

**A MANUAL OF AUDITORY TRAINING
FOR THE PARENTS OF
HARD OF HEARING CHILDREN**

SHALINI

(Register No. 8)

**Project Work, Final M.Sc., (Sp & Hrg),
All India Institute of Speech & Hearing, Mysore -6**

ACKNOWLEDGEMENT

I am greatly indebted to my guide Dr. Shailaja Nikam, Head of the Department of Audiology, All India Institute of Speech and Hearing, for the guidance at every stage of my project work. I am very grateful to Dr. Rathna, Head of the Department of Speech Pathology, All India Institute of Speech and Hearing, for his invaluable suggestions and also for his immense patience in having to go through my manuscript.

Also, I wish to express my heartfelt thanks to Mrs. Indira Prakash, Itenerant Speech Therapist, for rendering some very valuable suggestions.

PREFACE

Any handicap or disability is among the major cause of dependency in most nations and results in economic losses. However in human terms, the loss is even greater. Our hearing handicapped is no exception to this. For a deaf child there are hurdles to be overcome that stagger the imagination. Above all he faces the handicap of communication disability. It is a major handicap which in turn handicaps the individual's personality development and social development.

Rehabilitation is the greatest weapon in this struggle against the handicap. The rehabilitation procedure that we take up should enable the aurally handicapped to grow up into happy whole individuals with a chance to blossom full in every way and with abilities and opportunities to live in our world – the hearing world. In short the rehabilitation procedure should aim at integration of the deaf with his hearing peers.

This brings into light auditory training. Auditory training is educating the residual hearing so that one can make the most use of it. It teaches deafened persons become alert to sound, to distinguish various sounds and to build up tolerance for noise. Since it is the deprived auditory sense that hampers the individual's development,

auditory experiences with well planned training should play a prominent role in making the environmental provisions more effective for each child in carrying out the general and specified developmental tasks of early childhood and in establishing fundamentals of language skills.

The need for auditory training is particularly great for aurally handicapped children during the speech readiness period. A lack of proper attention during this time can result in basic problems of language development and scholastic achievement.

A fact which has to be noted is that for a preschool child the parents are his first teachers and nothing that a professional can do in a therapy setting can hope to have the same impact as do the parents. If the maximum potential of the child is to be realized it must be done through the parents.

In developing countries, however there is a tremendous cry of all these handicapped for more and better rehabilitation facilities. Several factors are important for the solution of this problem i.e., personal organization, training facilities and money. Two major problems faced in developing countries at this moment are shortage

of trained personnel and the poor socio-economic standards of the families of the handicapped.

The purpose of writing this manual is (a) to help those parents who are not in a position to employ private therapists, and (b) who do not have the facility to go to a speech and hearing clinic.

We in India do not have many speech and hearing clinics and most of them do not provide free services.

Many a time it becomes difficult for the counselors to instruct parents in each and every step of the process of auditory training, even when given a complete set of instructions, we still do not know how far parents can remember and carry out these instructions in their home training program. It is with these facts in mind that this manual is written.

There are many foreign publications which give instructions about auditory training to the parents of the aurally handicapped children. We in India cannot use manuals brought out by foreign countries as our cultural set up and standards of living limit their applicability. Hence the present manual is a pioneer work in the area of auditory training which can be used by any class of people of India.

This manual tries to present activities for auditory training which are practical and economical.

The age group chosen here is 2 (+) because we normally find parents bringing their aurally handicapped children for consultation on and around 2 years.

CONTENTS

		Page No.
Introduction	..	1
<u>Auditory Training Lessons</u>		
Section 1	..	19
Section 2	..	37
Section 3	..	50
Section 4	..	73
Section 5	..	82

INTRODUCTION

Hearing – Its role in life:

“It is strange – It is sounding peculiar”. How many times have you heard of such statements? You probably would have heard of an alert industrial worker who can identify the fault of the machine and prevent further damage by just listening to the change in noise of the machine. Aren't you often guided by sounds when you are cooking? Don't you move aside when you hear a lorry approaching from behind? Now I guess you know how it is that you have been so alert. Ah yes! It is because you have always been guided by your hearing.

We live in the midsts of world of sound. Sound acts as a warning signal which is of great importance to physical safety. It alerts us to react in a way needed depending on the sound heard. So many times you would have prepared yourself with a weapon to catch a thief at the slightest sound that you hear in the night.

However other more important functions of hearing are:

1. Hearing acts as a media to learn to speak
2. It gives us special awareness; it gives information about things and happenings around us.
3. It gives us a continual contact with our surrounding even in the dark.

4. It also helps in normal personality development. For what is stated above we now can say hearing forms a link with the rest of our world.

If your child has hearing loss:

Your child will not be able to get out of the way of the lorry or hear you talk to him.

When the audiologist tells you that your child is hard of hearing often having tested, do not start comparing him to other hard of hearing children. All the hard of hearing are not the same like how all the five fingers are not same. They have different levels of hearing loss as we have different heights. Your child may be able to respond to some sound levels and may not succeed in responding to some other sound levels. It is like an individual, how he is able to reach certain heights and cannot reach things that are kept at very high levels beyond his reach.

He has some amount of hearing:

Now you must realize that if your child does not talk or does not look at you when you call, it does not mean that he is incapable of hearing at all. Almost without exception all of the hard of hearing children retain atleast some small bits and scraps of hearing. Professionals name this 'residual hearing' meaning remaining amount of hearing. The hard of hearing children differ

in the amount of hearing they have. Your child will have that amount of hearing depending on the category he belongs – mild, moderate or severe.

Mild hearing loss:

In this case, the child will have large amount of hearing left. He may hear certain sounds normally but may have a serious loss of hearing for those sounds which he must hear in order to learn to speak. He will then be able to hear many sounds such as the clapping of hands or the snapping of fingers. He must be given training to listen and to understand speech.

Moderate hearing loss:

If your child has moderate hearing loss he will have less hearing left compared to mild hearing loss child and more hearing left compared to severe hearing loss child. He might not be able to react differentially to two different sounds but he might turn his face or control his face when he hears the door bang or when there is thunder. He must be given training to recognize the difference between two sounds.

Severe hearing loss:

A child with severe hearing loss will have little hearing left compared to a child with moderate hearing loss. He will not be 'aware' of the presence of sound but when the sounds exceptionally loud he might react to it. Then he will have to be taught to listen to sound – to be 'aware' of the presence of sound.

We try to make the best use of this hearing with the hearing aid on. The amount of hearing ability he has is less when compared to his normal peer. Therefore to increase the strength of sound so as to enable him to hear better you have to fit the child with the hearing aid that is recommended by the audiologist. Just as spectacles are used to see better hearing aid is used to hear better.

You would have listened to a loudspeaker during some function. There soft spoken speech can be heard louder through the loud speaker. Similarly in hearing aid even if you give sound at level where normals can listen it increases the loudness of the sound the feeds it to the listener – your deaf child. Thus the child hears the sound!

There are chances that your child may not be reacting to sound like other hard of hearing children. He may not seem to hear, but when he is tested objectively he may be reported to have normal hearing or he may seem to hear some sound and not others which may be louder than those he hears. Or your child may sometimes clearly respond to sound but at other times he may fail to do so. If your child is showing the above signs then he does not belong to the group of those children who are called hard of hearing. There might be injury to the brain; so that they cannot interpret the sounds which they hear. These

children might be having aphasia or auditory imperceptions or auditory agnosia. However let the audiologist make the decision for you.

There is much that you can and should do for your child during his preschool years, whatever the type of hearing problem is having. To be of the most help to him you must accept as a challenge the problem which he presents. You might start thinking too much of his deafness and not enough about his growing and developing normally. Your child is like any normal child. He is as intelligent as a hearing child of his age. He has the desire to communicate, he wants to be like his peer. His feelings and emotions are like normal child's. He is different from them mainly because he has not learned to talk at the usual age and does not listen and react to sounds like his normal peer. If you do not help him during these early years your child will develop peculiar habits and patterns. He will start using gestures. There will be narrowing of social experiences, limitation of source of information. He feels insecure and frustrated. His intellectual functioning level may come down.

What you as a parent should know:

Along with furnishing the child with a hearing aid you have to train the child systematically to use it. That is a job, you as parents have to do; the hearing aid will

not do it by itself. If your child has hearing it will not fade away – it cannot fade unless some disease or infection steps in and damages it further. The child will not use the hearing he has unless some one trains him to do so. So if you do not teach him to use his hearing it will seem to fade away – not because, it actually does fade, but simply because your child will get into the habit of not paying any attention to it (Spencer). Therefore give the child auditory training – that is to train the child to hear the sound.

Importance of auditory training:

One way to think of the need of auditory training is to imagine what would happen if a person who had never heard suddenly became able to hear. All of the hundreds of sounds that are so easily recognized and understood by everyone who has normal hearing would simply be a confusion of noises to the person who had never heard them before. He would have to learn that ‘honk’ came from automobile, and that stream of vocalization has meaning. Your child when he first hears through the hearing aid will not know what the sounds mean. He will have to learn to listen. Auditory training trains the child to develop abilities to listen in the order that a normal child develops hearing abilities. Auditory training will help the child to (a) become aware of

presence of sound, (b) give meaning to the sound, (c) learn the difference between the sounds that are very different, (d) learn the difference between the sounds that do not differ much (e) learn to understand words and sentences, (f) get a background against which he can more easily learn to speak, (g) develop more normal personality just because he can hear even if only a little bit. The normal baby goes through these with his normal ears. The hard of hearing child has to start with the hearing aid and then he follows the same pattern.

Thus the auditory training helps the child develop his hearing level from awareness to understanding of speech. You start giving your child auditory training in those aspects in which your child fails to function properly. Thus the level at which you start the auditory training depends on your child's degree of hearing loss. Some of the things that you should know about auditory training are:

Repetition leads to better understanding:

A child does not understand what he hears at first but must listen to understand it. Not until they have heard the same sound over and over again do they begin to give meaning to it. Thus auditory training should be a continuous process and a repeated one.

