

Introduction:-

Vision along with hearing is one of our main distant senses. It has been seen that 25% of hearing impaired children may have some form of visual impairment too. Unfortunately, the effects of visual disorders often go un-recognised by caregivers, medical staff and teachers. This booklet has been compiled for all who live or work with deafblind children and young adults or have visual impairment along with one or more additional disabilities. This booklet is a little contribution from Sense International (India) to deafblind field.

For easy accessibility of information for people with sensory impairments this booklet is also available in Braille and Tape on request.

Vision – Using it Better

“Residual Vision” means any remaining sight, no matter how little, by means of which the person can add to his/her experience, enjoyment and learning about the world. This includes sight which is so poor as to enable the person to tell only light from darkness.

Many parents, educators and care-givers have been misled by the description “This child is blind”. They have taken it to mean that the child lives in a world of darkness. There is then no point in trying to make the learning environment visually interesting, for it will not be seen. Very few people who are described medically as blind are totally without vision.

It is true to say that it is the legal definition of ‘blindness’ which determines a person’s status; rights to certain benefits, the possibility of being labeled; and rights to specialized equipment at discounted rates. Only about 5% of the total population of people who are considered blind or visually impaired are in fact totally blind. Any children or young people stated as being blind or visually impaired whom you meet are therefore likely to have some vision available. It is for this reason that it is so useful to try to determine how much a person can see, the best position in which they see and the optimum location for presenting materials and activities. For instance, for registration purposes a definition of blindness may be that the person does not have enough vision to do a job for which sight is essential. This in no way rules out the presence of useful sight.

Residual vision or useful vision :-

What we mean by Residual vision is just this sort of functional description. Its investigation is concerned with the objects, events and places in the world. This booklet is after all a schedule for working with persons who may have some residual vision- useful remaining sight. The implications drawn are for the most part directed to those areas of curricular development for persons who have some, although very limited, vision

Our visual world:-

The first task of vision is to make us aware of our environment. Sight allows babies to develop precise reaching and to recognise and interact with important caregivers. It helps us in walking and running both indoors and out. Through this sense we become increasingly aware of our surroundings. Objects can begin to take on new meanings.

It tells us how objects are related to each other in space whether in front or behind; moving or stationary; near or far; above or below. Vision also provides us with information usually associated in our minds with other senses. Not only touch tells us whether an object is rough or smooth: vision also detects textural changes. Vision is important for mobility, giving us guidance

indoors and outdoors, and informing us whether we are moving in relation to our environment, or the environment in relation to ourselves.

Vision for detail :-

We use our sight for detailed information. This kind of vision lets us see the finer details of objects, pictures, people, letters and symbols. As we need to identify symbols in order to be able to read and write normally, it follows that any impairment of this 'sight for detail' will affect abilities in reading and writing. You will already be familiar with testing or assessment of this detailed vision. This testing gives a measure of **visual acuity**.

We learn to interpret pictures, do jigsaw puzzles, look at television and to read. Our visual world is complex, varying along several dimensions eg. figures/ground; surface/edge; movement of self movement of objects in the world; hard/soft; near/far; big/small; changes in perspective; changes in colour.

Some specific functions :-

In order to detect this complexity in our visual world, our visual system provides;

- 1) Information on a large part of one's surroundings (field of vision);
- 2) Distinguishes details (visual acuity);
- 3) Detects the difference between relative brightness of different surfaces (contrast-sensitivity);
- 4) Contributes to judging distance (binocular co-ordination);
- 5) Allows us to see in poor light (darkness adaptation); and to quickly accustomise to strong light (light adaptation);
- 6) Helps us distinguish between different shades of colour (colour vision);

Visual impairment :-

Unfortunately impairment may occur to any one or more of these visual abilities. These impairments may for the other-wise able-bodied child not only produce a distorted sense of visual surroundings, but can also switch off any interest in these surroundings. For those with multiple impairment, the job of seeing becomes even harder. The fun can be completely removed from the activity of seeing. The child with learning difficulties will be uninterested in shape sorting or matching tasks if, because of poor sight, all shapes beyond a certain distance appear as circles. The child with a hearing impairment will have less to communicate if she cannot take note of important visual cues in communication, missing as she does the pointing, facial expressions or eye movements of potential partners in communication. For the person with multiple disability those additional disabilities can make the impairment of sight present disproportionately greater difficulties.

