shriman Narayan, Governor, of Gujrat. It was convened at Seva Gram, where Gandhian first put forward his concept of Nai Talim. It was blessed by the benign presence of Acharaya Vinoba Bhave. It was held from February 9 to 11. 1970.

Major Recommendations

1. Fundamental Values—The ultimate objective which Gandhiji has in view was the evolution of a non-exploitative, non-violent society conducive to the welfare of all. To this end, it is essential to emphasise three fundamental values in education, viz.—

(i) dignity of manual labour through of work as a part of the educational programme; (ii) a sense of social awareness and social responsibility through the involvement of students and teachers in meaningful programmes of-community service; and (iii) the promotion of a secular outlook or sarvadharma samabhava through an understanding of the fundamental unity of all religions.

2. Programmes of Implementation—Suitable programmes should be involved in their planning and implementation. These programmes should cover all stages of education and may for instance include—

(i) Safai and maintenance of campus;
(ii) Participation in sowing and harvesting operations through suitable adjustment of vacations;
(iii) Participation in productive work in agricultural/operations in the school, family farms or the neighbourhood;

(iv) Teaching of crafts;
(v) Cultivation of hobbies;
(vi) Adoption of new methods of teaching which provide opportunities for work with hands to the maximum extent possible in every subject.
(vii) Establishing close contacts between the educational institutions and the community through programmes of mutual service and support;
(viii) Participation in programmes of relief in times of famine, flood, epidemics and other natural calamities;
(ix) Beginning the school day by an assembly with a silent and/or common prater and provision for teaching of moral and social values;
(x) Organising suitable programmes of adult education, including the spread of literacy;
(xi) Involvement of students in programmes which will train them in responsibility.

In view of the special problems involved, the Ministry of Education and Youth Services may set up a study group to make concrete proposals for their introduction in urban areas.

3. These programmes have an obvious significance at the primary stage because about 70 million children are involved.
4. At the secondary stage, the programmes of work-experience should be highlighted.
5. At the university stage, the national service programme should be generalised.
6. It is essential to produce books for children to teach sarvadharma samabhava.
7. All students should be introduced to the life and message of Mahatma Gandhi through suitable courses.
8. The success of these programmes will largely depend upon the efficiency and proper orientation of training institution for teachers, the quality of leadership provided by Education Departments, and the extent to which the programme becomes a movement undertaken by the community of teachers themselves.
9. The realisation of Gandhian values in education needs an elastic and dynamic system of education for its-proper development.
10. The efforts of the educational system to realise these values will need support from parents and the community in general. An appropriate lokashikshana programme to this end should, therefore, be simultaneously developed.

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Chapter 3

CASE HISTORY METHOD

Case History Method

Psychology today is widely used for the cure of various types of abnormalities. The parents as well as the teachers seek guidance from the psychologists in their dealings of the child and students. They complain of the abnormality of the child and student, to the psychologist who with their help, finds out the causes and tries to remove them. Thus, today one finds a flourishing branch of psychology in the form of abnormal psychology. In the more developed Western countries, the frequency of nervous diseases in gradually growing as the rush of life is increasing with industrialization and urbanization. This has increased the importance of abnormal psychology. Abnormal psychology and psychiatry use a certain method known as case history in their study of abnormal cases. As is clear by the name of the method, in it the psychologists traces the whole history of the case. This tracing of the history required not only the statement of history by the patient, but also whatever can be gathered from his relatives. The psychologist interviews all the dear relatives of the patient and also his friends. By these interviews much is known about the habits, routine, thinking, nature etc., besides the various incidents of the life of the patients. These interviews also make the psychologists know the various types of reaction which the patient has with different persons. Again, the patient is asked to relate his life history. He is also asked to relate his dreams etc., and they are intercepted by the psychologists as they reveal the infantile life of the patient. All the data gathered through the patient as well as those related to him in some way give an outline of the history of the case. By the analysis of this history, the psychologist tries to find out the causes of the abnormality. Suppose a child is taken to the psychologists, whose behaviour is not normal, or who has run away from the school several time. The child is ill-mannered and bad tempered. He does not bother about punishment of dictates of the elders. The psychologist interviews the parents and other relatives of the child and tries to know his case history. He takes the child with him into a room and sympathetically tries to know various things about his life. He enquires about his conditions in school and about his friend. In short, he enquires about ever thing concerning the child and his relations with others. An analysis of all the data gives him an idea of the cause of abnormality, truancy or bad manners. If the causes are discovered, the parents and teachers are guided accordingly and the malady is removed.

An example from the report by **Katherine M. Mourer** entitled 'Behaviour Problem in a Young child' will give an idea as to how the clinical psychologist utilizes the case history method—

Louisy was 3 years and 9 months. She was very obstinate and short-tempered. From an interview with her parents it was learnt that the father and mother held each other responsible for bringing up the child as emotionally unbalanced. Then they were interviewed separately. An aunt of Louisy's mother was also interviewed. In the interview Louisy's mother described her family background. She told that Louisy was born normally and that her mother-in-law did not take part in the household work but remained with Louisy for hours. Louisy had acute constipation. She had occasional fits in which she lay down on the ground, cried and attacked other. Louisy's mother did not want to disclose her marital adjustment. He mother-in-law severely criticized her friends, her household management and here behaviour towards Louisy.

Louisy's problem began at the age of 2. At the age of 3 she liked to hear stories instead of playing with the children of her age. While among other children, she quarrelled with them. She liked to live with her father and to for walk with him, though when angry she did not spare even her father. Once when her father did not hear, she bit in his leg.

An interview with her father disclosed that he was proud of Louisy. He thought her to be very intelligent and described how Louisy paid attention to him and worked like an adult woman. He expressed doubt in Louisy's happiness and that perhaps she never fell secure.

A physical examination of Louisy disclosed that except some weight, she had no physical abnormality. According to the doctor, constipation was due to wrong habits of diet. Sucking the thumb, biting of the nails and turning the hair was clearly observed. When her father brought her to the psychiatrist, she appeared to be attractive, modest and feminine. When her mother brought her; she appeared to be obstinate and unmanageable. Sometimes she struggled and quarrelled and lay down on the ground and cried, when requested by the mother to wear the coat. Psychological tests showed that she commanded a vocabulary found in a child of 8 years and that she was more intelligent than those of her age. The power of expression was far more developed that the physical powers.

The clinical psychological came to the following conclusions about Louisy's abnormal behaviour.

She was a very well developed and brilliant child with an attractive personality. She was used to close attention and company of the adults, and her daily routine was extremely unsystematic, resulting in fatigue. This resulted in the absence of harmony in the parent-child relationship. They did not get opportunity of adjustment with the children of her age. Her intellect was too much developed because of absence of variety in experience. Her capacity did not develop harmoniously and her word powers were excessively developed beyond motor capacity. She understood her weakness which made her adjustment on child's level still more difficult. She appeared to be an extremely fatigued small child tyrant who did not get emotional contentment from her mother and was emotionally introvert and dependent on her father. The psychologist mainly recommended the following things for her : Friendly relations with mother should be established and her life at home should be reorganized. She must get more sleep, balanced diet and should play with children of the age. In the evening she must be attended by some members of the family mother, father or grandmother. The mother should feel that she is responsible for the progress of the child. But father and mother-in-law were also told that they should change their routine in order to make the relations of mother and Louisy better. The child was admitted into a nursery school and arrangements were made between the school and clinic so that she might not be turned out of the school before she could be reformed. It difficult to adjust herself in the nursery school. But after some years, it was found that Louisy was far more brilliant than the children of her age in studies as well as scouting etc. But she could not overcome her early weaknesses which lay in the lack of affection for the mother and excessive attachment to Daddy. At 15 years of age, she was a beautiful girl who appeared to be very able and behaved with a balance. She has no nervous habits. According to her own report, her greatest happiness was to work with Daddy. The man whom she dreamt to marry was exactly like her Daddy.

The example cited above shows very well the problem, the procedure and the work of the clinical psychologist with the aid of the case history method.

Like other methods in psychology, case history method has also its own difficulties and limitations. One of the limitations is that it is very difficult to know the whole history of any patient and to observe it objectively. It is possible that while relatives are interviewed they may be prejudiced in their answers or try to hide some unpleasant things. In the case of the children, it is difficult to know their history through them, because their memory is neither strong nor reliable and the psychologist has to depend upon the reports of the relatives. It is also possible that the parents may lose sight of something which is very important for the case. These and other limitations make it difficult for the clinical

psychologist to arrive at a proper diagnosis. In the case of adults, abnormal, etc., however, the psychologist gets the date of their dreams, analyses them and finds out some unconscious causes. He may also ask the patient to explain thing about his childhood and tell the psychologist his story. The psychologist may questions him from time to time and can get much out of his statements. Thus, in the case of the adult abnormal, the difficulties are less than those in the case of the child. This, however, does not mean absence of difficulties and limitations which are always there. But in the ultimate analysis, the case history method has proved to be very valuable for the diagnosis of mental abnormalities. As a matter of fact it all depends upon the experience and ability of the psychologist as to how far he is able to gather a history and analyze it to find the real causes. A psychologist like Sigmund Freud can very well/make use of a case history to discover the causes of the most complex type of abnormality.

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Chapter 4

MIRCO-TEACHING

Mirco-Teaching

Introdoction

Teacher training institutions prepare teachers for the schools. During the training period, the behaviour of the teacher is modified. The usual practice in the training institutes has been to acquaint the teacher with theory and then send him to the school for practice in teaching. The teacher under training is taken to the school where he/she is left in a full class and is required to teach that group for full period *i.e.* 35 minutes or 40 minutes whatever is the schedule of the school. How far it is correct and justified is worth considering?

Rather it becomes an interesting proposition for all concerned with education. Let us see to it. Taking a teacher trainee to a school class room may be compared with taking a person who has learnt theory of swimming, to a river and asking him to swim. Will that person be able to swim and survive? Oh! No. It would rather be a pitiable situation both for the person who is trying to learn swimming and the person who is giving training in swimming. Taking the person to water for learning swimming is all right. But taking him to deep waters is not advisable at the early stages of learning. The person should be given training bit by bit, in knee deep water, say in water where the depth is 3 feet or so, then to 4 feet, 5 feet, six feet and so on.

This type of learning, step by step, will prepare him well and then naturally his performance in deep waters will be all right. In the same way a surgical doctor while under training performs minor operations first, then bigger ones. This type of learning step by step, easy things first and complicated and difficult ones afterwards, will ensure him a bright future with all success. This type of learning will encourage a better behaviour. He takes up action research and through it; he is always interested in finding out what is good and in what type of situation that good works better.

Action research helps the teacher to modify his own behaviour so as to make it fit for the learners,

Behaviour Modification of the Students. The teacher through the process of teaching aims at modifying the behaviour of the learners. It is research mindedness on the part of the teachers which makes him do the job of teaching in a much better way. The teacher may take up various research projects and thereby he can succeed in modifying the behaviour of the learners.