Early Start:

Sounds presented to a deaf child will not sound like the sound we normals hear. It will be distorted and many sounds probably would be missed entirely. If sound stimulation is given from early infancy with hearing aid fitted, it will become meaningful to the child.

Betterment – takes years of Hardwork:

Helping a deaf child to learn to listen is a program which may take a very long time. Gains made by the child who has minimal hearing may barely be noticeable from month to month. Therefore do not get discouraged. If auditory training goes on systematically and faithfully over the years, quite definite advantages can be gained.

Do not get discouraged:

Sometimes the hearing development seems to come to a stop and there appears to be time of no progress. But remember this is a 'rest stop' that will prepare the child to go ahead.

Do not overdo:

To go on with the same task for long is tiring. Therefore auditory training should be done only a few minutes at one time i.e., small sessions to be taken with intervals.

Make it interesting for the child:

When you are having auditory training sessions, make it interesting. First be enthusiastic about the session yourself. Then include activities of child's

interest and see that the child leaves the session with a feeling of success. For this your auditor training should start from easy tasks and then move on to hard ones.

Training need not have to be formal:

Auditory training will also have to be carried out informally taking advantage of sound occurring randomly at home and sounds of environment. There has to be sessions of auditory training in addition to this where in using materials and lists of activities you carefully plan it out.

Take advantage of other senses too:

In auditory training you also make use of kinesthetic experiences (sense of touch to feel the vibration when the object produces sound) and vision in addition to audition (hearing) of in the earlier stage for introducing sound into his auditory system. Later the other two senses are gradually faded out so that the response is merely of audition.

Remember these while you carry out the auditory training lesions.

Hearing aid – How can you train your child to accept it?

Remember auditory training is basically an attempt to help the child to hear better, to help the child to make the best use of the hearing he has. You can easily understand that the hearing aid improves the use of

residual hearing and it is therefore an extremely important factor in auditory training. With a hearing aid he hears more and better; this will in turn make the task of auditory training more efficient. (However if for any reason a hearing aid is not available to the child, you can still start on auditory training by making sounds and by speaking closer to the ear of the child. Auditory training without a hearing aid is slow and is definitely not as effective as with a hearing aid.

Not all children immediately accept a hearing aid enthusiastically and are unhappy with it. The child of course feels discomfort with something unusual in the ear and may be reluctant to wear it. This problem can be overcome by a gradual process of making the child familiar with it and presenting interesting meaningful and pleasurable listening experiences when he wears the hearing aid.

First when you put the hearing aid on child keep a pleasant expression. Do not show anxiousness on your face. The child is always watching your expression to understand the feelings.

To get your child to wear the hearing aid first you or any sibling (brother or sister) should wear the hearing aid and express how you are enjoying wearing it and how you can hear the sounds by pointing to ear and saying that you are hearing.

Now do not force the hearing aid on to the child. Let him wear it as long as he wants to. Yes, in the beginning he might just run away at the sight of it.

Let your child handle the hearing aid, let him play with it. Let him see you open the battery compartment, pull out the cord, adjust the control. He will have to get more used to the 'foreign object' which will later be a part of his daily wear.

In the beginning you can try with only the ear mould in the ear and later on introduce the cord and hearing aid.

If your child tries to pull away the cord or mould you can tie a head band – a scarf round your child's face so that the child cannot reach it.

Present something pleasant as sound stimuli. Do not present a loud blast as a big bang of the vessel or door bang so that the child startles and screams. Give those sounds made by animals which usually most children seem to enjoy.

Your child may not at first be ready to wear the aid even if for few seconds. Therefore try again and again with time gap in between. You can persuade the child to keep the hearing aid for longer time by rewarding him. Give him anything that he is happy to have. It may be

awards or picture or just letting him go out and play. Show him how glad you are to see him wearing the aid. This also will encourage him to wear the hearing aid because he is eager to please you. Keep a criteria of time limit to reward your child. Once the child wears it for as long as time limit you have kept increase the timing. Thus go on increasing the time with same procedure to follow.

Once the child starts wearing the hearing aid for longer durations you will not have to go ahead with your session of trials of hearing aid. The child himself will want to wear the hearing aid and will be very happy to keep it through out the day once he starts listening to sound and getting used to "Something in the ear" - a part of his body as it may turn out to be for him.

You can also make use of dummy hearing aids for yourself. You yourself keep something in your ear which looks like a hearing aid; may be two balls of cotton stuffed in each ear tied to inter twined thread which is exposed outside. With this on, you can go ahead with your daily chore. Show to the child that you are wearing the aid.

To get the child to wear hearing aid as soon as he gets up you try to correlate it with any of your daily activity. Mother can show to the child that she puts the 'bindi' on forehead every morning as soon as she gets up.

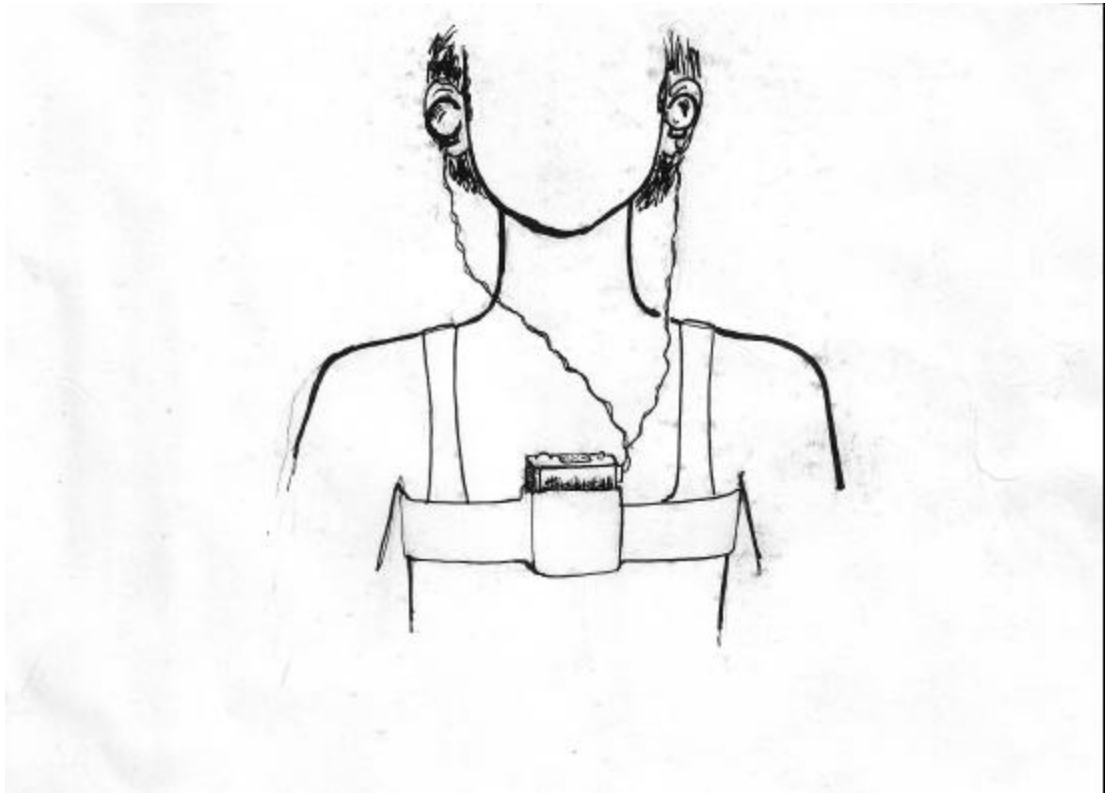
Similarly he has to wear the aid as soon as he gets up. If the child gets used to this, later he will remember to wear the aid as he sees the 'bindi' on mother's forehead.

Use the hearing aid according to the instructions given by the audiologist. The audiologist might have told you not to let the hearing aid fall down from a height or safeguard it from any mechanical damage. Now do not restrict your active child. Let him play as he used to running and jumping. Instead use a cloth band (fig.1). This cloth band has a pocket to keep the aid. The band is tied comfortably tightly around child's chest on his dress. It has a strip running from back to front over the shoulder. This band prevents the hearing aid from falling down when the child is in active play. Remember, you yourself should accept the hearing aid first. You should not have any fear of social stigma, or else you are conveying the idea to the child that the hearing aid is not accepted by you and he will refuse to wear it. Remember even if you do not say it, the child will feel your reluctance.

Development of interest at various age levels

In a child:

As I had mentioned earlier, auditory training sessions have to be interesting. This is possible by incorporating a few games of child's interest. Your child's interest varies at different ages so the activity which



you choose for the child should suit his age and the interests and abilities of the particular age level which your child belongs.

The two years old:

The first two years, a child spends most of his time in fingering objects. It is the age of exploring. A two year old is not yet socialized. He does not know how to share his toys with other children yet. His best companion and play mate is his mother. They look at the toy, shake, sound explore it. It is very difficult to get them to sit in a place for sometime. He is very interested in making towers with blocks, pouring content from one container to other. For games, they do not need fancy store bought toy. Mud, water, stones, pot, pan etc. of the house are just as well or may be better. These children are capable of putting on their own garment, brushing hair, copying simple model of tower, scribbling and scratching. They are very interested in colours and would colour the whole paper while finger painting. He is testing the durability of paper or painting brush. Regardless of his action painting he goes about his exploration. He is in the searching and testing stage. The child is able to walk up and down stairs but with hold on.

The three years old:

The three years old is quite a bit more mature than the two years old. He tries hard to please his mother

teacher. He needs social contacts with his own age. He begins reaching out to his peers even though it may be a non social approach as a hit or push. It is still very difficult to get him to sit in place. A three year old child can put on very difficult garments, brushes teeth successfully, prints large letters, copies vertical lines, places blocks in regular piles. He is able to cut, paste, paint and scribble with finger, pencil or crayon. He hops with two feet together. He can walk up and down without holding. He is now in his construction stage. He wants to make things simple and crude. He builds towers, homes. Instead of scribbling at random, he colours pictures in books or drawn his own pictures.

Ear training during the first three years must be very informal. He very likely will toy to imitate during this period, so try to make use of it.