Electrical testing :-

How it works?

You may have come across the use of electrical or computerised eye testing. If so you may know it as VER or VEP (Visually Evoked Response or Visually Evoked Potential); ERG (Electro-retino-gram) ; or EOG (Electro Oculo Graph). Each is used for a different purpose. To carry out the test, electrodes are placed in one of a variety of combinations of sites around the child's head and eyes. The procedure is not painful. Various stimuli are then presented usually on a TV monitor and, so the theory goes, if the eyes and/or brain are working, an electrical potential should be recorded. Electrical testing can be an extremely useful procedure, resulting in early diagnosis of Retinitis Pigmentosa or Cortical Blindness, among other benefits. It can also be misleading. There have been many cases of persons with useful vision being recorded as totally

blind. Vice-versa, there have been cases of electrical potentials being recorded, but the child being functionally blind. Why should this be so? Surely such a measure - using sophisticated technology - should be more objective? Unfortunately – even medical technology can make errors. So, it is essential to retest when in doubt.

What goes wrong?

In using recorded potentials, comparison is made with an average. This is then used to provide a minimum cut-off point, below which blindness is designated. This should sound familiar to you. In essence this is the same situation as with the definition of blindness. We indicated that a relatively minimum cut-off point was used to define legal blindness. The same is true for electrical testing. Electrical or computerised tests may not be available in every city or region of India and even if it is available it may be quite expensive. The second problem with electrical testing lies in the fact that it is often seen as being most useful when applied to babies and to older children who have multiple disabilities or deafblindness. When told that their baby is blind, parents often feel that there is little point in trying to encourage the use of vision. After all, what is the point in stimulating something that is not there? When applied to the person who is deafblind, this problem is emphasized. As will be seen in later sections, this is not always a valid assumption to make. Where even very limited vision is found to exist, there are many techniques to harness use of that vision to increase the availability of the person's potential world.

Fixation Preference (FP) :-

This is our second example of a tool used to assess the vision of individuals who are deafblind or multiply disabled. Fixation preference is used in some clinics of many ophthalmologists who routinely test the vision of children. Its use with those who are multiply disabled or deafblind is also increasing world wide.

How it works ?

FP is a measure of the ability of the eyes to look for detail. It does not require language abilities, nor ability to point, nor that the person be able to follow instructions - hence its value to those wishing to test the sight of infants and people with multiple disability or deafblindness is immense .

What goes wrong?

It is only recently that fixation preference as a technique has come into greater use within clinical practice. Nevertheless, consideration needs to be given to some of the issues raised by its use. First, in common with other measures of visual acuity, it shares a problem of interpretation. If we find that a person who is deafblind or multiply disabled looks at gratings which are equivalent to a visual acuity of 3/60, then we still have to work out what to do with that child. We will still need to do a functional visual assessment to setting learning objectives.

Aside from these difficulties in use of FP, there are one or two practical problems. If there is muscle imbalance or squint present, it may be hard to decide to which side a child is fixating. Nevertheless, FP may often be a very useful technique, one of the easiest to carry out, though, as we have seen, not without difficulties in interpretation.

Awareness :-

A person may only have a capacity to be aware of visual information – perhaps limited by an impairment resulting in severe mental handicap. It might only be an awareness of the difference between light and dark. It might only be a movement away from a noxious odour. The presence

of other disabilities would always be associated with this relatively poor ability. The greater the number of additional impairments, and the greater the severity of these impairments, the less likely it will be that the person has good visual functioning. Therefore children and young people with severe and complex additional disabilities will be more likely to show only an awareness of a visual stimulus.