The traditional system of training produces incompetent teachers who are hardly half prepared for the job. The teacher does not understand the errors that he commits. One of the new practices evolved for modifying the behaviour of the teachers is Micro-teaching. Micro-teaching has been exclusively used for giving training to the teachers. It is rather interesting to see the historical development of micro-teaching.

Historical Development

It was Keith Acheson, a research scholar in the Stanford University who discovered that video-tape recorder could be used to provide feedback of a demonstration lesson. He along with other students of the Stanford University started using Video tape recorder for modifying the behaviour of teacher

trainees. After sometime it was Dwight Alien of Stanford University who coined the terra Micro-teaching. Later many others in U.S.A.., U.K. and Netherlands did pioneering work in Micro-teaching.

Micro-teaching in India

Micro-teaching was introduced in India in 1967 with the humble attempt made by D.D. Tiwari of Govt. Central Pedagogical Institute, Allahabad. N.C.E.R.T. and some Universities of India started propagating the concept of Micro-teaching,

Definitions of Micro-teaching

D.W. Alien (1966) "Micro-teaching is a scaled down teaching encounter in class size and time."

Alien and **Eve** (1968) "Micro-teaching is defined as a system of controlled practice that makes it possible to concentrate on specific teaching behaviour and to practise teaching under controlled conditions."

R. N. Bush (1968) 'Micro-teaching is a teaching technique which allows teachers to apply clearly defined teaching skill is to carefully prepared lessons in a planned series of five to ten minutes encounters with a small group of real students, often with an opportunity to observe the result on videotape."

David B. Young defined "micro-teaching as a device which provides the novice and experienced teacher alike, new opportunities to improve teaching."

McAlleese and Unwin (1970)

The term micro-teaching is most often applied to the use of Closed Circuit Television (CCTV) to give immediate feedback of a trainee teacher's performance in a simplified environment.

Clift and **Others** (1976) "Micro-teaching is a teacher training procedure which reduces the teaching situation to simpler and more controlled encounter achieved by limiting the practice teaching to a specific skill and reducing teaching time and class size."

Passi, B. K. (1976) says; "It is a training technique which requires pupil teachers to teach a single concept using specified teaching skills to a small number of pupils in a short duration of time"

According to The Encyclopaedia of Education (Ed. Deighton) Micro-teaching is a real, constructed, scaled down teaching encounter which is used for teacher training, curriculum development and research."

Characteristics of Micro-teaching

A few Characteristics of micro-teaching are as under—

1. It is a teacher training technique and not a method of class room instruction.
2. It is micro in the sense that it scales down the complexities of real teaching.
   (a) Out of contents, a single concept is taken up at a time,
   (b) Only one skill at a time is practised,
   (c) Size of the class is reduced and thus the number of students is just 5 to 7.
   (d) Duration of each micro-lesson is 5 to 7 minutes.
3. Feedback is provided immediately after the completion of the lesson.
4. The use of Video tape and Closed Circuit Television make the observation very objective.
5. It is highly individualized training device.
6. There is a high degree of control in practising a skill when this technique is used.
7. Micro-teaching is an analytic approach to training.

Micro-teaching involves actually teaching a real lesson to real pupils with none of the role-playing of earlier modelled teaching situations.

— Micro-teaching lessons are constructed for the benefit of the teacher and student's learning is incidental.
— Micro-teaching provides a significant way to bring specific educational problems into manageable focus.

Components of/Micro-teaching

The components of Micro-teaching are—

(i) a teacher
(ii) the pupils (usually 4 or 5)
(iii) a brief lesson.
(iv) the objectives of the specific Micro-teaching occasion,
(v) Feedback by the, supervisor, or by using audio tape recordings, video tape recordings and closed circuit television.

Objectives of Micro-teaching

The objectives of micro-teaching are as under—

1. To give practice teaching to the teachers under training by lessening the complexities of class room situations.
2. To identify the drawbacks of the teachers and to give immediate feedback for modifying their behaviour.
3. To improve teaching through more control of instructional process-and supervision.

Assumptions of Micro-teaching

The assumptions on which micro-teaching is based are as under—

1. It is a teaching technique whose main focus is development of teaching competencies.
2. There is reduction in the complexities of normal classroom.
3. There is training of specific teaching skills by taking up practice of one skill at a time.
4. There is increased control of practice by providing feed-back to the pupil teachers.
5. It is highly individualized training programme.
6. It is based on the principle of a complex skill into simpler skills.

Micro-teaching Procedures

According to **Clift** and other (1976), Micro-teaching procedure have the following three phases—

(i) **Knowledge Acquisition Phase,** At this stage, the student teacher tries to get knowledge of the skill to be practised. He reads relevant literature concerning that skill. He is also made to observe a demonstration lesson in which that skill figures prominently. The person who demonstrates the skill is an expert of the subject and the skill. By observing that lesson, the teacher under training gets theoretical as well as practical knowledge of that skill.

(ii) **Skill Acquisition Phase.** The student teacher acquires the skill in hand through a lot of practice. He prepares the micro-lesson, teaches it to have practice and then through feed-back he evaluates his performance. Then he re-plans the lesson with modifications and improvement and then re-teaches that lesson. Again there is re-feed back in order to enable him to have mastery of the teaching skill, in this way, different skills are learnt by the student teacher one by one.

(iii) **Transfer Phase.** At this stage, teacher integrates the different skills. Instead of artificial situation he teaches in the real classroom where the number of students are full class. His lesson is of 30 to 35 minutes duration and there he tries to integrate all the skills for which he made efforts in Phase No. I and II.

Procedure Adopted in Micro-teaching

In view of the above phases, the following are the steps for conducting a micro-lesson successfully—

A. 1. There is general discussion about micro-teaching. Theory of Micro-teaching with all details is discussed. The teacher under training reads related literature and through discussions, clarifications are sought.

2. Different skills involved in teaching are explained to the pupil teachers. Out of the various skills, one skills for mastery purpose is selected.

3. An expert of the subject gives a demonstration lesson on that particular skill.

4. The demonstration lesson is followed by the discussions, in which the learner teachers discuss things and seek all type of clarifications—

B. 1. Writing the micro-lesson plan.

2. Teaching

3. Feedback

4. Re-writing the micro-lesson plan.

5. Re-teaching.

6. Re-feed back

Plan Teach Feedback
Re-feed back Re-teach Re-plan

Micro-teaching Cycle

The above given is the Micro-teaching cycle. The student teacher is required to re-plan, re-teach and re-feed back till he is able to have mastery over the skill in hand.

Micro-teaching and Traditional Teaching—A Comparison

Micro-teaching is a new idea in the field of teacher education. The old people who have traditional outlook don't want to change their ideologies. They face problems in accepting the innovation of Micro-teaching. This type of situation always arises whenever new things will come up. The old nations need be converted into the modern' ones because the modern ones are undoubtedly unique. The comparison of the two techniques brings home clearly the view point that Micro-teaching is an improved technique in every way and is better as compared to the traditional teaching:

Micro-teaching	Traditional Teaching
1. Teaching is relatively simple.	1. Teaching as experienced by the teacher is complicated and difficult.
2. It does not pose a big threat of fear to the teacher.	2. It poses a big threat and a challenge to the teacher.
3. Here the objectives are given in behavioural terms.	3. The objectives are not stated in behavioural terms.
4. The number of students in a class is less. It is rather a small group of 5 to 10 students.	4. It is an overcrowded class where the number of students is 60 to 90.
5. There is provision of immediate feed-back. That helps the teacher to know his drawbacks and improve upon them.	5. Immediate feed-back not provided.
6. Teaching is carried on under fully controlled situations. The supervisor is there who is determined to improve teaching.	6. There is no control as such over teaching. There is no supervision.

7 The teacher practises one skill at a time. He continues the practice till he is able to have mastery of it.	7. The teacher practises the whole teaching behaviour which consists of many skills.
8. Duration of time for teaching is five to 10 minutes.	8. Time duration is 35 to 40 minutes.
9. Patterns of class room interaction can be studied objectively.	9. Patterns of class room interaction cannot be studied easily.

Merits and Demerits of Micro-teaching

Merits—Here below are given merits of micro-teaching:

1. It is an effective device for modifying the behaviour of the teachers under training.
2. It is highly individualized type of teacher training.
3. It is useful for pre-service and in-service teacher training. The teachers can improve their competency of teaching.
4. Feedback being quick there is scope for early remedy of drawbacks and hence overall improvement in teaching is possible.
5. It provides a lot of scope for research work especially of experimental type.
6. It helps in developing a really useful type of curriculum.
7. Usually classroom teaching is a complex and complicated type of activity. Micro-teaching simplifies it so as to make it suitable for the beginner teachers.
8. It helps in acquiring various type of skills which ultimately form the basis of successful teaching.
9. In micro-lesson, the observation is very objective because different type of audio-tapes, video-tapes or close circuit TV are used. Of course, in Indian situations where the observer is usually a teacher it may not remain fully objective type.
10. It develops a lot of confidence in the teachers
11. It helps in sorting out problems related to class room teaching. Their proper solutions can be thought of.
12. Close supervision is possible.
13. The objectives of micro-lesson are clearly given in behavioural terms.
14. Micro-teaching can be carried on in real class room situations or in simulated conditions.

Demerits

The Micro-teaching suffers from a few draw-backs which are briefly given below—

1. It requires competent and fully trained persons.
2. It wastes a lot of time of the students. Each micro-lesson goes on for 5 or 7 minutes where the main emphasis is on teaching technique. Learning by the students is almost ignored.
3. It kills creativity of teachers. During teaching, a teacher might evolve something new but he has to stop as the micro-lesson ends.
4. Micro-teaching can be carried on successfully in controlled type of environment but the class room situations prevailing all around are not such. There are fluctuations and flexibilities.
5. The application of Micro-teaching to new problems and practices in teaching is unlimited.
6. Micro-teaching alone may not be sufficient. There is need of integrating it with other teaching techniques.

Teaching Skills

Teaching is a complex phenomenon that comprises of various specific teaching skills. Through Micro-teaching, complexities of class room teaching are reduced. The different skills are identified and

then mastery of each skill is acquired. Here' two important questions crop up which need consideration. The first one is to know what a skill is. The second one is how many skills are involved in the teaching, process.

What is a Teaching Skill?

N. L. Gage (1968) says; "Teaching skills are specific instructional activities and procedures that a teacher may use in Ms Classroom. These are related to the various stages of teaching or in the continuous flow of the teacher performance."

How Many Skills?

To know how many skills are involved in the teaching process is rather an interesting study. A few research workers have tried to identity several sets of component teaching skills. Some of them are common with a little different terminology.

Alien and **Ryan** (1969) of Stanford University put forth the view that fourteen skills are involved. Borg and his associates (1970) increased the number to eighteen.

In India. **B. K. Passi** (1976) on the basis of work done in CASE, Boroda has given a list of twenty one skills. Jangira and his associates (1979) gave a list of twenty.

