CHAPTER V
INTERVENTION

Children learn to talk because they have something to say. Bloom (1972) pinpoints an important aspect of designing a language teaching program which is that no children should be expected to produce language in isolation from a meaningful environment (cited in Paul berry, 1976). Designing an appropriate language intervention program after the language assessment and analysis is crucial. A detailed description of a child’s use of all the components of language, that is, phonology, morphology, semantics and syntax are needed to meet this purpose. Intervention is an intentional attempt to make the child or individual to improve the existing communicative behaviours and to facilitate the development of new communicative behaviours. The information that is received from the assessment data along with the case history of the cases contributes in designing and executing an intervention program. Assessment helps to begin the intervention in the stage of their current level of functioning of linguistic stage. The family history of the case along with clinical profile such as place of delivery, prenatal and postnatal complications, intelligence level, milestone development, present level of communication, mode of expression, intelligibility of speech etc have to be taken into consideration while preparing the intervention program. Language intervention is not a single person task. It requires services from more than one discipline. Therefore, a multidisciplinary
team is advocated for an effective language intervention program. The family members, psychologists, speech language pathologists, linguists, special education teachers, speech therapists, social workers, etc can be the members of the intervention team. The family members can provide all the details of the child and have an active role in twenty four hours oriented intervention program. The psychologists can assess the intelligence level as well as the behavioural and cognitive level of the child. The speech pathologists along with the linguists can work on the language assessment of the child. The role of the linguist in language intervention is that the language data can be transcribed and analyzed psycholinguistically and suggestions could be given in its psycholinguistic aspects for the preparation of the intervention program. The speech pathologist can prepare and conduct intervention with the help of special educators and social workers. Rather than dividing the functions of each member it will be more fruitful that they can work together as a team in all levels of intervention.

5.1 Need for an Intervention Program

The primary aim of communication intervention program in retardates is to enhance the higher levels of cognitive functioning or the information processing skills such as attention, perception, memory etc. Attention is the awareness of a learning situation and active cognitive processing which involves orientation, reaction and discrimination. Orientation is the ability to sustain attention over time. Reaction time refers to the amount of time required for an individual to respond to a
stimulus and discrimination is the ability to identify differing stimuli from the field of similar stimuli. Perception includes the organization of input material. The perceived things are stored in the memory. This planned information is executed for functions like recognition, comprehension, judgment, planning, decision making and problem solving. The ability to retrieve needed information from the memory which is previously learned is necessary to recall or remember. This is the information processing system needed for effective communication. Deficiency in information processing reduces the ability to compare new information with the stored information from previous learning. Since these retarded children have comparatively low cognitive functioning, it takes a longer time and more practice for them to understand the dimensions of the task. The goal of intervention program prepared should aim to develop these skills. The prescribed intervention should meet all the steps to develop all these cognitive functioning.

5.2 Environment

With the right environment and training program, children with mental retardation can show improvements in current skills and can begin to make progress with new skills. So the environment in which intervention is conducted has much importance. Traditionally language intervention was performed in small rooms or areas in a belief that it would provide a quiet location where specific goals of the therapy could be given effectively. It was assumed that here the child will get opportunities to learn and practice in a less competitive atmosphere. But
The drawback of the context was that the child may withdraw from the peer group and will not be capable of selecting a speech model from the peer group and so will be less socialized with peers. There will not be enough speech exposition and he is likely to be isolated. Inclusion is a recent term that emerged in this field. It makes possible for the children to learn regardless of their level of ability. Complete inclusion is a good idea where everyone belongs to is accepted and supported by each other. But this method has its own drawbacks. Since each child needs individual care depending on their level of ability and performance, it may be difficult for them in a complete inclusion setting. Even though small room environment is very much important for the children to be educated individually, part of their learning time can be utilized for socialization where they will get peer group interaction and language exposure. During this time the stimulator can assess them, analyze the problems and plan for intervention. Part of the time they can be taught separately thereby meeting the goal of the prepared intervention, which can give better results by meeting the advantages of both the environments for the retarded population. The techniques of intervention can be improved by making it more nature friendly that the children can be brought out to nature to learn directly from the nature or in a natural setting. Intervention environment that has been noticed in the SIMH is small room atmosphere.
5.3 Common Intervention Strategies

Four typically used strategies for teaching receptive and expressive language is given here along with their usefulness.

5.3.1 Teaching Comprehension Skills

In this situation, the student is initially asked to choose from two or more alternatives as a response to a question like ‘show me the keys’. The response is typically pointing to a correct alternative. Generally, a reward is presented on a correct response. This strategy is well tried and can be effective if judged by acquisition of correct responds to the situation. However, the situation is peculiar for many reasons. The situation is entirely controlled by the teacher who decides what should be talked about and what the responses shall be. Further it is a very artificial teaching strategy when compared to normal acquisition of language.

5.3.2 Teaching Instruction Following

Rather than teaching the child to point a specific object students are taught to follow instructions such as ‘come here’, ‘sit down’, ‘go there’ etc. This can be used while teaching two term constructions such as noun + verb in many combinations. But the situation is highly teacher controlled.