Four years old:

He turns four and he is more noisy and active. He runs up and down the stairs. He is at the height of his energy. He needs a pal. The sex of the friend is not important. He is more capable of taking a little more of sitting. He is equally attracted by water as the 2-3 years old. He has the ability to cut with a knife if the object is soft, can button his dress, he still can only print a few large letters. He tries to throw and catch and builds four block towers without model. He is now developing the

ability to hammer, paint with brush, draw with crayon and pencil. He skips. He uses alternative leg in walking up or down. It is after then that interests of girls and boys vary. Choose activity according to this.

Five years old:

At five, your child is learning to be kind and generous and eager to play with other children. He begins enjoying his games with neighbourhood children. He becomes a part of a small group. Added to his maturity, he may be happy to sit for long time in one place. He is capable of brushing and combing hair successfully. He prints first name and numbers one to five. He copies squares. He builds more difficult figures. He is mature in motor aspect fully. He is capable of doing most of the activities.

After 5, the child is capable of doing most of jumping, running, and drawing. Therefore while choosing activity for auditory training for your child, keep the abilities of the children at different ages as your reference and develop activities suiting your child. By the reference I have given earlier if your child seems to be interested in the activity that is given along with the lesson use that activity and those activities similar to it. But if your child does not fit into the age group for whom the activity is given in the lesson, then choose other activity that your child is capable of and is interested in performing. Some of the activities are given at the end of each section from which you can

choose or keep it as a guide to think over some other activity yourself.

Here are a few lessons on auditory training. Take up each lesson when you think you child has succeeded in the previous lesson. You can use the percentage of correct responses as a measure of success. If he consistently responds 70 percent of the time – switch on to next lesson or step. But always remember that your child may not respond to any of the sounds at first and the beginning attempts seem often useless and discouraging. But if you continue the work eventually he will respond. You will not be able to teach one lesson in a day. Teaching each step may take one day. If your child is young, below four, then progress is will be slow. He will not be attentive for a long time. So you have to break up your session with intervals. While auditory training takes time and patience it is not as difficult as it first appears to be.

Before starting the lessons let me familiarize you with some of the terms often used.

Awareness:

A child comes to know the presence of sound. He will know that there is sound in his surroundings. It will be like, he hears when it thunders but will not know what it means. He is not yet attaching meaning to the sound occurring – as either sound made by door bang or vessel falling.

Discrimination:

The child differentiates the sound made by two different sources. He will react differently to two different stimuli. He recognizes the difference between two sounds.

Gross sounds:

Are sounds produced most of the time in our surroundings as sounds made by vessels, water, grinding etc.

Fine sounds:

Are sound usually produced by musical instrument where energy is concentrated in a few pitch ranges.

Gross discrimination:

Is finding the difference between two sounds which are very different. The difference between sounds made by vessel and sound made by chair or table.

Find discrimination:

Is finding the differences between two sounds which are not much different as finding the differences between sound made by grinding stone and powdering stone.

Syllable:

Is a unit of pronunciation uttered without interruption as word or part of word containing one vowel sound and one consonant. Ex.

In Kannada /Ba/ (a word).

Baruttane (he is coming)

/Ba/ Ru/ /tta/ /ne/

Here /Ba/ is part of a word.

Auditory Training Lessons

Section 1: Awareness of Sounds.

Whilpool.

Lesson No.1 Help your child to become aware of gross sounds.

If you find out that your child, belongs to the severe loss group who does not even hear the sound, train your child to become aware of sound, whatever the age of the child may be first teach him what the sound is. He has not heard the sound till now. The activities that are written along with the lessons should not be blindly followed. Considering the age of your child you adapt the activity. Here this particular activity with stones is chosen because children at younger age are usually interested in these things. They like changing from one container to other.

Before starting the lesson check these points:

1. The child must be hearing the hearing aid advised by the audiologist. The hearing aid must be in good working condition.
2. If he can hear the sounds go to the next level.

Materials needed:

Old unused vessel of fairly big size preferably brass, a long strong stick, two containers may be two cups filled with water and Stones.

Procedure:

Step 1: Your and your child sit down facing each other with the vessel and stick in front of you and keeping

the cup and stones in front of your child. (Fig. 2)

Step 2: Get your child's attention. Let him watch you. Tell him you are going to make the sound with stick and vessel and that sound will come which you can hear. Yes. Your child does not hear your speech. But talk to him – you can make use of some gestures along with your speech to convey your message in the beginning.

Step 3: Now beat the vessel when the child is watching you. Let the child feel the vibration of the vessel. You indicate that you are hearing by directing your finger to the ear. And point to his ear with the hearing aid. As soon as you indicate that you are hearing put a Repeat this procedure several times. (Fig. 3 a and b)

Step 4: Now beat the vessel. Let the child feel and see the sound being produced. Take your child's hand, let him hold the stones and direct his hand to cup so that he drops the stones in the cup. Repeat it a few times. (Fig. 4)

Step 5: Now when you beat the vessel let the child feel and see. Do not help the child in putting the stone. Wait and see if the child will put the stone in the cup when you beat the vessel. If he does not, indicate to him to put the stone. Repeat the procedure a few times until he begins to drop the stone on his own.



FIG 2 [step-1]



FIG 3a [step-3].



FIG-3b [Step-3]



FIG-4 [Step-4]

Step 6: Continue beating the vessel. Let the child still feel and see you beating the vessel. But now he should be able to put the stones in the cup without your help. (Fig. 5)

Step 7: Continue giving the sound. But this time let the child not touch the vessel. He should be able to respond (to put stone) by seeing you beat the vessel. Repeat several times until he is capable of responding without prompting.

If your child does not do this go back to step 6 where he can feel and later come again to step 7. If he does this successfully move on to the next step.

Step 8: Now keep the sound source out of sight of the child – by turning the child's back to you so that he is unable to see you making the sound. Beat the vessel. See if the child responds. If he does not respond go back to the previous step. Repeat the procedure until your child succeeds in responding consistently 70 percent of the times you give the sound. (Fig. 6)

Do not forget to:

(a) Give him reward everytime he does the act you want him to do correctly. This should be followed at each step and at every trial of giving sound. Pat him, nod and smile along with giving him other rewards.



FIG. 5 [Step-6]



FIG. 6 [Step-8]

(b) When the child does not do the act in the new step, go back to the previous step. Give him practice in that and then once again start the new step. Give him practice in that and then once again start the new step.

(c) When you change from one step to the other make sure your child is responding atleast 70 percent of the times you give the sound.

(d) You have to give several trials at each step.

(e) Each time you have to keep changing the activity that the child has to do. Here the activity refers to response of the child. Otherwise the child loses interest.

(f) Once the child is aware of the sound that you have chosen for training you will have to change the sound source that will be used for training.

Listening to soften sounds:

Train your child to listen to softer sounds of those sound sources whose louder beat he is able to hear. When your child can hear the loud beat of the vessel, you train him to hear softer beats of the vessel. This softening of sound can be made by (1) beating of the vessel softly or (2) increasing the distance between the child and the sound source. At the same time train your child to hear other loud sounds.

While you are training the child to hear softer sounds follow the steps mentioned in lesson No.1. These steps have to be followed at each level of soft sound.

Keep reducing the level of sound gradually until the child is incapable of responding even after several trials.

Listening to other sounds:

While you are training the child for different sounds made by different sound sources, first introduce low pitched sounds as door bangs or drumming the table, sounds made by using wooden planks, claps etc. Later on you introduce high pitched sounds such as whistle, alarm clock sound or bell. But remember at first the sound should be very loud. The other sounds that you can train your child to become aware are:

<u>Sound source</u>	<u>Reduction of loudness</u>
1. Two wooden planks or drumming the chair, table	You can gradually reduce the sound level by putting less force.
2. Brass plate being beaten (Jagate) (gong)	-do-
3. Sound of grinding stone	-do-
4. Beat of the cloth on Washing stone	-do-
5. Water falling into the bucket	Reduce the loudness of sound produced, by reducing the size of the container – from bucket to tumbler.
6. Sound made by a vessel and spoon in it	Reduce the loudness by decreasing the size of vessel gradually to tumbler, big spoon to small spoon.
7. Sound made by shaking heavy objects in big vessel	Reduce the size of the vessel.
8. Sound made by tin	Reduce the size of the tin.

- | | |
|---|--|
| 9. Sound made by powdering stone | Increase the distance between the powdering stone and child |
| 10. Sound made while cleaning the grain with a plate | -do- |
| 11. Sound made while pounding, hammering, dropping objects down, opening or closing the door. | -do- |
| 12. Sound made by whistle | -do- |
| 13. Sound made by alarm clock | -do- |
| 14. Sound made by bell | Decrease the size of the bell. |
| 15. Sound made by conch | Decrease the loudness by increasing the distance between the child and the sound source. |
| 16. Gingle sound of mother's bangle | |
| 17. Bell sound in the clock | |
| 18. Tap on the door | |
| 19. Sounds made in the kitchen | |
| 20. Gingle bells | |
| 21. Sounds produced by toys. etc. | |

The intense sounds upto number 15 should be introduced initially. As the child familiarize to these sounds move on to softer sounds 16 to 21.

Informal auditory training :

This training has to be taken up while you are introducing the child to the world of sound.

If you are in the city draw the attention of the child for ex. to a moving bus and then tell him

“look I can hear the bus. Do you hear?” Indicate with gesture initially. Repeat this process whenever you hear the bus. If possible buy a toy bus and make the sound yourself later.

If you are in a village, make use of animal cries as for eg. Mooing of a cow or barking of a dog. Draw the child’s attention to the sound sources. Let him see the animal in action. You can draw the picture of the animal or indicate to the picture later as you hear the dog bark and not see it. You imitate the dog bark and indicate to the picture. You make use of the sound of bullock cart moving or ice cream man, or door bang or any similar sound. You can even purposely ask child’s sibling to bang the door. You indicate that you are hearing, go to the door and show in action the door being beaten.

All of these sounds have to be repeatedly shown and showing once will help him recognize the sound later.

Musical evening:

Lesson No. 2 – Help the child to become aware of the fine sound as made by musical instruments.