None of the lists suggested by the researchers are exhaustive and final. We can add or subtract from the lists as per need of the situation the list of skills given by **Alien** and **Ryan** (1969) is as Under—

1. Stimulus Variation. Teaching depends upon the stimulus provided by the teacher during teaching. A good teacher goes on varying the stimulus in order to bring in variety in his teaching. That way he is able to attract the attention of the students. Thus the teachers are trained in movements, gestures, focussing, interactional styles, etc.
2. Set Induction. Set induction helps the students to induce maximum. The teacher uses their present knowledge and skills and tries to involve them in the lesson.
3. Closure. It is related with the finishing up of a stage in teaching. It helps the students to relate the new knowledge with the previous one.
4. Silence and Non-verbal cues. During teaching, the teacher provides cues to the students in order to encourage them. Sometimes he puts a thought provoking question. The students speak on it. The discussion goes on and on when the teacher does not give his personal comments. He rather remains silent. It makes many other students to come forward and speak.
5. Reinforcement of Student Participation. The pupil teacher in every way tries to encourage student's participation in the lesson. As far as possible, he accepts their responses with a smile. Only positive reinforces are used by him He makes every effort to avoid the use of negative reinforces which may result into any type of discouragement for the students.
6. Fluency in Making Questions. While putting questions to the class, the teacher should have fluency. He tries to have as many questions as possible in the scheduled period of teaching.
7. Probing Questions. The teacher puts such questions with the help of which he is able to dig out something from the students. With the help of probing questions, the teacher is able to lead the students to correct responses.
8. Higher Order Questions. In every good lesson, the teacher puts some questions which are of higher order. This type of questions enable the students lo form generalizations or to reach some definite principles.
9. Divergent Questions. Putting divergent questions is another skill which makes the students thinks creatively.
10. Recognising Attending Behaviour. Every good teacher has the ability to judge while teaching how far the students are taking interest in the lesson. The teacher is able to do so through visual cues.

11. Illustrations and use of Examples. A good teacher has the skill of clear teaching. For this purpose he is able to give good examples. Through illustrations, he is able to capture the attention of all.
12. Lecturing. The teacher is able to present the material effectively by using the right type of techniques.
13. Planned Repetition. Sometimes during teaching the teacher repeats things in a planned manner. I le does so in order to focus the attention of the students over some important points.
14. Completeness. Communication of teaching is two way traffic. Through teaching, the teacher is able to communicate himself fully. He is able to give knowledge, developed attitude and interest of the students.

B. K. Passi (1976) described 13 skills in his book 'Becoming Better Teacher Micro-teaching Approach. The different skills are as under—

1. Writing instructional objectives.
2. Introducing a lesson.
3. Fluency in questioning.
4. Probing questions.
5. Explaining.
6. Illustrating with examples.
7. Stimulus Variation.
8. Silence and non-verbal cues.
9. Reinforcement.
10. Increasing pupil participation.
11. Using Black-Board.
12. Achieving Closure.
13. Recognising attending behaviour.

The Baroda General Teaching Competence Scale (BGTC) has divided teaching skills into three categories—

I. Pre-instructional

II. Presentation Skills

III. Closing, Evaluation & Managerial Skills.

List of Probable Teaching Skill for Different Stages af A Lesson

Here below is given a list of probable teaching skills which are required at different stages of a lesson—

I. Planning Stage—

This stage involves the following skills—

1. Writing Instructional Objectives.
2. Selecting the content.
3. Organising content.
4. Selection of Audio Visual Aids material.

II. Introductory Stage—

1. Creating set induction,
2. Introducing die lesson.

III. Presentation Stage—

The Presentation Stage has four sub stages. Each sub stage needs different type of teaching skills which are given below—

(a) Questioning Skills—

(i) Structuring Class Room Questions.

(ii) Fluency in asking questions.
(iii) Probing Questions.
(iv) Question-Delivery and Distribution.
(v) Higher Order Questions.
(vi) Divergent Questions
(vii) Responses management.

(b) Presentation Skills—
(i) Pacing of the lesson
(ii) Lecturing
(iii) Explaining
(iv) Illustrating with examples
(v) Discussing
(vi) Demonstrating.

(c) Aid Using Skills—
(i) Using Teaching Aids.
(ii) Using Black-board.
(iii) Stimulus Variation.
(iv) Silence and non-verbal cues.
(v) Reinforcement,

(d) Managerial Skills—
(i) Promoting Pupil participation.
(ii) Recognising Attending Behaviour.
(iii) Management of the class.

IV. Closing stage—

This stage includes the following skills—
(i) Achieving closure,
(ii) Planned Repetition.
(iii) Giving Assignments.
(iv) Evaluating tho pupils progress.
(v) Diagnosing pupil learning Difficulties and taking remedial measures.

Detail of a Few Skills

(1) Skill of Introducing the Lesson. Teaching a full lesson comprises a number of skills. One important skill of a lesson is how the lesson is introduced. Let us visualise the whole situation. The teacher enters the class and with his entry, the climate of the class undergoes change. The climate, in fact, depends upon how the teacher acts or reacts in the class in various situations. The teacher under training has taken very cautious and careful throughout while teaching in a class. First impression is the last impression remains very firmly in his mind. So he tries to improve his first impression.

The teacher puts some questions which relate to what has already been taught to the class. This is previous knowledge testing. While putting these questions; the teacher knowingly puts a problematic question at the end. Through the problematic question, the teacher introduces the lesson. Here the following things are important—

The Questions

(i) Previous knowledge test questions.
(ii) Problematic question.

The different questions need be correctly worded. They should serve the purpose for which they are put. When the purpose is to test the knowledge of the students which they have already acquired, the questions should aim at that and ultimately the questions should come out successfully as far as that

aim is concerned. The last question should create a problem for the learners, and that should lead to the topic which the teacher is to introduce. All this should happen in a natural way.

Usually in class room teaching, the putting of questions leading to the lesson takes place in a natural way but in the case of teacher trainees, it rather becomes very artificial. The reasons for this may be lack of confidence on the part of the teacher trainee, inexperienced teacher with regard to matter and methodology, the whole teaching learning situation being temporary, etc.

The skill of introducing the lesson can be acquired by the teacher rightly only if he is asked to work in natural settings. Let teaching practice be made a part of school teaching for six months or so. Let the teacher trainee be there in the school under the charge of the senior teachers and the Headmaster. The college supervisor may or may not be there but the gap between what is theorised in the teacher training programme and what goes on practically in the school must end. The teacher trainee should be in a free and appropriate type of teaching environment. Writing a lengthy lesson plan may not be there. But he should be able to leach well. He should be able to learn well how the lesson is to be introduced in as natural way as possible.

Let us understand it by taking up an example—

Suppose the teacher taught a few sums of arithmetic for calculating simple interest the previous day and some home assignment say question Nos. 1&2 from the book were also given to them. The teacher now enters the class and finds out whether they have cloned that assignment or not. Based on that assignment, the teacher puts questions such as—

In question No. 1, how did you find the simple interest? This question is put to two or three students. Then for second question solved at home, some questions are put *e.g.*

What is the Principal amount? (Rs. 100/-)
What is the rate of interest? (4%)
What is the time? (2 years)
How did you find the simple interest?
What is the formula?

$$\text{Simple interest} = \frac{P \times R \times T}{100}$$

Now, how will you find rate of interest if simple interest, amount and time are given ? this question will create some problem for some student while sonic others understand and can give the answer correctly. So this is how a topic can be introduced in a very natural way. This type of practice in all subjects can help the teacher trainee to acquire the skill of introducing the lesson.

(2) Skill of Questioning. Teaching is a bipolar process. In every lesson, questioning is one of the major devices used by a teacher, While teaching, the teacher goes on lecturing or explaining things verbally or with the help of some aids. It is all one sided affair. The teacher, therefore, puts questions to the class in order to involve the students fully in the process of teaching-learning. Through questioning, the teacher is able to provide stimuli to the learner.

In this regard **Colvin** said, "The efficiency of instruction is measured in a large degree by the nature of the questions that are asked and the care will which they are framed. No teacher of elementary or secondary subjects can succeed in his instruction that has not a fair mastery of the art of questioning". According to **Raymont**, "The acquisition of a good style of questioning may be laid down definitely as one of the essential ambitions of younger teacher. A good teacher must be a good questioner.

Questioning is an integral skill of a good lesson. In the process of questioning, the following things are important—

1. The question should be relevant and meaningful.
2. It should be pin-pointed.
3. It should aim at one answer.
4. The wording of the question should be accurate.
5. It should not suggest answer in any way.

Purposes behind questioning

In every class room situation, the questions are put keeping in view one purpose or the other. Usually the following component behaviours are involved—

1. Prompting. The teacher puts questions with the purpose of prompting the students for speaking. Here the questions serve the purpose of cues or hints. The question itself works in such a way that the students are able to react to it. The different words that constitute the questions act on the minds of the learners in such a way that they start reacting to it.

2. Seeking further information. Here the language of the questions is such which enables the persons to think more and give some more information's as compared to what has already been given. The learners have already given some responses but those are considered incomplete. For example the questions are: What else do you say? How can you make it clearer? etc. In this way the teacher tries to obtain farther information from the pupils.

3. Refocusing. Here the teacher puts that type of questions whereby he is able to refocus the attention of the students on some key point or some typical situation. Suppose the teacher has taught a topic on compound and mixture. Through some questions, who can test their understanding ability. In his mind, he might think of refocusing the attention of the students on some point. For the purpose, he puts that type of questions which help the students to refocus their attention on some fundamental points.

4. Redirection. Here the purpose of putting the questions to redirect the attention of the students so as to get the desired response. Suppose a student has given a wrong answer, the teacher puts the question redirecting him to think and speak on the right lines. Here the question makes the student reach a situation which compel shim to rethink and speak on the desired lines.

5. Increasing Critical Awareness—Another purpose of putting questions is to increase the critical awareness of the students. The teacher asks questions starting with 'how' and 'why'. That compels the students of think critically and give the possible correct answers.

The students have already given a correct response to the questions put by the teacher. But the teacher wants to enhance the critical ability of the students. So he asks further. Why is it so? How can you justify what you have said? A If these questions increase the critical awareness of the students.

Questioning is in fact, a very good skill in the process of teaching The teacher should acquire this skill through practice. Usually while putting questions, the following points should be kept in mind—

1. The teacher should put the questions to the whole class.
2. After putting the question, there should be a pause for a while may be of 3 to 5 seconds. Then only one of the students should be asked to give the answer.
3. The questions should be well distributed in the class.
4. The question should be worded in such a way so that it does not suggest any answer.
5. A question should be spoken once as far as possible; It should be repeated when the situation demands it. If a question is repeated, the same wording should be repeated.
6. The teacher should have a helping attitude always. By using encouraging words, he should try to elicit correct answer from the students.
7. The teacher should proceed to the next question only when the answer to the first question has been reached.

8. When a question is responded by the students, the teacher should tell immediately whether it is correct or not.

In case of a wrong answer by the student or students the teacher should not discourage them by passing sweeping statements. His attitude should be of helping type.