Attending :-

Attending is a little more specialised in response, showing the ability to attend to a visual, or any other, event object or place in the child or young person's world. In this the child begins to show some differentiation to something happening in her surroundings. It might only be a brief movement, lasting less than a second, and it will often be inconsistent. To attend, a child for brief periods, is to show the beginning of distinguishing different people, objects, events and places

Localising :-

Slightly more specialised than attending is when the person is able to locate an event. Her movements will show more consistent differentiation in relation to specific events in the surroundings. For instance, a child may turn consistently to locate stimuli, following moving objects and events through movements of eye, head or other body parts. Notice though that we are not saying that the child would have to be able to make such coordinated movements. It may be that she can only move her eyes and nothing else. Such an ability to localise would be a prerequisite for being able to use a system of eye coding to communicate.

Recognising :-

To recognise the stimulus object or event, the person has to isolate particular features and has to have some capacity to construct a mental representation of that event. It may not be the same mental representation that a person more cognitively able would make. Typically, persons who are operating at this level of ability would not be able to generalize from one situation to another. Many of the standard tests of vision carried out with children require this ability to recognize consistently the features of stimuli.

Understanding :-

At the highest level, a person would be able to comprehend, to understand the meaning of an event. Here a person can not only recognise the features of an object, but understand the relevance, significance and use of that object.

Advantages of the strategy :-

Other than those we outlined at the beginning of this section, it helps us towards a guide to interpreting how a person responds to events in his or her surroundings. From this it helps to derive and plan systematic methods of intervention. Notice that in this framework there are no hard and fast rules about which child falls into which category. As we pointed out, the notion of categorizing or labeling a child does not square well with trying to make sense of his or her individual needs.

At the same time, information on background details will convey much that is useful in designing a programme of intervention. Such a framework is also consistent with allowing us to move from the strictly perceptual, and move towards the increasingly cognitive. And it happens irrespective of the presence or absence of other impairments. It may be that a child is quadriplegic, or is aphasic, but use may still be made of Residual vision.

Use awareness etc. as organizing themes helps us in two ways. First, such a scheme allows us to narrow down our areas for assessment. Second, and of equal importance, it allows us to focus the results of that assessment. Using this strategy, we can build areas for curriculum development around each of these organizing themes.

Conveniently, the broad areas for assessment you will be using are non-visual and visual. Non-visual areas for assessment are of course 'The other senses' of hearing, touch, smell and taste. Finding out how well the person makes use of these non-visual senses and then doing the same with the use of vision will help you to assign the person into either Being Aware, Attending, Localising, Recognising or understanding.

This process sounds a very complex and roundabout way of approaching the assessment of vision. But what we are suggesting is that you start from what you know and are familiar with – how the person responds to everyday experiences such as eating, listening to music and moving around. Having looked at these in some detail, and having made a decision as to the "level" of the person's response, you can then use these as a basis for understanding the persons' responses to visual stimulations.

So to discover the general 'level' for each persons' curriculum development, you compare the results obtained for these non-visual with visual areas of ability. Where there is a difference among the senses, use the 'higher level' around which to organize areas of curriculum development. If this is too difficult for the person, all you have to do is to drop back down to the 'level' below.

To make things easier, we have organized several example topics for curriculum development around these very same themes.

OBSERVING THE PERSON

	Consistently	Occasionally	Never
Person has likes :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Person adopts unusual postures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Person shows unusual mannerisms Describe the mannerisms:	<input style="width: 100%; height: 20px;" type="text"/>		
Person has challenging behaviors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The items contained on the checklist represent the first stage in taking an active role in observation of the person. Tick the box appropriate to each item. You will notice this is the first use of three categories, Consistently, Occasionally and Never. You will be using these throughout out the assessment. We wanted to recognize that persons who have multiple disability might not be consistent when they respond. We do this by recording :

- **Consistently** where the person is regular in showing a change in behaviors
- **Occasionally** where the person sometimes shows a change in behavior

- **Never** where there appears to be no change in the person's behavior

You will probably be able to think of many times when you were not sure whether a response occurred by chance. Where there is doubt as to whether to put down **Occasionally** versus **Never**, then the rule is to give the benefit of the doubt and include the **Occasionally**. The very nature of this kind of assessment is that you can come back another day and try again. Notice, too, that we do not ask you to describe the nature of that response. It is not difficult to understand why it would have been pointless for us to indicate specific behaviors to be recorded. Suppose we had specified that you record if the person "turns her head to a moving object". If her head just happens to be held rigid in an orthopaedic chair then you would not obtain that response !. The box would go unmarked, even though you might have seen her make some other response. It is not, therefore, helpful to specify responses.