If you have any musical instruments at home you can teach your child to listen to the fine sound produced by the instrument. This lesson does not attempt at teaching the child to appreciate music, but at attempts to teach the child to become aware of fine sounds. You can use any other sound source other than the musical instrument which produce fine sound. Here harmonium is used because it is expected to produce loud sounds.

Before starting the lesson check these points:

1. The child must satisfy those condition mentioned in lesson no.1.
2. The child should be aware of several gross sounds.

Material to be used:

Any musical instrument – Harmonium, a flower with petals detached or a paper cutting of flower with petals cut out in coloured paper.

Procedure:

Step 1: Make the child sit before you, keep the harmonium in front of you and keep the flower with petals in front of the child and let the child face you.

Step 2: While the child is watching you – you play the harmonium at one scale – preferably lower note at the beginning as low /Sa/, /Ri/ or /Ga/. Let the child feel the vibration or air escape from the instrument. Indicate to your child that you are hearing and keep a petal on one side of the flower. Repeat this procedure.

Step 3: Play the note. Let the child feel and see the sound being produced. Direct the child to keep the petal near the flower by taking his hand to petal and arranging, while you indicate that you are hearing the sound.

Step 4: Now let the child on his own respond (by keeping the petal) when the note is played. Do not direct him. You can indicate initially. Let him still have visual (see) and tactile (touch) clues.

Step 5: Play the note. The child should now be able to react to the sound with only visual clues.

Step 6: In this step the child should be able to respond when he does not see you playing the note. You keep the harmonium out of his sight by turning his back to the harmonium.

Keep in mind the precautions as mentioned in ‘Do not forget to’ of lesson no.1.

“REMEMBER YOUR GOAL – YOUR CHILD SHOULD LISTEN AND UNDERSTAND YOU WITHOUT YOUR HELP”

Listening to softer sounds:

As mentioned in lesson No.1 while you are training the child to learn to listen to other fine sounds, of louder quality, help the child to appreciate softer sounds in those fine sounds in which training is already given. Before helping your child to appreciate softer sounds your child should be able to hear loud sounds – both gross and fine. You can train your child to hear softer sounds of musical note or any fine sound by increasing the distance between the sound source and the child.

Listening to other fine sounds:

Once the child is responding to the particular note you are giving training on, choose other notes on the musical scale as /Ma/ /Pa/ etc. Always move from low pitch to higher pitch i.e. lower /Sa/ /Ri/ to higher /Sa/ /Ri/. It is not a must that the child should be able to hear the sounds of all the notes. Remember you are not training the child to learn music but you are helping him to hear fine sounds. Use other musical instruments or other fine sound sources.

Other fine sounds sources

1. Veena
2. Sitar
3. Tabla
4. Conch
5. Whistle etc.

“GIVE HIM REWARD EVERY TIME THE RESPONDS CORRECTLY”

Make an elephant:

Lesson No. 3 – Help the child to become aware of the speech sounds.

Training the child to hear speech sounds is taken as a third lesion because the speech sounds produced are not usually as loud as the sound made by noise makers. Here the child is trained to hear the speech sounds for the first time the awareness of speech sounds is done at word level because our speech mainly consist of words (multisyllables – number of sounds joined together). It is the word – its length and inflection the child should be aware of to hear and understand speech later. Therefore do not expect your child to give meaning to the word you say. That will be taken up later. First let him become aware of the word.

These are some ‘Musts’:

- 1) The child should be able to hear loud and soft gross sounds.
- 2) Other conditions motioned for lesion No.1 applies here also.

Material to be used:

Paper and pencil (You can make use of the floor with chalk piece or even coal).

“SMILES IS ALSO A REWARD”

Procedure:

Before starting the lesson, have the outline of the picture of an elephant. You might not be an artist. So let the pictures be a crude one. But your child should recognize the picture. You can even trace from original picture. Now do not draw and complete the picture of the elephant. It is to be in dots so that when the child joins all the dots, the figure of elephant can be seen.

Step 1:

Have the child sit in front of you. Say the word 'Aane' (elephant). Let the child see you making the sound and feel your throat with his hand. Now indicate that you are hearing. At the same time join up two dots.

Step 2:

Say the word. Let the child see and feel the sound being made. Guide your child to draw the line and to join two points.

Step 3:

In this step, the child should draw the line to join up two points without your guidance when he sees and feels the sound being made.

Step 4:

Say the word. Let the child not feel it. He should be trained to respond by seeing and hearing you making the sound.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE PRACTICE IN PREVIOUS STEP”

Step 5:

Say the word with your hand blocking your mouth so that the child does not see you making the sound. Now the child should be trained to respond just by hearing the word.

Now you have your child responding to the speech sounds.

Listening to softer speech sounds:

The child should be trained to hear even when you say the speech sounds softly. The steps you should follow are similar to the steps recommended in lesson No.3. Keep varying the activity.

But before you start training the child to hear softer sounds (1) the child should be able to hear other loud and soft gross sounds. (2) He should be able to hear loud speech sounds. You can soften the speech sound level by saying it softly or increasing the distance between you and the child.

Listening to other speech sounds:

As the child achieves 70% success, choose another word which is different from the previous practice word. In the beginning choose those words having long vowels and loud ones. The order of loudness of vowels is given at the end of the lesson.

“EACH TIME CHANGE TO NEXT STEP MAKE SURE YOUR CHILD RESPONDS SEVENTY PERCENT OF THE TIME IN THE PREVIOUS STEP”

The order of loudness of vowels are:

ʃ as in saw

a as in balm

u as in put

o as in son

e as in bet

e as in bat

i as in bit [Fletcher 70]

Some of the activities that you can make use of are given below:

You do not have to have special material for training your child. Use things that you usually throw as waste paper, upper part of the vegetable etc.

Sweet bell:**Material:**

Sweets of small size, paper and pencil and bell

Method:

Draw on the paper (or floor) the pictures of bell. Let the child keep one sweet on the line each time the bell is rung. After having completed the shape of the bell with the sweets stop the activity and let the child have the sweets.

Modification:

Make use of other sound sources and other eatables of small size - ground nuts.

“YOU WILL HAVE TO GIVE SEVERAL TRIALS AT EACH STEP”

Tower of tooth paste cap:**Material:**

Caps of tooth paste or lids of other bottles.

Method:

Let the child arrange the caps in the form of tower. Place one cap each time he hears the sound.

Modification:

Any other order of arrangement can be made. Eg. like a snake or a outline of house etc.

Stone man:**Material:**

Different shapes of stone.

Method:

The child can make the figure of a man by keeping one stone on the outline of the picture of the man drawn, each time he hears the sound.

Modification:

Instead of stone child can make use of seeds, sticks, shells to make different figures as house, tree or flower.

Make your own clock:**Material:**

Card board and pencil.

Method:

Child should draw a line in the circle around the edge each time he hears the sound. You can later attach a needle and thus make a clock.

“MAINTAIN YOUR CHILD’S ATTENTION”

Modification:

If you are short of paper use the floor or upper part of vegetable which you would cut and throw. The vegetable that you can use are cucumber or potato – any round vegetable which is hard.

Bunch of grapes:**Materials:**

Paper and pencil – both black and coloured.

Method:

The child should draw a grape each time he hears the sound so that at the end of the session there will be a bunch of grapes. He can colour the bunch of grapes at the end of the session.

Modification:

Similarly you can get the child to draw and colour other pictures as flowers or train etc.

Fishing game:**Material:**

Cut outs of the pictures of the fish. Have these paper cut outs attached to a loop of thread. A stick having a hook made by using an old wire.

Method:

Provide the child with the stick having the hook. The child should fish out each picture when he hears the sound. To make the fishing easy you can make the child sit on a chair (any high level).

“KEEP CHANGING THE RESPONSES ACTIVITY”

Modification:

Instead of the fish, you can have the cut out of the picture of the object you are using as sound source.

The chain:**Material:**

Beeds and thread.

Method:

Let the child string each bead each time she hears the sound so that at the end of the session she gets a chain.

Modification:

She can also needle each flower each time she hears the sound. The flower may be natural flower or paper flower. At the end of the session she would have made a garland.

Let us sail the boat:**Material:**

Small paper boat made using waste paper and water in a big container.

Method:

Each time the child hears the sound he should sail a boat in the water kept in a container.

Pieces into one:**Material:**

Draw a picture of an object and cut it into pieces.

Method:

The child has to arrange the picture to form the whole picture by keeping one piece, for each beat.

Modification:

Cut out the pictures of objects from the paper. The child has to fit the picture back into its position each time he hears the sound.

Make a ball:**Material:**

Strips of paper, old waste cloth and one stone.

Method:

The child has to wrap one strip of paper around the stone each time he hears the sound. At the end of the session wrap the old cloth and there your child gets a ball to play.

Here is a train:**Material:**

Old used match boxes.

Method:

Open the match boxes and keep them. The child has to join two boxes each time he hears the sound. At the end of the session there will be a long row of match boxes attached to each other so that they lock like railway compartments.

Do not limit yourself to the activities listed above. Think on the same line and create more games for the child to play.

“SMILE IS ALSO A REWARD”

Section 2 : Meaning of the sound

Listen! Some body is at the door:

Lesson No.1

Help your child to understand and give meaning to loud gross sounds.

Now that your child has learned to be aware of sound, you have achieved one important step. You should now train to make use of this achievement by teaching him to give meaning to the sound. The child should be able to understand what the sound means and he should learn to react sounds are used because they are easy to hear.

The child should be: (1) able to hear loud and soft gross sound and (2) conditions of lesion No.1 Section1 must be satisfied.

Material:

Another person to assist you.

Procedure:

Step 1:

Let child's brother or sister bang the door loudly when the child is quiet and listening. Draw the child's attention to the door by indicating to the door. Tell him somebody is at the door (you may have to use gestures along with speech). Open the door and show him the person who is at the door.

“REMEMBER YOUR GOAL – YOUR CHILD SHOULD LISTEN AND UNDERSTAND
YOU WITHOUT YOUR HELP”

Step 2:

The child should be shown banging on the door and let him feel the vibration on the door and you direct him to open the door when he hears the sound. Let this procedure be repeated several times with different people banging the door each time.