(3) Skill of Narration

In a class room situation, the teacher is the narrator of things. On his narration depends the class room climate? Only a good narrator is able to captivate the attention of the learners well. A successful teacher is he who has acquired well the art of narration. The teacher goes on narrating and the students are able to grasp it side by side.

'Narration is an art in itself which aims at presenting to the pupils through the medium of speech clear, vivid, interesting, ordered sequence of events in such a way that pupil's mind reconstruct these happenings and they live unimaginative through the experiences recounted either as spectators or possibly as participators."

A good narration makes the pupils understand the desired concept, phenomenon or principle. Here the teacher is expected to make use of relevant statements which are according to the mental level of the students. He should also inter-relate the statements. That will make learners follow everything systematically. While narrating, the teacher should use gestures. That will further make things simple and understandable for the learners.

During teaching, some teachers in some subjects like English use vocabulary items which are very difficult. They use the difficult vocabulary by way of a show of their knowledge. Ultimately it has a poor effect on the learners because it goes indigested by the learners. In order to be a successful narrator in the class room, the teacher should see to the following points—

1. He should use relevant and to the point statements. Vague and irrelevant things should be avoided.
2. He should see that everything is presented to the learners in as natural a manner as possible.
3. The continuity of thoughts in the presentation of statements should not be allowed to decrease.
4. Whatever is presented to the learners should be presented by coming at their mental level. That will help the learners to have a clear and full grasp of everything.

Integration of Teaching Skills

Integration of teaching skills may be defined as a process of selection, organisation and utilization of different teaching skills to form an effective pattern for realizing the specified instructional objectives in a given teaching learning situation.

According to **Jangira** and **Ajit Singh**: "Integration is the process through which a student teacher acquires the ability to perceive with precision the teaching situation in its entirety, select and organise the teaching skills in the desired sequence to form effective patterns for realising the specified instructional objectives and use them with case and fluency."

The teachers under training are given practice in the mastery of different skills through micro setting situation. Once they have learnt the different skills, then they are sent to the schools in real class room situations where they are required to teach. A question arises should those teachers be given training for the integration of different skills or not?

There are two groups of opinions who come forward with their arguments on the above said question. One group is of the opinion that some training for the integration of different skills is a must while the other group of thinkers opine that there is no need. They say that the teachers are able to integrate different skills automatically.

The decided opinion is that the different teaching skills have to be integrated by using a number of strategies which are explained here below—

1. Vicarious Integration. In this type of integration, the pupil teacher is sent from Micro-teaching setting to real class room situation directly. In between, no special training for the integration of various skills is given to him. He is able to integrate the different skills in his own way as per his own desires and requirements.

2. Summative Strategy. After the learner teacher has mastered a few skills of teaching in Micro-teaching setting, he is provided with another micro-teaching setting where he learns the integration of skills already learnt by him. The duration of time is increased for this type of lesson. If the P.T. has learnt two skills (S_1, and S_2), then he will learn the integration of those two skills. If he has learnt four skills ($S_1 + S_2 + S_3 + S_4$), he will integrate those four skills ($S_1 + S_2 + S_3 + S_4$). The training for the integration of skills is provided in a controlled setting. Increase in the length of the lesson will require increase in the duration of time. Each lesson is observed and feedback is provided till the learner teacher is able to have a reasonable mastery in the integration of skills. Thus the pupil teacher is sent to the real class situation in due course of time.

3. Additive Strategy—In this strategy, the pupil teacher is given training for the mastery of two skills. Then he learns integration of those two skills. .After this, training for the third skill is given and then he learns integration of the third skill into the two already acquired. Thus he goes on adding the newly learnt skill into the ones already learnt by him. Here the time duration is increased as the length of the lesson increases.

Example. Suppose the pupil teacher learnt the skill of questioning and skill of reinforcement. He is then given training for the integration of those two skills. Thereafter he learns the third skill, by stimulus variation and integrates that in the two already learnt.

4. Cluster Strategy. Cluster means a chunk or a group. The teacher combines together let us suppose two skills S_1 and S_2 in one lesson. Then he learns in another lesson say three skills S_3, S_4, S_5. After this he combines the above two clusters of five skills ($S_1 + S_2 + S_3 + S_6 + S_7$) in a single lesson. In this way, he is learning the integration of skills.

In one cluster at a time, he may choose any two or three skills as per his liking. In the second cluster again he can pick up any skill and any number of skills. Whatever he learns in two clusters, and then he combines the two and learns integration.

5. Diode Strategy. According to diode strategy, the pupil teacher teams the integration of two skills say S_1 and S_2. Then he learns the other two skills say S_3 and S_4. Thus all the skills are learnt in pairs. Then they are integrated. This technique is actually in between the summative type and the additive type.

Mastery over the skills is given in controlled setting. The learner teacher takes up two skills at a time as per his liking and convenience. After learning the skills in pairs, he learns to integrate all the pairs. The teacher is provided with real class room teaching situation after he has learnt the skills and their integration.

6. Subsumption Strategy. Teaching a class involves a complex skill. That can be analysed into simpler component skills. The component skills concerning some class are arranged in a hierarchical order according to the levels of their complexity. One main skill and its components are taken up and practice given to reach some level of competency say A. Then the other main skill and its component skills are taken up by arranging them in order of complexity. Acquisition of those skills is given so as to reach level of competency say B and so on.

7. Subsumption-Additive Strategy. This strategy is eclectic in approach. It is a combination of strategies No. 3 and 6. In strategy number 3. there is horizontal integration of skills whereas a in number 6, there is vertical integration of skills. Out of the different skills, Questioning. Motivating, Explaining are functional and they are horizontal while component skills fall in the category of vertic integration.

Micro-teaching lts Indian Model

Ever since micro-teaching was introduced in India, a number of research projects were undertaken. Efforts made at CASE, Baroda, Department of Teacher Education. NCERT Delhi and at Chandigarh yield Indian Model of Micro-teaching. The main features of that model are—

(a) Unlike Western World were films, video or closed circuit.

Television are used, in Indian model, presently skill and feed back is done through written material supplemented by lectures, demonstration and discussion. As compared to the Western Model, Indian model is a low technology.

(b) In Indian model, the observers are the living persons *i.e.* peers supervisors.

(c) It is less costly because high priced gadgets are not used.

(d) In Indian model, peers act as students. Real students are not used; Researches conducted on this point (**Dass** 1979) have shown that simulated Micro-teaching is as effective as Micro-teaching with real pupils.

(e) Indian model is flexible and it can be used successfully in any type of situations that prevail in teacher training colleges.

(f) Duration of micro cycle can be varied as per need and requirement of the learners.

Types of pupils for Micro-Class

In a micro-class, there can be real pupils or peers acting as pupils. In the basic Stanford model, the micro-class consisted of real pupils. In many colleges of education in U.K., real pupils still constitute a micro class.

With Real Students

Advantages

1. Situation Is more real. Training of skill naturally is more meaningful.

Disadvantages

1. The school students hardly learn anything.
2. There is disturbance to the setting of the school.

Students continued to compare the effectiveness of micro-teaching setting with real pupils and peers reveal that both the settings are equally effective in developing general teaching competence in student teacher (**Das**, et al 1977 and 1979).

In the light of the research studies made, peers are used as pupils in the Micro-teaching model developed by NCERT. In this model, a pupil teacher performs three roles turn by turn a teacher, a supervisor and a student.

In the Indian model of micro-teaching developed by the Deptt. of Teacher Education, NCERT, peers (student teachers) constitute the micro class. Studies have been conducted to determine the value of pupil's feedback. **Tuckman** and **Oliver** (1268) compared the relative efficacy of four feedback conditions pupil feedback, suprvisor's feedback, both pupil and supervisor's feeback, and no feedback. Their findings were that both the treatments involving pupil feedback produced significantly greater change than the other two conditions. **Morrison** and **Melntyre** (1973) however, suggest that pupil feedback can be effective only "When the same pupils are involved in micro-teaching over considerable period and are trained in the use of rating scales or other instruments." Thus pupils feed back in NCCRT model where peers act as pupils is likely to be more effective as they are already trained in observation.

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Chapter 5

AUDIO-VISUAL AIDS

Audio-Visual Aids

Introduction

Every good teacher' tries to improve his teaching and thereby wishes to come out as a better teacher. For this purpose, he makes use of some aids. A Geography teacher makes use of a globe or a map, a science teacher performs some experiment in the class, a language teacher uses tape recorder-all this to make teaching-learning process more effective. Undoubtedly, aids are those instructional devices which are used in the class room to encourage learning and thereby make it easier and interesting. The material like charts, maps, models, concrete objects, film strips, projectors radio, television etc. which help a teacher in a good communication, healthy class room interaction and effective realization of the teaching objectives may be called aids in the field of teaching-learning. "It is easier to believe what you see than what you hear; but if you both see and hear, then you can understand more readily and retain more lastingly". ***—Albert Duret***

Meaning of Audio-Visual Aids

Teaching aids which affect our organs of audibility and sight are called "Audio-Visual Aids, Good's Dictionary of Education speaks of audio-visual aids as "Anything by means of which learning process may be encouraged or carried on through the sense of hearing or sense of sight."

Carter V. Good, "Audio Visual aids are those aids which help in completing the triangular process of learning *i.e.* motivation, classification and stimulation."

According to **Burton,** "Audio-Visuals aids are those sensory objects or images which initiate or stimulateand reinforce learning."

Edgar Dale, "Audio Visual aids are those devices by the use of which communication of ideas between persons and groups in various teaching and training situations is helped. These are also termed as multisensory materials."

According to **Gandhiji**, True education of the intellect can only come through a proper exercise and training of bodily organs-hands, feet, eyes, ears and nose."

In the words of **Mckown** and **Roberts**, "Audio-visual aids are supplementary devices by which the teacher, through the utilization of more than one sensory channel keeps to clarify, establish and correlate concepts, interpretations and appreciations."

Concerning audio-visual aids Kothari Education Commission (1964-66) said, "The supply of teaching aids to every school is essential for the improvement of the quality of teaching. It should indeed bring about an educational revolution in the country".

National Policy on Education (1986) has recommended the use of teaching aids, especially improvised aids, to make teaching-learning more effective and realistic.

Types of Aids

A. Traditional Categorization

Traditional categorization of aids has been made depending upon the senses involved. It has the following three categories—

(1) Visual Aids. The aids which use sense of vision are called visual aids. For example actual objects, models, pictures, charts, maps, flash cards, flannel board. Bulletin Board, Chalk Board, Pocket board, slides, epidiascope, over head projector, etc.

(2) Audio Aids. The aids involving the sense of hearing are called audio aids. For example, radio, tape-recorder, record player, lingusaphond, etc.

(3) Audio Visual Aids. The aids which involve the sense of vision as well as hearing are called audio-visual aids. The aids which involve the sense of vision as well hearing are called audiovisual aids. *For example*, television, cinema, film projector, film strips, etc,

B. Modern Categorization

The modern age of science and technology has the material of construction as the bases for the categorization of aids.