No response present :-

What happens if you have carried out the whole assessment, and you have found that the person does not respond at all? Or perhaps you know already that it is pointless to carry out the assessment. You think the person does not respond in any way. What can you do?

When working with persons who have most severe multiple learning difficulties, it can be difficult to determine whether any response is being made to an object or event. Sometimes a technique may be needed for refining our observation. One variety of tools does assist in this process. They are simple additional methods for structuring your observation.

Person has likes :-

In accordance with our Commandment on 'abilities', we begin by recording if the person has any 'likes'. Later on you will be able to capitalise on these. Examples of likes might be situations, places, certain people, music, particular toys, activities and even foods or drinks. The person may only give a vague indication of these 'likes'.

You may be in the position of being aware of the person liking any one of these suggestions, but you are finding it very difficult to complete the remaining sections of the assessment. If so, ask yourself this question. How do I know he has likes?

For to indicate a liking the person must, in some small way, be moving, making a response or being vaguely consistent – to a smell, a taste, a feature. Try to clarify this for yourself. This should help you to complete some of the later assessment items.

Person adopts unusual postures :-

Positioning :-

Supported positioning is of significant importance for persons who have sitting or hand control difficulties. If they are using all their energy in maintaining balance, the visual target might be lost involuntarily. When securely supported energy can be put to the activity of seeing.

Positioning and seeing :-

There is some evidence to show that persons – especially children – who have multiple disability have best positions for seeing (and for other activities). If you are not already aware of information on best positioning, then consult with a physiotherapist or occupational therapist. Gross physical positioning should be investigated as it may be that in a side-lying, or supine position, or indeed some other position that visual tasks are facilitated.

Compensatory head postures :-

Orientations of the head in a certain direction may help a person to see objects. For some persons with impaired sight, only certain parts of their eye can detect information. It may mean that in order to see more effectively, the person has to adopt an unusual head postures.

You may be trying very hard to encourage looking in a midline direction, while the person sees best by turning her head in an apparently unusual manner. Observe whether there is any consistency to unusual positions adopted by the child. For example, she might strain parts of the face or neck, or adjust her body into certain positions. Does this happen only with certain objects, or only when things are presented visually?

You can increase your confidence in deciding between an unusual posture being a purely visual response or a more general response. Try comparing your observations to visual information with those gained with non-visual information.

Persons shows unusual mannerisms :-

What are mannerisms ?

Blind Children often exhibit mannerism or apparently unusual and repetitive or stereotypic behaviours. Some times known as 'blindisms', these have been known to include eye poking, hand waving, unusual head movements, rocking of the whole body and others. The younger the child and the more additional impairments there are present, the more likely it is that one will observe one or even several mannerisms. Generally these do reduce with age.

What causes mannerisms?

Lack of bonding with mother, sensory deprivation and so on – it would seem that there is in fact no single cause. Eye poking may indicate an irritation of the retina, and further medical advice should be sought. Some other mannerisms may, however, have their origins in attempts at communication which were successful early in life.

This last point shows that it can be hard to draw the line between what is and what is not a mannerism. For example, a lack of awareness of facial expressions of adults could apparently be shown by a person avoiding eye contact. Is this a good thing or bad thing? It may be that what appears as a pathological sign is in fact the person attempting to catch sight of a hair line offering good contrast against the background: in other words attempting to interact – the very opposite reason. These unusual patterns of interaction may well represent useful responses for that person in particular situations. **Which takes us to possible remedies.**

What to do about them?

Having followed the discussion above you will realize that a single 'treatment' for mannerisms is out of the question. So behavior modification and other simplistic approaches should be re-considered. In some instances that approach may be right, but there is no educational aspirin which applies to all instances of mannerisms.