Step 3:

This is the same as step 2 except now the child should respond without guidance. Let somebody bang the door. Let the child feel the vibration, see the person banging the door. Let the child open the door. Assist him to open the door. But he should make first move to open the door.

Step 4:

Now the child should not be shown anybody banging the door but only feel the vibration of the door banging. He should open the door.

Step 5:

He should be trained to open the door by just hearing and not feeling and seeing.

Listening to softer sounds:

When your child succeeds in reacting to loud gross sounds meaningfully you may reduce the loudness and give your child training to react to softer sounds by following

“GIVE HIM REWARD EVERYTIME HE RESPONDS CORRECTLY”

similar steps as those followed in lesion no.1 section II. Softening of the sound level can be done by increasing the distance between the child and the sound source or reducing the force with which the sound is made.

Understanding the meaning of other sounds:

Introduce those sounds in which the child has had practice earlier in section I. The child should now react appropriately while he hears the sound. You can use those sounds sources which are listed in section I. The activity here differs. Because the child should be taught that each sound has meaning. He should be shown where the sound comes from, and what that means and how he should respond to it. A few examples of the sound sources:

- Sound usually heard at home – pulling of chain, door bell, kitchen sounds, pooja sounds, grinding etc.
- Sounds made outdoor as cutting of the trees, hammering, vehicle sounds, and animal sounds.
- All the sounds used in section 1.

“SMILE IS ALSO A REWARD”

Worshiping the God

Lesson No. 2

Help your child give meaning to the loud fine sounds.

As stated in lesson No.2 section 1, this is not a easy task. For the child to achieve this activity he might need much, more trials than needed in earlier lessons. The child's hearing ability will be facilitated by such training in understanding fine sounds.

Materials:

God's picture or idol and flowers, conch.

Procedure:

When the conch is blown – the child should offer the flower to the God. The steps to be followed are same as in lesson No.1 section 2.

To train a child to understand and react to the sound in a formal situation is very difficult. It would be of great help to the child if he is made aware of the sound in informal situations where the sound is occurring on its own in natural situation because this is where the child has to give meaning to the sound and react appropriately. Make use of the situations as and when they arise. When you are walking on the street and you hear the sound of a lorry or a horn or a police whistle draws his attention to the sound and the source. The last part of section 2 lists more such activities which can be used with great benefits.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE PRACTICE IN PREVIOUS STEP”

Cough – is not an action alone:**Lesson No. 3**

Help the child to hear the sounds made by human beings as cough, yawn, sneeze, snore or loud laughter.

For your child to develop as a normal child in all respects he should be able to appreciate the sounds that we – hearing people hear. These do carry meaning.

Some of the musts:

- 1) Your child should be able to hear and react to loud and soft gross sounds.
- 2) The conditions of should I lesson I must be satisfied.

Material:

- 1) If possible record the sounds of cough 2) picture of a man coughing and a quiet man.

Procedure:**Step 1:**

Sit facing the child. Now you make a loud coughing sound. Let the child feel your throat and see you coughing. Ask him to imitate you. Then point to the man coughing.

Step 2:

If you have a record player use it. If not make the sound of cough yourself. You close the mouth of the man coughing as you indicate to the child that you hear the sound of a cough.

“EACH TIME YOU CHANGE TO NEXT STEP MAKE SURE YOUR CHILD RESPONDS SEVENTY PERCENT OF THE TIME IN THE PREVIOUS STEP”

Step 3:

Let the child close the mouth of the man in the picture while he sees you and feels your throat when you make the sound.

Step 4:

Now the should be trained to respond only by seeing you cough.

Step 5:

The child should be trained to respond without seeing but just hearing the cough.

You can take the help of the others to produce the sounds of cough. You can do the same with the sounds of laugh, sneeze, snore and yawn.

“YOU WILL HAVE TO GIVE SEVERAL TRIALS AT EACH STEP”

The doll hears.**Lesson No. 4**

To help the child understand the meaning of speech sounds.

The child should be trained to give meaning to the speech sounds. Initially make use of monosyllables - one sound with a vowel to which meaning can be attached. Later multisyllables can be used. This is to make the task easier. Here 'Ba' ('come' in Kannada) is used because it is voiced and obvious. You can use any sound but with a vowel in the beginning because it is louder.

Some of the musts:

He should be able to hear and give meaning to loud and soft gross sounds. The hearing aid must be in good working condition.

Material:

A doll.

Procedure:

You say the sound 'Ba'. Follow the procedure and steps as in lesson No.3 section I. Only the child's activity here varies. The child should move the doll slowly towards you one step everytime he hears the sound. As in lesson No. 1 by the step 5 (last) the child should respond on his own by bringing the doll closer without any additional help from you.

“MAINTAIN YOUR CHILD’S ATTENTION”

It is me.

Lesson No. 5

Help your child to understand the meaning of a word with many syllables.

All our languages contain many multiple syllable words and it is necessary for the child to understand these longer words if he is to be integrated satisfactorily with the hearing world.

Some of the musts:

- 1) Your child should be able to hear and understand loud and soft gross sounds.
- 2) He should understand monosyllable words.
- 3) He should also fulfill the condition in lesson No.1 section 1.

Material:

A paper with a picture of boy wearing the hearing aid drawn by you and a collection of seeds or grains.

Procedure:

Step 1:

You say the child's name when he is looking at you. Let the child feel your throat, cheek and puff of air. Show the picture that you have drawn and indicate to the child that you said his name and that the picture is his. Now you keep a seed on the outline of the picture.

“KEEP CHANGING THE RESPONSE ACTIVITY”

Step 2:

You say the child's name. Guide him to keep the seed on the picture. Let him have all the three sensory clues.

Step 3:

The child should now be trained to respond on his own. Let him have all the three clues.

Reduce the sensory clues one by one. The child at the final step should be able to respond (to keep the seed on the outline of the picture.) On his own when he hears you.

Speech sounds: (Meaningful)

Monosyllable

/Ba/ and /Ta/ in Kannada

/Aa/, /Ja/ and /Ma/ in Hindi

/Eee/ and /Ra/ in Telugu

Multisyllables

His name, Mummi, Pappa and the name of his siblings etc.

Activities:

- 1) Each time father comes home on his cycle, he should make the bell sound and the child should be trained to say 'Daddy'. If he has a scooter or a car the horn will be the signal.
- 2) The child has to be trained to go to the window

“CREATE GAMES FOR THE CHILD”

and see each time a dog barks or put the hay for the cow each time she moose.

- 3) In this section it is difficult to have auditory training sessions as such. Since the child has to give meaning to the sounds the child should be trained to hear and respond appropriately when sounds occurs in the environment. His activity as a response involves reacting appropriately to sound. When you think your child is familiar with most of the sound occurring around you, you can have some of the following activities.

Sound picnic:

When you go out on some work take your child with you. If you are in the city you can take the child on a street. Each time you hear sound you draw the child's attention to the sound and show him the source of the sound. If a bus is coming indicate that you are hearing the bus coming and point towards the bus. Next you may hear the horn of a car. Then a motor cycle may arrive. You will have a policeman whistling. You may come across an auction area. You may also face a vehicle passing around with loud announcement. Make a child aware of all these sounds and show to him the different sources of a sound.

“REMEMBER YOUR GOAL – YOUR CHILD SHOULD LISTEN AND UNDERSTAND
YOU WITHOUT YOUR HELP”

If you are in the village you can take a route passing the village farm where the ploughing will be going on. The farmer shouts to his cattle and that is a good sound. Then go to the field where all the cattle are grazing. The cow moves. You come to a barn where you may find hens cackling. You may pass a house when the dog is barking. You will also hear the sound of women washing clothes on your way. You can indicate to your child that you are hearing all these sounds as you face each sound.

After you are back at home, in your child's book write down the pictures of those sound sources that you heard on the streets. If you have a record player recorded the sounds. Play the record at home. If you do not have a record player mimic the sounds as you explain to the child. The order of presentation of sound should be same as that of previous exposure.

Likewise you can visit different places such as a Railway station, temple etc.

Let us have the Saraswathi puja:

Invite your friends and your child's friends home for a pooja. Let them know the purpose of the puja i.e., you are trying to help your child hear better. Tell your child about the puja and about the friends visiting home.

“GIVE HIM REWARD EVERYTIME HE RESPONDS CORRECTLY”

He should be told his responsibilities.

- 1) As each visitor comes home when they knock or ring the door bell he should go and receive them.
- 2) Next as the conch should is made he should pour one spoon of milk of God (Abisheka).
- 3) As the bell sound is made he should put one flower on the God.
- 4) As the going is being beaten he should do 'Arthi'.
- 5) Let the child give eatables to guests as the mother says 'give'.

You can make use of such other activities to help you child to understand what each sound means.

Speech activities:

- 1) While you are teaching monosyllables you can ask the child to imitate you.
- 2) While you introduce words like 'Haku' (put – in Kannada), let the child do the action. You give the sound from any particular source. Then the child is asked to put an object into the container. In this activity unless the child hears you say the word 'give' he should not put the object.
- 3) Yes I heard:

You can include this in your daily routine. You do not have to have a formal auditory training session for this

“SMILE IS ALSO A REWARD”

You call out your child from a little distance when the child is seeing you. He should come to you as a response to your calling him. Reward him by giving what ever he wants.

Next call him when he is not looking at you. But still at a closer distance. If he responds consistently (each time you call him) then increase the distance between you and him. If the child does not respond go nearer to him and ask him why he did not respond while his name was called. Try this again and again.

Listening diary:

You can let your child have a diary – a simple note book. In that he should record the sounds that he has heard each day. If he is a small child he can have some symbols or pictures to indicate the sounds that he has heard.

What did you hear?

When you child in the group, when a sound is heard you can ask each child what they heard. Each child can take turn to say first. Or children can make use of the diary – each child, recording what they have heard each day.

These will help you to evaluate how the child is progressing and improving in his auditory ability.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE HIM PRACTICE IN THE
PREVIOUS STEP”

Section 3: Discrimination

Musical chair:

Lesson No.1

Help your child to identify on and off.

Now your child might be responding appropriately to the sound when it is presented. The next stage that he should achieve is discriminating as to when the sound is present and when it is not. Yes this he did earlier. But now he should detect when the sound is off instead of when the sound is presented. This is more difficult than earlier step.