The following are the two main categories of aids—

1. Hardware Aids—The aids made up of hard materials are railed hardware aids. They are further divided into two parts—

(a) Simple Hardware Aids. The aids made up of hard material but they involve simple mechanism are called simple hardware aids *For example*, Magic Lantern, Epidiascope, Overhead Projector, etc.

(b) Complex Hardware Aids, Aids made up of hard material1 but they involve complex mechanism are called Complex Hardware aids. *For example*, radio, television, tape recorder, computer, linguaphone.

2. Software Aids—The word 'Software' seems to be simple as compared to hardware. But actually it is the software material in the form of input which helps for operating the system of hardware. This type of aids are easy to handle. Thus the material like slides, film strips etc. feed the hardware and then that works. The other visual aids such as models, charts, maps, chalk board, flannel board, etc., also come under this category.

C. Another categorization of A.V. Aids is as under

1. Projected Aids. Aids which help in their projection on the screen are called projected aids. *For example*, film strips, slides, film projector, slide projector, epidiascope, etc.
2. Non-Projected Aids. Aids which do not help in their projection on the screen are called non-projected aids. *For example*, chalk-board, charts, actual objects, models, radio, tape-recorder etc.

Advantages of Audio-Visual Aids

Audio Visual aids are of immense value in the teaching-learning process. They make the process lively and interesting and hence make it effective and belter. According to Kothari Education Commission (1964-66). "The supply of teaching aids to every school is essential for the improvement of the quality of teaching. It would indeed bring about an educational, revolution in the country." Just lectures or verbalism of the teacher make the class room dull and mechanical. Every child is interested in seeing concrete things, He wants to handle, manipulate and the teacher should provide situations so as to satisfy his curiosity of doing things. Learning through senses is better and more permanent than just mechanical learning. Out of the five senses it is through hearing and seeing that 86% knowledge is gained. The audio visual aids, therefore, have great importance both for the teachers and the learners. In this context *Rousseau* says, "Give your scholar no verbal lessons, he should be taught by experiences only."

In the words of *Edgar Dale*, "Because audio visual materials supply concrete bases for conceptual thinking, they give rise to meaningful concepts enriched by meaningful association, hence they offer

the best antidote for the disease of verbalism. The great educationist and philosopher *Froebel* also advises: "Our lessons ought to start from the concrete and end in the abstract."

Comenios said, "The foundation of all learning consists in representing clearly to the senses, sensible objects so that they can be appreciated easily."

The audio visual aids have many advantages which are explained here below—

1. **Helpful in creating Interest.** The use of different aids by the teacher while teaching makes the teaching-learning process more interesting. Sometimes the teacher makes use of charts, film strips, epidiascope, film projector and sometimes be just performs an experiment in the class. All this makes the teaching-learning process more interesting,
2. Just lectures by the teacher is too much of verbalism. But the use of chalks and black board reduces verbalism. The use of other type of aids further reduces verbalism, in the class. Naturally the learners will find it less loading on their minds. The teacher is also able to save energy.
3. The use of audio-visual aids gives reality to the learning situation, Thus by seeing a film show exhibiting the life of the Tundras and learn it more effectively in three hours than by reading many books in months together.
4. It gives to the learning situation. For example, we want to know about the Mughals. It provides vividness parallel to which is difficult by the study of books.
5. It gives clarity to the learning situation. For example, the film shows of 'A Table of Two Cities' gives a clear picture of the French Revolution. Anything equal to this is not possible by the study of books.
6. The aids motivate the child and arouse his feelings of curiosity. Thus motivation keeps the child fully absorbed and he tries to learn more and more.
7. They make the abstract ideas concrete and thus help in making learning more effective. It results into more clarity and better understanding.
8. The different type of aids when used successfully in the class room provides variety in the class room situations. Variety in the instructional procedures helps the learners to be more alternative.
9. Meet the individual differences requirements. There are individual differences among the learners. Some are ear minded who are able to learn by listening. Some are able to learn through visual demonstrations while others learn better through doing. The different type of aids, thus, help in different ways for meeting out the varied requirements of the students.
10. Good substitute for Direct Experiences. Effective teaching requires direct experiences for the learners. It is always not possible to take the children out for direct experiences. Sometimes the object is too far e.g. Elephanta caves. A film or a chart showing those caves will serve the purpose. In other case, it is not possible to bring the object in the class. In those situations, pictures or charts serve the purpose for example, elephant, lion, Jackal etc. cannot be brought in the class room. Their models or pictures or charts can be used for teaching purposes. The aids are good substitutes for the real objects as they make learning equally meaningful.
11. Help in developing various skills. The use of audio-visual aids help in the development of various skills among the students. They learn how to draw a diagram of the topic, learn how to handle the apparatus and in case where they face some problems in the conduct of an experiment, they apply their mind to solve the problem.

The teacher should not be over ambitious in the use of aids during teaching. Use of aids just for the sake of aid does not help much. Their usefulness must be determined beforehand. In the words of me known and Roberts: "Audio-Visual aids wisely selected and properly used, arouse and develop intense and beneficial interest and so motivate the pupils to learning. And properly motivated learning

need improved attitude, permanency of impression and rich experience and ultimately more wholesome living," Thus we find that the different type of aids do serve some good purpose but they are not everything for a successful teaching. In this regard, Francis **W. Noe** says: Good instruction is foundation of any education programme. Audio visual aids are component part of that foundation."

Characteristics of Good Aids

A few characteristics of good an aids are enlisted here below—

1. They are large enough to be seen by the students for whom they are used.
2. They are meaningful and they always stand to serve a useful purpose.
3. They are upto the mark and up-to-dale in every respect.
4. They are simple, cheap and may be improvised. They are not very costly
5. They are handy and easily portable.
6. They are accurate.
7. They are realistic.
8. They are according to the mental level of the learners.

. Their purpose may be informative but it is not just entertainment.

10. They motivate the learners. They capture the attention of the pupils,
11. They help in the realization of stipulated learning objectives.
12. They are really very useful and can be used in many lessons and at different class levels.

Precautions for Using the Different Aids

The use of audio visual aids in teaching-learning process has multifarious values. They make the process interesting and effective. The variety of media now available to the teacher provides him powerful supporting material to enrich teaching and to strengthen learning. But the wrong use of aids will certainly invite adverse criticism. Some precautions which are given below must be used while selecting and using the aids:

1. The students should be fully acquainted with the aids. If possible, their help in the preparation of aids should be sought.
2. The aids should be fully checked up before using them in the class. The aid any way spoiled discourages the students. A spoiled picture, a broken model or a cracked slide not only makes the students dis-interested, it rather discourages them.
3. Use of blackboard is good for teaching. But it must be ascertained that whatever is written or sketched on the black board should be correct.
4. Aid should not be used just for the sake of aid.
5. In a lesson, too many aids should not be used.
6. While using some special type of aids like radio, television, the students should be mentally prepared for it. They may be given a briefed escription of the programme.
7. It should be used at the right time making it meaningful for the subject and the topic.
8. Aid used should be in proper condition, worthy of showing in the class room situation. It should not be spoiled one.
9. While giving instructions and showing some aid, the teacher should not stand in front of it
10. Aids should not be allowed to become masters in the teaching-learning process. They should remain as servants in the hands of the teacher.

I. Software Aids

A few software aids are described here below—

(1) Actual Objects. The small children, especially at the early stages, need to be taught through direct experiences. They should be shown the actual things. That way their interest is developed and they become fully motivated for learning. The teacher who teaches a class of beginners should see to

the linkings and interests of the students. Visits to places like park, post office, railway station, fruit market, clock tower etc. should become routine of their curriculum. As far as possible, all teaching to them should come out of direct experiences or firsthand information. Suppose the teacher wants to teach about the camel, the horse, the dog, the elephant etc., it would be better if the students are taken to a zoo. In case, a visit to some zoo is not possible, actual animals in that village or city may be shown.

There are a large number of things about which the teacher is to teach. The teacher, let us suppose, is to deal with objects-pen, pencil, book, note-book, different colours, table, chair, bench, knife, comb, scissors etc. The teacher should make efforts so that the learners are able to see all these objects. For this purpose, it is suggested that the teacher should carry a bag with him who contains many objects about which the teacher is to teach. He can show those objects to the students and teach about them. Thus the students will understand those words very thoroughly.

(2) Models—A model is usually the miniature structure of the original object. It shows almost all the details of the original thing. It may be of the same size or larger or, smaller than the thing it represents. It is a three dimensional recognizable imitation of an object. As compared to a picture or a chart which are two dimensional, the model is three dimensional. It can be seen from different angles and so it is generally more interesting and instructive. They are used a great deal in the teaching of science. They can also to be used for teaching other subjects.

The models are of the following types—

(i) Scale Models. This type of models represent the things through exactness of scale. In certain learning situations, we need correct representation of things, *For example*, the students of engineering are to be shown Bhakra Dam. For them, scale model will be needed.

(ii) Simplified Models—This type of models show roughly the external form of object. For example, models of animals, birds etc. are all simplified models. Thus the teacher shows to the small children the models of elephant, parrot, horse, etc.

(iii) Cross-Sectioal Models or Cutaway Models. This type of models show the interior side of the object along with the exterior side. This type is used for teaching the senior students. For example, model of an aeroplane is shown to the students of military science. Both the exterior and the interior vision of the aeroplane are needed to be shown to these learners.

(3) Mock-ups. Mock-ups is a special form of model. It may not be similar to the original in appearance; it is an imitation of a thing in certain aspects only. Here some element of original reality is highlighted to make it more meaningful to the students. Thus we can tell the students about trains, aeroplanes, ships etc. by making their mock-ups with card board. In technical institutions, mock-ups are often used for the purpose of training.

Utility in the Teaching-learning Process

In the class room teaching, many times it is not possible to show to the learners the actual objects. They may be too big, they may be too afar, they may be dangerous etc. So in those situations, their models according to the requirements of the learners are brought and shown to the learners. For example, the students are to be taught about a dam, it may not be possible to take them to the dam for firsthand experience, in that case its model is shown. Second situation the students are to be taught about the steel projects at Durgapur and Bhilai, it may not be possible to take them so afar, their models serve the purpose of teaching. Third situation, the students are to be taught about the lion, snake, which are dangerous animals, their models will be used for teaching. Fourth situation : certain things may be invisible for example, the interior parts of an eye. In such cases, cutaway model is used to make the learners fully understand it.

(4) Simple Book Format Modules—A module is a standard way of planning in which the whole class instructions are put together in a precise and concise form. The whole instructional programme is

divided into some meaningful units which are called the modular units. The module is a complete unit in itself. It serves the purpose of providing desirable learning experiences to the learners. It is a sort of individualized learning because each learner can go through it at his own pace. Moreover, a self-evaluation test for the learner is also provided there at the end.