The first thing to do is to record instances. Is there a pattern that emerges over a couple of weeks? Look at different settings, when different people are present, at different times of the day. Glean information from home. Depending on the results of your observations, you may want to consider some of the following approaches :

- giving substitute means of initiating interactions with staff;
- engaging the person in motivating activities,

- try saying no – just because a child is blind does not mean mannerisms follow automatically

Remember though that there is also a place for the person with multiple disability to have to same range of repetitive responses as the rest of us. Where these do spill over and become the ritualistic mannerisms, or stereotyped behaviors, then one needs to ask the kind of searching questions mentioned above.

Person has challenging behavior :-

A significant number of those who have multiple disability including visual impairment exhibit challenging behavior. In fact the term “Challenging Behavior” has several different meanings. It is often applied to behaviors seen in a range of persons who are seen as having ‘severe and profound learning difficulties’. OR it is usually applied to those who exhibit severely antisocial behaviors. These could include a variety of forms of self-mutilation and aggression to others. We use it to refer to persons who exhibit anti-social behaviors.

Challenging behavior and severe visual disability :-

You may wonder why this is common with people who are blind and multiply disabled. A few obvious causes which may spring to mind are that the behavior could be :-

- Because of the level of sensory deprivation, the person has to provide his own stimulation. After all, this may be the only one over which he has some control;
- A problem of communication. In this view the blindness causes problems in communicating. In challenging behavior then becomes either a way of communicating or a way of withdrawing from communication.
- One specific example of the above point would be that this offers a consistent way of getting attention.

Of these suggestions – to which more could be added – it is clear that they would be the most amenable to being changed by adopting changes in curriculum. For these explanations suggest that the maladaptive behaviors have results to do with the person’s settings. That is it is functional for the person to engage in challenging behaviors.

Begin by describing :-

As with most of human behavior there may be more than one cause and each cause may interact with other causes. That being so, it is important first of all to describe which behaviors occur; the occasions on which these are observed; the people with whom they happen; and what the person might be getting out of performing these behaviors.

A useful source of help in this is to consult with a psychologist. He or she may draw up a list of behavior categories for you to record such as ones that are :-

- violent, aggressive to others – such as hitting, pushing people;
- self-injuries – head banging, eye poking
- disruptive – tantrums, running away;

Styles of non-intervention :-

There are a host of ways of not dealing with the problems presented by challenging behavior. Many have hidden from the problem, or blamed the victim, or passed the buck to someone else or permitted it to happen.

Styles of intervention :-

We would like to describe four broad areas which you may encounter as suggested ways of guiding your intervention with those who exhibit challenging behavior. These are Drug, Treatment, Behavior modification, Gentle Teaching and Cognitive Therapy.

Drug treatment :-

Too often drug treatment is used in place of changing administrative structures. Medication should be a last resort, only used when all else has failed and for as short a time as possible. In fact, many drugs used for this purpose have side effects on concentration, on vision, and on mood.

Behavior modification :-

You will no doubt be aware of this term used to describe the system of rewards and punishment to reduce challenging behavior. Indeed its use is a severe challenge itself to the commandment on allowing the person to have control over his world. For challenging behavior is in this view a sign that the person already has too much control. The aim is to reduce the control the person has over the world.

Behavior modification can be very effective. However it has two main disadvantages. First there is difficulty in generalising. What is learned becomes extremely specific – to one member of staff, to one room, to one activity at one time of the day. Transfer becomes difficult. The second difficulty with this method is that training in skills does little good without concurrent change in attitude.

Gentle teaching :-

This is only one of many forms of practice currently being used with persons who is general do not have visual disability. The technique can be applied to those who have visual disability.

Cognitive therapy :-

This technique, recently introduced into the field of clinical psychology is, as yet, almost entirely untried in the area of multiple disability with visual impairment. It is an area worthy of further investigation.



Reference:

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- 3) A Sensory Curriculum for very special people : A practical approach to curriculum planning by Flo Longhorn, Souvenir Press
- 4) Deafblind Education : Developing Individually Appropriate communication and Language environments by Nan Robbins