Some of the musts:

- 1) Your child must be able to hear and respond appropriately to loud and soft gross sounds.
- 2) Conditions of lesson No.1 section 1 must be satisfied.

Material:

Chairs. There should be five to six children, and a record player if available.

Procedure:

Explain the game of musical chair to your child and other children. Tell him that he is going to hear the music and he should keep going round the chairs as long as he hears the music. As soon as the music

“EACH TIME YOU CHANGE TO NEXT STEP MAKE SURE YOUR CHILD RESPONDS SEVENTY PERCENT OF THE TIME IN THE PREVIOUS STEP”

stops the child should sit down. If he does not get a chair to sit down then he is out.

First you have to sing a song as the child sees you and the game should be played. Later on the child should be instructed not to see you singing. He should be able to participate in the game like other children (by hearing and finding out and off).

Other activities:

Bus driver:

Material:

The sound source that you use (you can use any sound source motioned in section 1.)

Method:

Here the activity is reversal of usual one. The child should stop the movement he is making as a bus driver when he hears that sound is off and should be in the act of driver as long as he hears the sound.

Modification:

The child can make use of other toy vehicles instead of himself moving as a bus driver. He pushes the vehicle along as long as he hears the sound.

“YOU WILL HAVE TO GIVE SEVERAL TRIALS AT EACH STEP”

Lesson No.2

Help your child to discriminate gross sounds.

Your child might by now be responding to the sound accurately. But still some times he might have failed to react appropriately to two different sounds unable to find the difference between the two sounds. You need to train him. As you trained him to be aware of sound and go give meaning to the sound he should also be trained to discriminate between the sounds, to know that different sounds are made by different sources of sound. You start from the sounds which are loud and are very different from each other. Later as he succeeds you can reduce the loudness and reduce the difference between the two sounds so that your child is able to recognize as to when it is an alarm clock sound and when it is father's cycle bell.

Some of the musts:

- 1) Your child must be able to hear and respond appropriately to loud and soft gross sounds.
- 2) Conditions of lesion No.1 Section 1 must be satisfied.

Material:

Stone and hammer or any iron object, wooden table and a strong stick.

Procedure:**Step 1:**

Draw on the floor a big picture of a table, hammer

“MAINTAIN YOUR CHILD’S ATTENTION”

and a stone. Facing this keep the two sounds sources and you sit beside the child.

Step 3:

Bang the table. Let the child make use of visual and touch sensation. Now you jump into the picture of the table on the floor. Next make the sound with hammer on stone and jump on the picture of the hammer and show him the sound you are making and the picture jumping into. Let him see the similarity.

Step 4:

Each time you make the sound take your child's hand and jump into the appropriate picture on the floor.

Step 5:

Let the child on his own jump. Initially you can indicate to the child to jump into the appropriate compartment or picture. Later on he should do it on his own. All this time the child should be allowed to feel and see the sound being produced.

Step 6:

The child should be trained to jump into the compartments just by seeing and hearing the sound, the feeling is excluded.

Step 7:

You make the sound, keeping the sound source out of the sight of the child. The child should be trained

“KEEP CHANGING THE RESPONSE ACTIVITY”

in this step to respond properly with the help of hearing alone.

Further steps:

- 1) Train the child to differentiate the other sounds which are very different.
- 2) When the child succeeds in many of the combinations of the sounds which are different, use those two sounds whose sound qualities do not differ much. Eg. Vessel and spoon sound versus gong sound. Thus in the beginning train the child to discriminate two sounds which are very different. Later on reduce the difference between the two sounds and help the child to discriminate between more similar sounds.
- 3) Also train the child to differentiate two sounds when they are softer. This can be accomplished by increasing the distance between you and the child.
- 4) You increase the number of different sounds among which the child can discriminate.

You can use the combination of sounds of:

- 1) Kitchen sounds
- 2) Furniture sounds
- 3) Vehicle and animal sounds
- 4) Man made sounds.

“CREATE GAMES FOR THE CHILD”

In short use those sounds with which the child has been given earlier training. The child should be familiar with the sound you use. Therefore use those sounds that you would have used in Section 1.

Other activities

Some of the activities you can use are provided here for your guideline. You can think on the same line and create similar activities.

“Kunta – bille”

Have the picture of two objects (sound sources) drawn on the floor. Now your child should put the stone on the proper picture corresponding to the sound. Then jump on it, push it out with leg and step on it.

Catch the thief:

This is group activity. Have the sibling participate. Keep either the picture or the object that is making the sound along with other pictures or objects, at a distance from the child. Now when you make the sound the child should run and get the proper picture or object. Let the children take turns. Don't make it a race or if you feel you must make it a race to maintain interest tell the hearing sibling secretly that he must loose sometimes.

We can make use of the activities that are given in Section1.

“REMEMBER YOUR GOAL-YOUR CHILD SHOULD LISTEN AND UNDERSTAND YOU WITHOUT YOUR HELP”

Lesson No. 3

Help your child to discriminate pitches

As mentioned in lesson No.2 of Section 2 this is a step which becomes very difficult for some children. Some severely hard of hearing children may not achieve it even with great practice. If you have musical instruments at home you can help your child to increase his hearing performance. You can move to the next lessons if you are not able to give this lesson or if you find that even with repeated trials your child finds great difficulty with this step.

Some of the musts:

Your child should be able to hear loud gross sounds and find the difference between two different gross sounds which may be very different or slightly different.

Material:

Draw a rectangle on a large piece of paper or on the floor. Draw the dots in it in rows. Have the middle portion of the rectangle shaded. You can use coloured chalk or pencils to draw the dots.

Procedure:

Steps to be followed are similar to lesson No. 1 Section 3. But here when you play a low note on the instrument the response should be to encircle one of the

“GIVE HIM REWARD EVERY TIME HE RESPONDS CORRECTLY”

dots at the lower end and when you play a high note let the child encircle the dot at the higher end. Make the child understand his response to the sound. You can use gestures to explain the procedure. Remember the child uses the higher or North position of the rectangle for high notes and the lower or South end for low notes.

As in lesson No.2 reduce the difference between the two notes gradually. Also train your child to hear when the sound is soft.

Other fine sounds that you can use in this lesson:

You can make use of the musical instruments if you have at home. If not you can use conches of different size producing different sounds, or conch vs. whistle, or whistle vs. alarm etc. The child can be trained to discriminate among the notes as low and high 'Ga'.

Other activities:

- 1) You can have a cardboard with a band passing around it vertically and medially. Next have the pictures of the sound sources drawn on narrow strip of paper and attach it to the vertical band so that it can be moved. The child will have to move the picture up and down depending on the sound.

“SMILE IS ALSO A REWARD”

- 2) Have pictures of the sound source or any cutting. The child should stick the pictures at top of the book when he hears a high sound and at the bottom when he hears a low sound.

Modification:

Several other objects can be used to keep at high and low places.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE PRACTICE IN PREVIOUS STEP”

Lesson No. 4

Help your child to differentiate loud and soft sounds.

This will help your child to perform effectively in the hearing world. The child will be able to know whether the sound is from a distance or from near-by area. He can know where and how far the sound source is and act suitably.

Some of the musts:

The condition of lesson No.1 Section 3 should be satisfied.

Material:

Have thick and thin strips of paper. Take a brass plate and wooden piece to beat it. Use a puja gong if you have one at home.

Procedure:**Step: 1**

Let the child see you making the sound. Make a loud sound. Then indicate to the child that it is very loud by contorting the face and putting finger into your ear (closing the ear). Say it is very loud. Then make a soft sound. Indicate to the child that it is very soft.

Step 2:

Now when you make a loud sound, fold the thick strip

“GIVE HIM REWARD EVERY TIME HE RESPONDS CORRECTLY”

of paper into a loop while you indicate to the child that it is very loud. Then make softer sound. Take a thinner strip of paper and fold it around the first loop.

Step: 3

The child should respond to the sounds under your guidance by folding the strip of paper corresponding to the sound heard.

Step: 4

Now the child should be trained to respond without your help.

Step: 5

The child should be trained to react appropriately when the sound is made out of his sight. This indicates that he is differentiating loud and soft sounds on the basis of hearing.

Other sound sources:

You can make use of other sounds sources to produce fast and slow tempos. The other sound sources should be familiar to the child. You can use any of the should sources from Section 1.

Other activities:

- 1) You can have squares on the floor with one large and one small figure written in each of the square. The child should jump into appropriate figure depending on the loudness of the sound.

“SMILS IS ALSO A REWARD”

- 2) The game of 'Kunta Bille' can be modified. The child will have to throw the stone into appropriate square having the picture of sound source, either a large picture or a small picture – large for the loud sound and small for the soft sound.

3) **Worship**

Materials:

Two idols of God – one big and one small and milk or water.

Method:

The child should put water on the idol whenever he hears the sound. Here the idol on which the child is going to pour water varies depending on the sound given. If loud sound is given child should pour water on big sized idol and if soft sound is given vice versa.

Modification:

If you have flowers at home, have two sized flowers – big and small. The child should put appropriate flowers depending on the loudness of the sound.

4) **Let us paint:**

Material:

Water colour paint and paper.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE PRACTICE IN PREVIOUS STEP”

Method:

Draw the picture of sound source on the paper varying in size. The child should colour the appropriate picture depending on the loudness of the sound heard.

Modification:

Let a child either stick or paint appropriate sized picture.

“EACH TIME YOU CHANGE TO NEXT STEP MAKES SURE YOUR CHILD RESPONDS SEVENTY PERCENT OF THE TIME IN THE PREVIOUS STEP”

Lesson No.5

Help your child to develop auditory memory.

Auditory memory is one of the most important aspects the man should have to function like a normal. We make use of auditory memory most of the time, more than we do visual memory. Auditory memory consists of retaining and reproducing the occurrence of the order of the sound. We want to recognize how many beats or how many words we have heard. Therefore training a child to improve auditory memory is essential.

Some of the musts:

- 1) The child must fulfill the condition of lesson No.1 Section 3.
- 2) He should be able to count atleast upto 5.