Different forms of modules arc prepared. They can be in the form of a simple book or in the form of slides, tapes, pictures etc. The simple book format module includes set instructional objectives, the broad lines of the content, the presentation scheme of the pattern and the performance assessment. The modules can be designed for individual or group study or for both.

In one module, there are a number of units called capsules. Both capsule has pre-determined Expected Behavioural Outcomes (B.B.O's). At the end of each capsule, a self evaluation test and its key are given which provide immediate reinforcement to the learner.

While preparing a module, the following points are kept in mind—

1. It specifies the instructional objectives clearly.
2. It is in accordance with the subject-matter which is dealt with in it.
3. It caters to the needs and requirements of learners.
4. It fully takes care of the teaching learning environment.
5. Total curriculum is kept in view.
6. Total time available during the session and also the duration of time in each period are fully considered.
7. The size of the class for which the module is meant, is also considered.
8. Bibliography for extra reading is also suggested,

(5) Chalk Board. The chalk board is one of the oldest and easily available software aids in the schools. No doubt, a lot of progress has been made in various fields on account of advancement by Science and technology; it is still a popular aid in the instructional process. If this aid is used properly, it becomes the most valuable device for making instructions concrete and comprehensive. The chalkboards may be of hanged type, roller type, fixed type etc. Usually we have fixed boards in the class rooms. In subjects where too much in continuation is to be written, roller board is recommended. In ordinary situations, fixed black board is all right. What type of colouring of the chalk board is more suitable? The experiments have proved that (he use of white chalks and black surface are more suitable. We may have green boards or blue boards.

How to use the chalk board?

1. While writing on the chalk board, the teacher should start from the top left hand corner and continue writing till the lower end is reached. The systematic and uniform writing captures the attention of the students.
2. Whatever is written on the chalk board, it should be correct.
3. Whenever a new lesson/subject is started, it should be rubbed off and start afresh.
4. Lengthy drawings and sketches should be avoided. That will obstruct teachers attention to the class for a longer time.
5. While writing, the teacher should stand aside on the left. His own standing before the chalk board should not be any obstruction for the learners.
6. Sometimes a part of the chalk board is not visible to the class because of the reflection of light. That should not be used by the teacher.
7. The style of writing on the chalk board should be correct. The writing on the board must be reasonably good.

Advantages of chalk board

1. If a teacher goes on speaking in the class finishing up the syllabus, his teaching becomes dull

and monotonous. Many things may not be properly understood by the learners. The use of chalk board adds variety to the teaching on one side, and on the other side it makes the lesson more clear to the students.

2. Some sketches or diagrams can be drawn on the chalk board. While teaching science subjects, same diagrams or sketches have to be drawn on the chalk-board.
3. In a language period, spellings of the words when written on the chalk board simplify things.
4. A teacher who is an expert in chalk board work is able to work wonders in teaching. He need not use a chart or picture. He can draw these on a roller chalk board and use the same in teaching. Thus it is economical in many ways.
5. While teaching, the teacher often goes on writing the summary of the lesson on the chalk board. It helps him in quick revision of the whole lesson in hand.
6. It is a very flexible type of aid. The teacher may use it any way he likes according to his interest and liking. Sometimes when the teacher is not in a mood to write anything on the chalk board, that does not matter. He can very easily avoid its usage. The total control of writing on the chalk board is in the hands of the teacher. .
7. A chalk board is the heart and the soul of teaching Mathematics. The teacher has to use it for solving the sums.

(6) Charts. A chart is another software aid used quite frequently in the instructional process. It is defined as "a visual symbol summarizing or comparing or contrasting or performing other helpful services in explaining subject matter." A Chart is a commonly used, aid very popular with teachers under training though actual class room teachers use it rarely.

Charts are of various types. Each one of them meets a specific need. Let us now see the different type of charts and their utility in the teaching-learning process.

(i) Table chart. Table chart means a chart on which some table is given. It may have a list of rulers and battles in a chronological order. *For example*, a table chart may have the minimum and maximum temperature of a City/region for the last 10 days. We can prepare a table chart of tenses for teaching English.

(ii) Tree Chart. As the name indicates, we have a trunk of the tree and its branches. In the same way, we can have charts showing the growth of a thing. This type of charts are quite useful in the teaching of science and social studies.

(iii) Flow Chart. This type of chart is shown by rectangles, circles, lines, arrows, colours etc. to represent the structure of a big institution. Thus control of education in Haryana State can be depicted as—

Control of Education
Minister of Education
Education Commissioner

Director of Higher Edu.		Director (Sec. Education)		Director (Primary Education)	
Joint Director		Joint Director			
Deputy Director		Deputy Director			
ADPJ	ADPI	ADP1	ADPI	ADPI	ADPI

(iv) Comparison or Contrast Chart. Any type of comparison or contrast between two persons, places, countries etc, may be depicted on a chart by using columns. Thus, we may have a comparison of illiterate people in different states of India. We may have such a chart of comparison showing maximum and minimum temperature of big cities. This type of charts make the process of teaching-learning easy and more effective—

Specimen		Dated
Name of City	**Max. Temperature**	**Minimum Temperature**
Delhi	40.6	20,4
Bombay	42.4	21.2
Calcutta	43.3	21,6
Madras	44.4	22.0

(v) Pupil Achievements Chart. This type of charts give comprehensive and detailed information of a student, A cumulative record card is an example of this type of charts.

(vi) Isotype Charts—In this type of charts, symbols are used for the thing to be represented. The symbols are easy and can be understood easily. We can use this type of charts for the younger children who are unable to understand the graphs.

(vii) Pie Charts—In a pie chart, a circle is drawn which represents the whole. Then the circle is divided into segments where each segment represents a percentage of the whole. Many things can be taught with the help of a pie chart. Thus we can teach the students the percentage of various gases in the atmosphere,

(7) Pictures. Pictures are one of the most common types of visual aids. Here the generally accepted meaning of picture is ready made or machine made pictures. We can have these from some old magazine or purchase from the market. According to the old Chinese saying, "A picture is worth ten thousand words." It means that the picture can serve the purpose often thousand words. The idea is that if we explain something for say 15 or 20 minutes to the students, it can be forgotten. But anything visualised through a picture has its impact for a longer time. The learners are able to retain it in their minds for a longer time.

Through pictures, we can illustrate a story, some accident, an activity a sight, a place etc. Now the question arises: Can we use a bazar made picture for teaming a class? Yes, why not? Our purpose is teaching and for this we can use readymade pictures.

Pictures may be used in the class room situations where actual objects are not available or they are beyond the reach of the teacher due to one reason or the other. While using pictures, the teacher should ensure that they really serve some purpose. Suppose the teacher wants to teach about the Headmaster's office or punishment being given to the students in these cases actual situations or places should be shown. Bringing pictures for these things will not help. It rather dilutes teaching. So pictures for the sake of pictures should not be used.

(8) Flash Cards—Flash cards are pieces of card board or hard paper on which a word or words are written or some picture is drawn. They can be shown to the students at any time. Moreover, they, can be shown for less or more time depending upon the teacher. They can be successfully used for a number of purposes e.g.,

(a) Word Recognition—A flash card bearing a word or a sentence may be shown to a group of students or to some individual students. The Learners to recognise whatever is written there.

(b) Team Competitions—Class may be divided into two teams. The flash cards may be shown to the groups one by one. They will try to read out as quickly as possible.

(c) Training in Speaking—Some questions may be written on the flash cards. The cards are shown to the student's one by one. They are asked to speak out the answer.

(d) Teaching writing they can also be used in teaching writing. By writing beautifully on them, they can also be used for improving the handwriting of the students.

(e) Match Cards. Flash cards can serve the purpose of match cards. In match cards, we have flash cards in pairs. They are displayed on the flannel board. The students watch them carefully. Then they are asked to match them rightly *e.g.*, we have different flash cards for

the words book, child, watch, woman, books, children, watches, women etc. They are in mixed up. Then the students are asked to match these flash cards, may be according to the number/plurals or genders etc.

(f) Order Cards—Flash cards may carry words or expressions which mean some sort of order. These flash cards are shown to the students one by one and they may be asked to carry out the orders. *For example*, we have flash cards with the words or expressions, stand, go but, come in, come here, go to the black board, bring chalks, call the peon etc. These are shown to the students and they act accordingly.

(9) Flannel Board (Felt Board)—It is a wooden board on which flannel is fixed. The different flash cards on the back of which flannel is fixed, can be placed on the flannel board. It is really a very useful, versatile and exciting aid.

The flannel board is not just an aid itself. It is, in fact, that type of aid which helps the other aids. A few other aids can be adapted to be used with the flannel board. In the hands of a creative and hard working teacher, it can probably be the most useful and exciting aid available next to blackboard, it can be used for teaching spellings, reading of English, formation of sentences, picture composition, etc.

(10) Bulletin Board—It is a board of soft wood or cork. It is used for pasting papers, pictures of paintings. It displays announcements, records, news items, newspaper cuttings, illustration, etc.

This type of board helps in popularising any idea. The board is generally placed at some important place in corridors or in the class room. The bulletin board is useful not only for teaching-learning purposes but it also brightens the look of the school.

(11) Pocket Board. It is wooden board on which pockets are made with about 11/2 inch wide cloth wrapped from one corner to the other parallel to the base of the board. The pockets so formed are meant for holding the flash cards. Anything written on the Hash cards may be hung in the pockets of the board and then removed by the teacher at any time.

If we want to use flash cards in the pocket board there is no need of fixing up flannel at the back of the flash card.

(12) Programmed Learning Packages—The programmed Packages fall under the category of software aids. They can be fed into hardware and the learners can derive benefits out of it.

In programmed Learning Packages the teacher prepares learning material in the form of packages. Each package contains programmed material of one subject or the other and it is related to any pocket or sub-pocket of that subject. The package is a complete unit in itself. For preparing that package the writer may use any type of style *i.e.* linear, branching or mathetics as per requirements of the students.

Suppose the teacher feels that in teaching English language the students find problems in the learning of Direct and Indirect form of narration. So the teacher or the expert of programmed writing prepares a package of Auto Instruction Material suitable for the type of students who need that subject matter. The writer prepares the whole material which is complete in it and is just like one self sufficient packet. The learners use this type of learning packets as per their convenience where they can go on with their own pace of learning and with full freedom. Naturally this type of packages will help the student wonderfully in the improvement of their typical problems pertaining to different subjects.

The programmed learning packages can be used with the help teaching machines at the higher levels, the programmed learning packages can be translated into the language of the computer and that may become useful type of Computer Assisted Instruction. Each programmed learning package consists of—

(a) **Modules and Teaching-Learning units.** Modules are prepared on the contents to be taught. Batch module is broken into some convenient units. Each unit has performance objectives and diagnostic tests. The material is given in the form of programmed type.

(b) Teacher directions are given in detail which shows clearly at what stage, the learners are to do what.
(c) Instructions to the students are made available when the same in published form are not there.
(d) A performance test is given to the learners as soon as they have completed a unit of learning.

Advantage

1. Programmed learning packages help all type of students to learn things better and according to their own convenience.
2. The needs and requirements of different type of students *i.e.* average, gifted, slow learners etc. are satisfied.
3. Learning packages once prepared become a sort of asset and then they can be used at any place and at any time.
4. There is self learning as well as self evaluation. They help the students to develop the self study which ultimately make the students well disciplined.

Limitations

The programmed learning packages have certain limitations which are enlisted below—

1. In certain areas, the really good programmed learning packages may not be available.
2. In Indian situation, the programmed learning packages seem to be a costly affair.
3. Being based on the principle of self learning, they may make some students idle and lethargic.
4. Preparing suitable type of learning packages for different type of students is cumbersome.

(13) Slides or Transparencies—A slide is usually a piece of film in a frame for passing strong light through or to show a picture on a surface. It may be a small piece of thin glass to put an object on for seeing under a microscope. It may be made of cellulose ascetate film, translucent paper, glass etc. The slide is mounted individually in a projector and strong light is passed through it. The picture or diagram or image on this it appears on to the screen from where it can be seen by the learners.

The slides serve many useful purposes in the class-room situations. Sometimes a slide is prepared for some difficult diagram or picture appearing in the book. The different type of slides serves many useful purposes. According to **Hass** and **Packer** (1954), the following are the advantages of slides:

(i) Attract attention (ii) Arouse interest (iii) Assist lesson development (iv) Test students understanding (v) Review instruction (vi) Present next lesson or subject (vii) Facilitate student teacher participation.

A few other advantages are

(a) Details of the subjects or the diagram can be shown very nicely with the help of slides of larger size.
(b) They can be procured easily and at low cost.
(c) Their handling and storing is not difficult.

From where to get slide?

There are different sources where readymade slides are available and they can be borrowed. Slides for purchasing purposes are also available in the markets of big cities. The slides can be borrowed from the national museum, national libraries, N.C.E.R.T. etc.

How to Make Slides

Preparation of a simple slide is not a difficult job. Every teacher should learn how to prepare a slide for him. Here below is given the outline for preparing a simple slide.

1. **At first.** the base material for preparing the slide is selected. That basic material can be a plain glass, etched glass or translucent paper.

2. **A rough lay out is laid down.** The basic illustration is sketched and letters or other symbols are marked.
3. The glass or cellulose acetate on which slide is to be prepared is placed over the original sketch or lay out. But using a drawing pen or marked pencil, the figure is traced out.
4. For better illustration, colour-may be added or some art work may be done.
5. Then the transparent sheet is attached to the back of a card board mount with the help of pressure sensitive tape.

Photographic Slides

The photographic slides can be, produced with the help of a suitable camera where photographs of the objects or the diagrams are taken. In this age of science and technology the photographic slides are ready within a few minutes.

II. Hardware Aids

(1) Radio. Radio is a very common type of hardware aid. it is an unparallel vehicle for mass communication. It is now recognised as an education medium that reaches millions of interested listeners. Its use for educational purposes was tested in English in 1924. Later on Canada and Sweden, tried it in 1926 followed by the experiments made by Switzerland in 1930 and by India in 1930, with the result many educational institutions of the West started using radio for instruction purposes though in India, the number of such institutions was limited".

Fig. Radio

The radio programmes for the school children are very common now with A.I.R. and B.B.C Radio programmes for the schools became popular during the period from 1950's to 1970's. A large number of city and rural schools started using radio in class room teaching. Generally the radio is installed in the library or common .room of the- school and it is under the charge of one of the teachers.

Highlighting the importance of the radio George Waston says: "Radio is something to be placed on top of education. Radio is not an addition to radio is education Commenting upon the use of radio as an instruction aid, **R. G. Raynolds** writes: "Radio is the most significant medium for education. As a supplement to class room teaching its possibilities are almost unlimited. Its teaching possibilities are not confined to the five or six hours of the school day. It is available from early morning till long after midnight. By utilising the rich educational and cultural offerings of the radio, children and adults in communities however remote, have accuses to the best of the world's stores of knowledge and art. Some day its use as an educational instrument will be as common place as text books and black boards.

Types of Programmes

Many types of radio programmes are broadcast such as children's programmes. Women's programmes, religious, agricultural and commercial programmes, variety show, drama, music, quiz contest programmes etc. Besides, there are educational programmes on various topics indifferent subjects. Generally there are radio lessons for the following subjects—

Science

There are talks on scientific inventions and interviews with the leading scientists and research scholars. Sometimes new developments in various branches of-science are highlighted.

Languages

The learners can improve their pronunciation of English by attending radio programmmes broadcast in English medium. Sometimes, we have a lesson on teaching of a poem. Presenting dramas and stories of famous writers is another feature of the radio.

Social Studies

We have dramatization of historical events, acquaintance with the lives of great men, etc.

Music

National songs and other interesting musical items can be heard on the radio. This type of programmes arouses feelings of national unity.

A Radio Lesson

The radio broadcast can be used—

(i) To introduce a new lesson.
(ii) To present a complete lesson.
(iii) To review the previous lesson.
(iv) To solve major problems occurring in a lesson.

Steps, to be Followed

I. Preparation The teacher should find out before hand from different sources about the lesson to be broadcast, its timing, any accessories if needed. He should tell the students how they will be benefited by the lesson. Then the different aids needed for the lesson should be got prepared-preferably with the help of the students. Seating arrangements of the students be made in a circle or semi-circle. The radio should be placed facing the students at a nearby distance. The teacher must make sure the working of the radio, the availability of electricity. If possible, provision of a generator should be there

Before the actual broadcast, everyone should be seated properly. The different aids are displayed as per their utility in the class room situation.

II. Presentation of Broadcast. The radio lesson being broadcast is presented to the class. The teacher takes down a few points on his piece of paper/or note book side by side. The students may also write down some hints or points in their note-books side by side.

In fact, the students are asked before hand to take down any query, doubt, question on their note-books for which they can consult the teacher later on.

III. Discussion. Immediately after the broad cast, the teacher discusses the lesson thoroughly with the students. Their doubts are clarified and questions are answered. Whatever problems about the lesson are raised by the students, their solutions are given by the teacher. The outcomes of the lesson are highlighted.

IV. Follow Up. As a follow up, the teacher may give the students some working assignment; hold an oral test to find out their understanding of the lesson.

In case some suggestions are put forth by anyone from the class, attention is paid to the same.

Advantages of Radio Lessons

1. Radio brings subject experts and other great men in the class room. Lectures, talks and addresses of important personalities from any corner of the world can be heard on the A.I.R.
2. A single broad-cast can be heard and understood by a large number of students; it a time. The cost per capita of the listeners is very small and is almost negligible.
3. The class room instructions are supplemented by radio programmes. The routine and monotonous type of class room environment is ended.
4. The general knowledge of the pupils is widened. They are able to have extensive knowledge of many things.
5. The radio becomes a very important medium for leisure time activities.
6. The radio lesson helps the students in the improvement of pronunciation, speech-and language.
7. It develops critical thinking of the students.

8. The voice of the speaker on the radio is heard by the children and they are attracted towards it. lt is really very impressive and life like for them.

To sum up, **Fredric Wittis** says, "I like to think of education by radio as a timely, vital, dramatic thing, a system of learning or acquiring more information, a means of widening one's horizon or enriching one's life and breaking down prejudices through inspiration and not prescription, an education by desire and not by discipline ; a pattern of swiftly changing pictures, events with keen interpretations, not statistics and formulas ; a moving panorama of the world in which we live right now, while we are living in it not a dreary drill of text books and tests. In short, I feel that one of the broadcasting's most useful contribution to education and one of its responsibilities to itself and its listeners is the popularising of education itself."

Limitations

But radio has some Mm Stations also which are as follows—

1. The broadcast is one way communication. The evidence cannot get the doubts clarified. They cannot put any question. Only the teacher can help and that too after the broadcast is over.
2. Every time, the time of broadcast does not suit the school or the class.
3. No doubt, home assignment can be given by the radio lesson. But correction is not possible. Only the class teacher has to do it
4. The financial problems are there in the way of the educational use of the radio. The number of receiving sets-is inadequate.

Whatever may be the drawbacks of the radio lesson, its utility and extraordinary advantages cannot be ignored. The teacher should try to make fullest use of the radio programmes. Radio is. Undoubtedly, a force in education with vast potentials, in the words of **K. N. Srivastva**: "The radio is full of promise for the future of education."

(2) Television. Like radio, television is also a means of mass communication. Its advantage over the radio is that it appeals both to the ear and the eye. It has been described as "the queen of audio-visual aids.' It combines photo and voice. It is said to be the electronic black board of the future." Of late, its utility in educational process has been recognised. It has now become powerful means of communication of ideas all over the world. At present, it is being used for teaching purposes in big cities of India like Delhi, Bombay, Madras, Calcutta etc. The teacher inculcates among the pupils good viewing habits, critical and attentive listening. He also psychologically prepares them to receive the information from the television after the lesson also; he plays his role as per needs and requirements of the learners. The teacher as given a guide sheet for each TV. sesson. He can, however, deviate from that sheet if he finds it necessary.

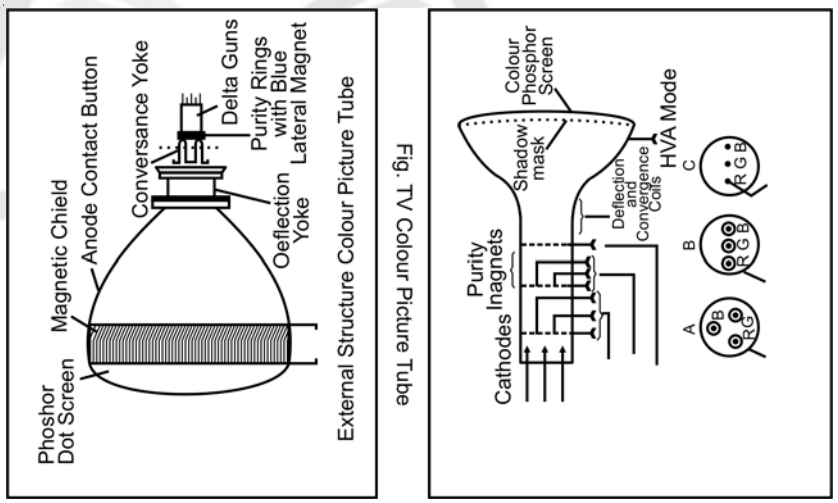

Fig. TV Colour Picture Tube

Kinds of Educational T.V.

1. Open Circuit Television. It is the usual type of telecast by commercial or non-commercial stations.

2. Closed Circuit Television. It is the selective telecast which a\n be turned in only by specially equipped receivers.

Types of Educational Programmes

The following are the types of educational programmes commonly seed on T.V.—

(i) Demonstration Type. It can be commercial as well as ucational. Some outstanding class room activity of a school is made sown to others through television.