Material:

Have a sound source-may be a tin and spoon. Make use of vegetables or seeds. Have a box or draw a circle on the floor.

Procedure:**Step 1:**

Now let the child sit facing you. Keep the tin in front of you. Beat the tin with the spoon once, while the child is watching you and place one vegetable or seed in the box or circle you have drawn on the floor. Beat the

“YOU WILL HAVE TO GIVE SEVERAL TRIALS AT EACH STEP”

tin twice. Keep two vegetables in the circle. Indicate to your child that you beat once and you keep one vegetable and when you beat twice you keep two vegetables.

Step 2:

You beat the tin. The child should keep the vegetables. You can help the child initially by indicating, Later he should do without your help. Let him see you beating the tin.

Step 3:

Now let not the child see you beating the tin. He should be trained how to make a difference between one beat and two beats by hearing.

Further Step:

Train the child to differentiate one and three beats, two and four beats. Later reduce the difference between the number of beats.

Give the child training with different sound sources that he is familiar with.

Other activities:

Bounce the ball:

- 1) The child should bounce the ball as many times as he hears as sound.
- 2) The child can bathe a doll, pouring water as many times as she hears the sound. If two strokes are given

“MAINTAIN YOUR CHILD’S ATTENTION”

let the child pour the water twice.

- 3) The child can make houses or the objects with lines by drawing particular No. of lines depending on the sound pattern.
- 4) **Jump into ‘ ? ’**

Material:

A chalk piece.

Method:

If the child can read and understand numbers, have the compartments made on the floor. The child should jump in the appropriate compartment depending on the number of strokes he has heard or he can locate the source of sound and jump a number of times equal to the number of beats.

“KEEP CHANGING THE RESPONSE ACTIVITY”

Lesson No. 6

Help your child to differentiate fast and slow tempos.

Some of the musts:

The conditions of lesson No.1 Section 3 should be satisfied.

Materials:

A toy car or doll and a tin with spoon or a strong stick and a table.

Procedure:**Step 1:**

Draw a road on the floor or table and keep the car at one end. Now if you have a table beat the table slowly (not softly) while the child is watching you. Move the car slowly. Next beat faster and move the car faster. Explain your action to the child. Let him know the relation between the rate of beating and the speed of the car.

Step 2:

When you give the sound let the child move the car with your guidance.

Step 3:

You give the sound at different speeds. Train the child to move the car appropriately without your help.

“CREATE GAMES FOR THE CHILD”

Step 4:

Now let the child not see you making the sound. Train the child to respond by hearing.

You can make use of other sound sources to produce fast and slow tempos. You can use any of the sound sources listed in section 1.

Other activities:

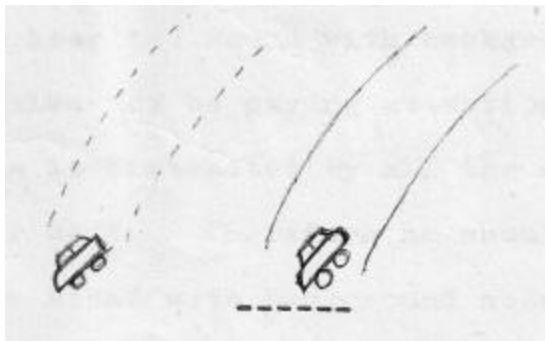
- 1) He should vary his speed depending on the tempo of the sound. He can walk and then shifted to run.
- 2) **Car race:**

Material:

A chalk piece and two toy cars.

Method:

You can have two routes and two objects in two routes. One of the routes should be formed by a dotted line indicating slowness and the other should be formed by a solid line without breaks indicating fastness. The child should move the appropriate car or object depending on the tempo of the sound.



“REMEMBER YOUR GOAL – YOUR CHILD SHOULD LISTEN AND

UNDERSTAND YOU WITHOUT YOUR HELP”

Lesson No. 7

Help your child to hear the sound when there is background noise.

We do not normally get sounds that occur in quiet. Our world is always full of sounds. There is always something going on and the sound is always in the background. We hear some sounds and respond to it because they are loud compared to the background sound and therefore draws our attention. Therefore it is important to teach your child to hear the sounds with background sound. Of course even as you have done all these activities there has been some background noise and your child has been hearing in noise. However it will help the child if he is given more training to respond even with greater noise.

Remember the child, I had mentioned earlier in the manual, who responds peculiarly to sound, either inconsistently or responds only to some stimuli. He will benefit into large scale with such a training. Here he is trained to hear the sound with background sound. His actual problem may be paying attention to one particular sound. He is distracted by all the sounds whether they are loud or soft. Therefore he should be given training to hear the sound with background noise so that he will learn to ignore the background noise.

“GIVE HIM REWARD EVERY TIME HE RESPONDS CORRECTLY”

Some of the musts:

Condition of lesion No. 1 Section 3 must be satisfied.

Material:

Tap and bucket, tin and stick. You may use the kitchen or bathroom for this lesson.

Procedure:

Here the steps to be followed are the same as those in lesson No.1 Section 1. Except that here the sound of the tap water falling in the bucket is kept on throughout the session. You can make use of a radio as background sound source. If you do not have provision for it at home, train the child while somebody is washing cloth in background. The main thing is that the tap water is running and making noise. This or any of the other noises can be the background noise. The child must respond appropriately to the tin being struck with the sticks. You may ask the child to keep a count of the beats or even follow the rate and rhythm of the beats. He should learn to hear the tin sound even with the background noise of water.

Further step:

Initially remember to choose sounds that are very different from the background sounds.
The background

“SMILS IS ALSO A REWARD”

sound should be very soft in the beginning. Later the difference between the ‘trial’ sound (tin strikes) and background sound (water) can be reduced gradually and the background activity can be made louder. This is accomplished by decreasing the distance between the child and the background activity area.

You can use any background noise and any other sound activity as the ‘trial’ sound activity.

Other activity:

Those activities that you take up for lesson No.1 in Section 1 can be used here also.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE PRACTICE IN PREVIOUS STEP”

Lesson No. 8

Help your child to respond to different patterns of beats.

To listen and perceive the pattern of sound occurrence is an additional ability to approximate normal hearing. The child will have to be trained in this ability to dance and sing. He should have the concept of beats. Therefore provide your child basic training to function normally.

Some of the musts:

- 1) The child should have seventy percent success in all the seven lessons of Section three.
- 2) The child must fulfill the conditions of lesson No.5 section3.

Material:

Grains.

Procedure:

Beat the sound source (any of the one used in section 1) with a pattern. Vary the rhythm of the beat Eg. Two fast and two slow or one beat and two fast beats with a gap. Here the child can respond by keeping the grain in particular order depending on the sound pattern. If you beat two fast and two slow beats with a gap between the two, place the grains in the order [o o o o] – two grains near – a gap – two grains with little space between them.

“EACH TIME YOU CHANGE TO NEXT STEP MAKE SURE YOUR CHILD RESPONDS SEVENTY PERCENT OF THE TIME IN THE PREVIOUS STEP”

The pattern can be varied as o oo
 oooo or
 ooo o and so on.

Other activity:

Material:

Paper cut outs of the picture of sound source.

Method:

The child should arrange the paper cut outs in the order of the auditory pattern he hears.

Modifications:

- 1) Make use of beats or stones instead of paper cut outs.
- 2) To make the task complex, train your child to discriminate two different patterns of beats. Have two different patterns written on the floor or paper as o oo / oo o.
The child should be trained to colour the appropriate pattern drawn.

The activities that are provided here are for your guidance. Do not restrict yourself to only these activities. Remember your child's interest shifts very fast. So with the guideline given here create more interesting activities.

“YOU WILL HAVE TO GIVE SEVERAL TRAILS AT EACH STEP”

Section 4:

Speech discrimination:

Lesson No.1:

Help your child to discriminate between long vowel and consonant.

Remember one of the main functions of hearing is to develop speech. To learn speech your child has to understand speech. You can train your child to understand speech by teaching him to find the difference between the speech. You can train your child to understand speech by teaching him to find the difference between the speech sounds. Only when he finds out that speech sounds are different he will be able to understand speech later. If he is not trained he will not be able to discriminate one sound from another. For him all sounds are similar. Therefore train him to understand speech.

Some of the musts:

- 1) Conditions of lesson No. 1 and Section 3 must be satisfied.
- 2) The child should be able to discriminate gross sound.

Material:

A carom board coin and a piece of chalk.

Procedure:

Select a vowel which is loud (Aa) which can be continued and another consonant (Ba) for auditory training. Now draw the two sounds the vowel (Aa) and consonant (Ba)

“MAINTAIN YOUR CHILD’S ATTENTION”

on the floor. Let them big in size. Put a toy or picture of elephant for vowel (Aa-Aane) and that of a bus for consonant (Ba). Mark a point on the floor at a distance from them so that if you have to move from the point to the consonant you have to move diagonally. Now you and your child sit opposite to each other with the letters in between you. Initially you can sit close to your child. Say the vowel. Let the child see you and feel your throat. Now strike the coin in the direction of (Aa) so that the picture of elephant falls down. Indicate to the child that you have said (Aa) and are therefore striking elephant (Aane). Next say the consonant. Let the child feel your throat and see you making the sound. Strike the coin in the direction of bus.



Follow the steps of the lesson No.3 in Section 2 except that in this lesson the child has to make differential response to two different sounds and that the activity here differs.

As the child gets practice in the lesson you sit on the other side of the letter. Now both you and your child take part in striking alternatively, while you also say

“KEEP CHANGING THE RESPONSE ACTIVITY”

sounds alternatively once your child and once you.

Further step:

Train your child to discriminate different combinations of vowels and consonants.

Lesson No. 2

Help your child to discriminate long vowel and a different short vowel.

Material:

A paper and pencil – two different coloured pencils. Have another child.

Procedure:

Have the paper and draw dots on it. Sit next to your child. Say the long vowel /Aa/ /ə/. Let the child feel your throat. Make child aware of the length of vowel. Draw the line joining 2 or 3 dots. Next say the different short vowel /oo/. Say it short. Draw a line but with a different coloured pencil joining two dots. Explain to the child while you say the vowel and draw the line. Let him understand why you are drawing varying lengths of lines.

Proceed along the same steps as described in lesson No.3 Section 1. except that child will have to differentiate

“CREATE GAMES FOR THE CHILD”

two vowels. After the child succeeds in giving appropriate response help the child in playing the dot game along with his sibling or friend. The child should join the dots either 2 or 3 depending on the vowel heard. (2 dots for short vowel and 3 dots for long vowel). The child who makes a large number of squares is rewarded at the end of the session.

Further steps:

When your child succeeds in differentiating different combinations of long vowel and different short vowels move on to the next steps – that is train your child to discriminate same vowel but long and short. Use the vowel in the order as given in Section 1. You can use the same activity as given above but use the same colour pencil to indicate that it is the same vowel. To denote that the length of the vowel are different vary the number of dots the child is joining.

“REMEMBER YOUR GOAL – YOUR CHILD SHOULD LISTEN AND UNDERSTAND YOU WITHOUT YOUR HELP”

Lesson No. 3

Help your child to discriminate multisyllables (many sounds joined together) and monosyllables.

Some of the musts:

1. Child should be capable of recognizing the speech sounds.
2. The hearing aid should be in working condition.

Material:

A form similar to snakes and ladders.

Procedure:

Say a monosyllable word - /Sa/. When you say that the child should feel the escape of air and also the vibration at the throat. He should be trained to move the coin through the snake's body making a downward movement. Next say the word 'climb' (multisyllable). Now the child should be trained to move the coin along the picture of ladder in an upward direction. The child should be given several trials in this and should be trained to make different responses (meaningful) to two different sounds.

“GIVE HIM REWARD EVERY TIME HE RESPONDS CORRECTLY”

Lesson No. 4

Help your child to discriminate between two monosyllables.

Some of the musts:

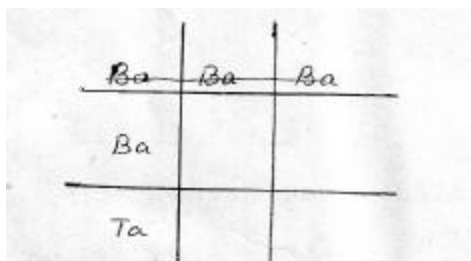
The child should be aware of the monosyllables. He should be able to write.

Material:

A piece of chalk.

Procedure:**Step 1:**

Make use of the game Tic-Tac-Toe. Use a sibling to help you. Make your child sit in front of you. Have the figure for the game Tic-Tac-Toe. Now assign a letter to each child. Your hard of hearing child may be given the sound /Ba/ i.e., he has to respond by writing /Ba/ every time the sound is said. Assign the sound /Ta/ to your normal hearing child. He has to make another symbol /Ta/ while the sound is said.

**Step 2:**

Now say the sound /Ba/. Train your child to make the symbol as he hears the sound. Let him initially feel the throat and see you making the sounds. Now say the sound /Ta/ Tell your chard of hearing child that it is not his turn

“SMILE IS ALSO A REWARD”

because you have said a different sound. Direct your normal child to respond. Give several trails. The child has to try to write the sound in series so that he can cut in diagonally or horizontally.

Step 3:

Several trials should be given. Now your child should be trained to play the game efficiently by marking the symbol each time he hears the sound that he is to respond to and not react to the sound that is not his.

Further step:

Train your child to discriminate different combinations of sounds.

Lesson No. 5

Help your child to discriminate between two multisyllable words.

Some of the musts:

He should be able to recognize his name. No material is needed.

Procedure:

Have a group of children so that a child can play with them. You might be remembering the game of LONDON. You can make use of that game to teach your child to discriminate between his name and other names.

“WHEN YOUR CHILD FAILS IN THE NEW STEP, GIVE PRACTICE IN PREVIOUS STEP”

Step 1:

Let all the children stand in a line. Explain the game to the children. As in the game of London here the movement is backward, and the game is over when they cross the demarcation line at the other end. Each child should move a step backward when they hear their name being called and should not move when there is silence or when somebody else's name is called.

Step 2:

Call out your child's name. Let him see you calling. Ask him to move a step backward. Explain to him that his name was called. Next call any other child's name. Tell your child not to move because it is not his name. The child whose name is being called should move a step back. Show this to your child explaining to him that his name was called and he is therefore moving. Give practice in this by calling names of other children. Change the order of calling.

Step 3:

Now turn your back to the child. He should be able to move when his name is called even when he is not able to see you.

You can train your child to respond to these words by making use of different activities. You can modify

“EACH TIME YOU CHANGE TO NEXT STEP MAKE SURE YOUR CHILD RESPONDS SEVENTY PERCENT OF THE TIME IN THE PREVIOUS STEP”

the usual games the children play. However initially see to it that the two words are very different to listen. Later as you train your child with several drills you can use more similar sounding words.

“YOU WILL HAVE TO GIVE SEVERAL TRIALS AT EACH STEP”

Section 5:

Further procedures in speech comprehension.

Due to lack of time exercises for speech discrimination and comprehension has not been explained.

However, once your child is able to discriminate his name and others, train your child to discriminate other words. Let the words you use be very different in the beginning. Later on as the child gets practice you can reduce the difference between the two words. The words may be different having different sets of syllables. Later on difference is reduced by keeping some of the syllables constant and varying any one syllable. 'Thus a child who is able to discriminate 'chair' and 'table' should be trained to discriminate 'chair' and 'bear'. The difference in the words can be made on the initial, middle or final syllable.

The words that you can use:

Tree-worm	Shoes-Juice	box-ball	Cat-Coat
Flower-Gown	Hat-Bat	Book-Bead	Book-Boat
Ball-Chalk etc.	Man-Pan	Shoes-Shirt	Bat-Beat
	Book-Cook	Mat-Man	Bite-Bike
	Hat-Cat	Sand-Sack	Sail-Sale
	Car-Jar etc.		

Now that you have trained your child to discriminate the words (different and similar) make use of nursery rhymes to make auditory training more interesting.

Eg. I saw a mouse

run under a house

or

The little frog

sat on a dog etc.

The child can do the action or imitate you. Make use of those activities explained in other sections. Modify them your child can be later trained to understand two or three word sentences. He can be taught to carry out your commands. In the beginning make use of single commands. Later as he improves give double commands.

Your child can be helped to enjoy stories. Tell him stories using sentences and make use of demonstrations in the beginning. You can evaluate his comprehension by asking him questions or leaving a gap.

Tell him the daily incidents. But always keep the length of your sentence small in the beginning. Later on you can increase the sentence length.

Now that you have given training to your child till this level, you can talk of him as if he were having normal hearing.

Limitations of the manual:

- 1) In this manual the training for localization of sound has not been given, because such a training is possible only with binaural hearing aids. Most of the Indian children have and buy monaural hearing aids. With monaural hearing aids localization is difficult unless the child keeps changing the position of hearing aid. Therefore training for localization is difficult and therefore not provided here.
- 2) The manual at present is written in English and becomes very difficult for some of the parents to read.
- 3) Most of the examples are given in Kannada.
- 4) The lessons and activities of this manual has not yet been tried by any parents or therapists.
- 5) More pictures for demonstration have not been included due to lack of time.
- 6) Due to shortage of time details of Section 5 has not been explained. Lessons for rhythm and intonation training has not been provided for the same reason.

Recommendations:

- 1) The manual has to be translated in other Indian language.
- 2) The lessons and activities of this manual has to be carried out by therapist and parents and their opinion

from practical application has to be considered.

- 3) More pictures for different lessons have to be included.
- 4) Effort should be made to explain the training in speech perception, rhythm and intonation.

BIBLIOGRAPHY

- BROBERG, F.ROSE., Guidelines for nurses working with hearing impaired children. Volta Review, 70, 552-558 (1968).
- CRATTY, J. BYRANT., Active Learning: Games to enhance academic abilities. New Jersey, Prentice Hall (1971).
- EWING & EWING., New Opportunities for deaf children. London, Univ. Press, 8-18 (1958).
- FLETECHER & BERG., The Hard of hearing child: Clinical and Educational management. In Fletcher (Ed.), Acoustic Phonetics. New York, Grune & Stratton, 57-85 (1970).
- HURLOCK, B.ELIZABETH., Child growth and development. New York, Mc.Graw Hill, 241-257 (1970).
- JOHNSON, JUNE., 838 ways to amuse a child. New York, Collier Books (1962).
- LOWEL & STONES., Play it by Ear: Auditory training game. John Tracy Clinic.
- MATTERSON, E.M., Play with a purpose for under sevens. Britain, Penguin Books (1965).
- Mc DERMOTT, F.E., Auditory training: learning the joy of listening. Volta Review, 73, No. 3, 182-185 (1971).
- MYKLEBUST, R. HELMER., Your deaf child: a guide for parents. In Confield (Ed.), A monograph in American Lectures in Otolaryngology (1970).
- OYER & HUBERT., Auditory Communication for the hard of hearing. New Jersey, Prentice Hall, Inc., (1966).
- RATHNA, N., Hearing Integration. A paper presented at the Indo-Danish Seminar on Speech & Hearing Oct. 26-31st (1975).
- ROLLINS, C.JOAN., I heard that! – Auditory training at home. Volta Review, 74, No. 7, 426-432 (1972).

STANT, A. MARGARE, The young child – his activities & materials. New Jersey, Prentice Hall Inc., (1972).

STRENG, ALICE., Education of children with mil and moderate hearing loss. Hearing therapy for children. New York, Grune & Stratton, 184-236 (19).

THE INTERNATIONAL PARENT’S ORGANISATION;, A Teacher writes to parents about auditory training. Volta Review, 70, No. 7, 569 (1969).

TRACY, SPENCER., et al., If you have a deaf child. Illinois annual school for mothers of deaf children.

VAN GEETAL., Team approach: The one solution in developing countries. Mookdhwani, 6, (1963).

WINFRED, H. NORTHCOTT., Curriculum to guide hearing impaired children – Birth to 3 years – and their parents. (A family-oriented, Homecentered program). The Alexander Graham Bell Association for the deaf, Inc., Washington D. C, (1971).