(ii) Supplementary Type. In some subjects, there are a few problem areas. The supplementary type of programmes assists the schools in supplementing their knowledge in those specific areas. This also called enrichment programme.

(iii) Direct Teaching Programmes. This type of programmes are ecast for direct teaching' in the different type of schools. They are used in elementary schools, high schools and adult schools. It has been done in a few selected cities only.

Advantages

1. With the help of television, a large number of students can be given information at a time.
2. Television helps in improving the pronunciation of the students. Listening, speaking and understanding abilities of the learners can be improved.
3. On the television, model type of handwriting can be show the students may look at it and they can improve their own hand-writing.
4. The students with slow speed of writing may be asked to listen to the news and then they may write it down in their note-book Thus their speed of writing can be improved.
5. The gifted children can be benefited because they can do some work of advanced nature which is usually not available to them their classrooms.
6. With the help of television, the ablest and the most capable teachers are brought to the T.V. screen. Thus teaching improve considerably in the class rooms,
7. The use of different type of A.V. aids by the teachers in the class rooms is expensive. On the T.V. such lessons involving the use of many aids may be telecast. It will reduce the expenditure teaching.
8. Television is a time saving device. More of syllabus may covered in less time because everything on the lesson will be careful planned without any sort of deviations.
9. The students who are not able to attend the class due to some reason can watch the T.V. lesson at their homes.

Limitations

1. It is one way communication. The students cannot put at question nor can they seek any clarification when the T.V. lesson going on.
2. Individual differences of the learners are not attended in T.V. lesson.
3. The time for the T.V. lesson may not suit the teacher or the school; it may cause lot of inconvenience too many persons.
4. It may not be learner centred approach as mostly the students have to remain passive listeners.
5. A television set is expensive and every school may not be able to have it for teaching purposes.
6. The whole T.V Programme is rigid. Everyone has to watch it. The principle of flexibility is not cared for.

Television is certainly a better and more effective aid as compared to radio because it can present action along with the voice of the speaker. It makes the experiences concrete, real and immediate. On the whole, it is helping considerably in making the teaching-learning process more concrete and sound.

(3) Tape Recorder. No doubt, it is very expensive types of audio aid, but it is quite useful. It is helpful to the teacher in many ways. Now improved models of the tape recorder are in use throughout the world. It comes under the category of Hardware aid.

Advantages

1. The tape recorder is an extension of a lecturer's work. When the teacher feels tired, he can teach vigorously by recording his voice with the help of a tape recorder.
2. It can be used for the improvement of pronunciation. The student can listen to the recorded programmes, speeches and thus improve their own pronunciation. Sounds, stress, intonation etc. can be taught by using a tape recorder.
3. The tape recorder can be used in learning music. The learners can record their performances and then discuss the same with their teacher.
4. It can be used for self examination, self criticism and self-education.
5. It can be used for giving a commentary on a slide or film strip.
6. It can be used for giving drills to the students.

Limitations

1. It does not function when electricity supply fails.
2. It needs careful handling as it is very delicate and can be out of order soon.
3. It is an expensive aid. Some, schools may not afford to purchase it.
4. **Magic Lantern.** It is a simple type of hardware aid because its mechanism is very elementary. It is used to project slides. That is why it is also called slide projector. The magic lantern helps in showing the magnified image of the transparent object called slide on to the screen. The slide is placed inverted in the slide carrier of the magic lantern and its erect image is projected on the screen.

Suppose the teacher is teaching the students about some diseases, their origin, effects etc. he can prepare slides on T.B., Malaria. Cholera etc. and shows the same to the class. Another example: A teacher teaching some groups of learners about Mughal period, he can show slides of Mughal art. It will make teaching more interesting and better learnable for the students,

Points to be Kept in Mind while using a Magic Lantern

In order to use the magic lantern successfully, the following points should he kept in mind—

1. Just showing slides to the students is only visual representation of things. The teacher should give a commentary side by side. It would be better if the teacher tells the students first what they are going to see in the next few minutes. That will make the learners psychologically prepared for the work in hand.

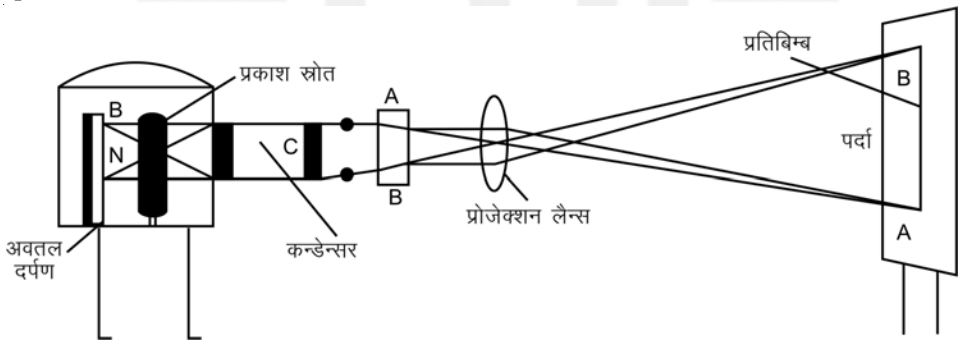

Fig. Magic Laiten

2. Some slides may not be self explanatory type. The teacher should give a running commentary.
3. After showing the slides, the teacher should encourage common discussion. Doubts of the students, if any, can be clarified there. Their problems of any type are also solved.
4. The teacher should not disallow or discourage the students putting questions.

Advantages

1. It is a simple device easy to handle with the help of which magnified objects may be shown on the screen.
2. Any school can afford to have *it* as it is not costly.
3. The picture on the screen can be allowed to remain there as long as the learners wish.
4. There is no wastage of time and energy.
5. It is very handy and can easily be taken to any class room or place where it is to be used.

Disadvantages

Undoubtedly the magic lantern is of immense value for the class room teaching, its short comings cannot be ruled out. It has a few limitations which are as under—

1. The glass slides are becoming costlier now. It may not be put to excessive use.
2. Every kind of material cannot be projected by the magic lantern.
3. **Films.** Advancement in the field of science and technology has placed before the teacher many useful and interesting items which if used rightly in the class rooms, can work wonders

Cinematograph is one of them. The financial difficulties of the schools hinder their maximum use in the schools. Efforts are afoot to provide such facilities in the schools. The films make the concept clear to the learners. Then they are able to learn it realistically and in a much effective way. Films really useful and suitable for the school children have now caught the attention of Sim manufacturers and producers. The Govt, is also encouraging them for producing worthwhile films really useful to influence the emotions of the children.

Types of Educational Films

The educational films are mainly of the following types—

1. Films for the class rooms. This type of films is directly related to class room teaching. Thus we have films for teaching change of seasons, circulation of blood. There are films for general information which may not be directly related with the curriculum. Then there are films for demonstrating a skill e.g. the film on 'How to use a flannel board in the class room?" And then there are films which dramatise an event or episode concerning the life of an individual. All these films can be used for teaching in the class room situations.

2. News reels. They are also produced by the Govt, of India. Some important news of the country is made to reach the masses through such films. It may be on some current event of our own country, of some other country etc. This type of films acquaints the people with the latest happenings.

3. Documentary Films. The documentary films are also produced by the Govt, of India. Here the Govt. tries to cover a wide variety of subjects. Usually the social themes are the basis of preparing such films.

4. Method of showing a film. Films provide lot of useful information to the learners apart from their recreational value. But they need be shown properly in a systematic way. Before showin? a film, the teacher himself should know well the contents of that in. He should make preparations for showing it. For this arrangement of a projector, operator, dark room etc. should be made well in advance. After showing the film, there should be open discussion, where the students should be free to seek clarifications of their doubts, they may put questions. In this way, the desired aims of teaching through films can be achieved.

5. Epidiascope/Opaque Projector. This instrument is an improvement upon the Magic Lantern because the preparation of slides reduces the utility of the magic lantern, in epidiascope there is no need of making slides. Any diagram picture or even opaque object can be directly had on the screen.

It is a very useful type of visual aid. Sometimes the diagram given in the book is rather difficult to draw. Moreover, it takes a few minutes to draw: the same diagram on the black board. The diagram so drawn on the black board may not be accurate. In such, cases, the opaque projector is of much value.

The book is placed in the projector-with the page depicting the diagram so that it is reflected and then-projected on the screen.

The Epidiascope serves two purposes—

(a) When it is used to project any opaque object, it works as an episcope. (b) When it is used to project slides (with the help of a lever) in that case it serves as a diascope. Because of these two purposes this instrument is named as epidiascope. The working of this instrument employs the principle of horizontal straight line projection with a lamp, plain mirror and projector lense. In it is fitted a high power bulb whose light falls on the opaque object. Over the object there is a plain mirror fixed at 45° angle which reflects the light in such a way that it passes through the projection lense. With the result a magnified image of the object appears on to the screen.

Fig. Epidiascope

The epidiascope serves many useful purposes in the class room situations. Suppose some student has very good hand-writing on his note-book and the teacher wants to show it to the whole class. If he shows the note-book to the students straight way, it is not properly visible to everyone. He places that note-book with that page of good hand-writing open in the epidiascope, switches the instrument on and that hand writing of the student appears on the screen. All the students sitting in the class can see it properly and they can learn from it many things how they can improve their own hand writing.

6. Overhead Projector. It is another useful and more convenient way of using black board. In case of blackboard work, generally it is seen that the teacher stands in front while writing and thus his writing on the blackboard is obstructed, the students can't see it properly. Moreover, the teacher has to stand as he is writing on the black board besides the teacher has to rub it off occasionally. All these drawbacks can be overcome in case of overhead projector. It can also be used successfully in a class having a large number of students. The Overhead Projector can be used in any type of room. There is no need of a dark room for this purpose.

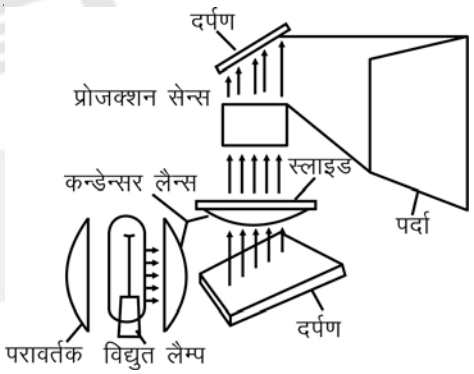

Fig. Over Head Projector

7. Record Player. Undoubtedly it is an expensive aid but it is of great advantage in the class room situations. Some records are available on which well known speeches are recorded. Listening to this type of records can prepare the students for becoming good speaker. There are gramophone records on which the poems and prose passages are recorded, in the same way these are records for teaching stress, intonation etc. of English Language. While teaching English, different type of records can be successfully used in the classrooms.

A record player can be used for teaching spellings of English words. For this purpose some records are available on which words along with spellings are spoken. These records can be used for that type of students who are ear-minded.

The record player works wonders in the classrooms where music and dancing are taught to the students The students can learn singing by immitating records. They can also dance according to the times produced on the record player.

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