5.3.3 Imitation Training

Modeling is used by the teacher with the child and the child should respond by copying as precisely as possible. With practice the child may
learn to imitate novel responses. The teaching situation is highly artificial and the imitation stimuli are typically controlled by the teacher.

5.3.4 Teaching Expressive Skills

The most frequently used procedure for teaching expressive skills is to show the student an object, picture or event and say 'look here', 'what is this' (Naming) etc. If the child responds correctly he is rewarded. If incorrect, prompt is provided and rewarded. This procedure can be effective.

These strategies suggest that children are made to either imitate, name, or describe the objects, events or people. However it must be remembered that teaching the individual to imitate, to name or to describe will not necessarily lead to using the vocabulary and syntax, which the child acquired for other purposes. Moreover, in the strategies mentioned above the child is a passive participant who reacts only when asked. So the major facilitating aspect in the acquisition of language and communication by the retarded children is the modification of the child's environment. Modifying the environment leads us to create an effective communication context. The environment should be created in such a way that the child becomes an active member of communication. Theory of known to unknown is an important basic principle in the intervention of retardates. Intervention should start from the known item to the unknown item where grasping of new knowledge becomes easier.
5.4 Individualised Education Program (IEP)

Individualised Education Program is mandated by Individuals with Disabilities Education Act (IDEA). IEP is designed to meet unique educational needs of each disabled child. Each IEP is designed for one student, that is, it is individual oriented program. The main purpose of IEP is to provide appropriate education and training to every mentally retarded child as no two such children have similar abilities and needs. Parents, teachers, special educators, speech language pathologists and different other professionals are working together to create an effective IEP. IEP is legally accepted and must be given to each child who needs special education. Other intervention methods, if incorporated with IEP, can provide better results. After evaluating the present language performance IEP can be prepared for each target of stimulation separately for each child. Assessment is one of the most important components of IEP because the whole program depends on the assessment in order to select instruction at goals and objectives. The family background information along with prenatal, natal, post natal and developmental history and other relevant factors are to be collected first. The other information need to be derived from assessment for IEP development is ‘the current level of functioning of the child, effective sensory channel through which the child learns, the existing behavior problem of the child and the effective reinforcement program which can be given. The basic principle is to accept the child at his level and set goals and frame objectives. Goal is an achievement anticipated from a child. It is a prediction. An annual goal represents achievement
anticipated from a child in an academic year. Goal set too high or too low will not benefit the child. So the goals chosen must be suited to the child’s age, ability and needs. For example, the selected goal is to teach the concept of ‘tomato’ to the child ‘x’, first the teacher evaluates the current level of functioning of the child and concludes that the child can follow simple instructions and can identify at least something like onion. Then the procedure starts. Teacher shows tomato and says that “this is a tomato. In order to motivate the child, teacher says tomato is a vegetable; we use it to prepare sambar, curry, and juice. Today let us learn to identify tomato”. Then the teacher provides tomato to the children. In the next step, she provides tomato and potato and then asks them to identify tomato. The teacher provides tomato, potato, and onion and then asks them to identify tomato. Then the teacher provides tomato, potato, onion, and beet root and asks them to identify tomato. Finally the teacher provides various vegetables and asks them to identify tomato. In each steps teacher provides appropriate prompts and gradually fades out of prompts. Teacher distributes sweets to each child as reinforcement when they identify tomato. The evaluation is done at the end of IEP to determine the success of program and it must be continuous and should lead to further planning of program for the child.

5.5 Psycholinguistic Approach of intervention

The psycholinguistic approach of intervention can be given by interpreting the assessment data. This approach does not work alone. Information extracted from psycholinguistic perspective assessment data
can be mixed with other essential perspectives for planning and evaluating an efficient intervention program. The psycholinguistic approach explores how a child receives different types of information (visual or auditory cues), remembers and stores it within lexical representations. There is no specific material required for psycholinguistic intervention. Rather all resources can be used in a psycholinguistic way to build lexical representations.

5.6 Computer Assisted Psycholinguistic Approach of Intervention

Research conducted with learning disabled, mentally retarded, hearing impaired, emotionally disturbed, and language disordered students indicates that their achievement levels are greater with Computer assisted instruction than with conventional instruction alone (Philips, John Arul, 2001). Computer assisted instruction refers to any kind of computer use in educational settings and includes drills and practice, tutorials, simulations, instructional management, and other applications. For this, it is needed to introduce a personal computer in a classroom. It originates from the Skinner’s programmed instructions (Schiefelbusch, 1978) that the tasks are broken up into manageable units and arranged sequentially catering to individual’s pace of learning. It enables the development of non-linear lessons and the incorporation of multimedia facilities including audio, video and animation with the aim of enhancing interactivity with the learner. Mentally retarded children do better in environments where visual aids such as pictures, animations etc
are used as much as possible. Such visual components are useful for helping students to be more attentive.

The primary aim of such a kind of an intervention is to motivate the child to learn. The retarded children have very short attention span. So it is important to bring out their interest in learning. Developing interest will automatically improve the attention span of the child. When pictures, moving objects in a colorful background in an animated setting etc. are given, the child will be motivated to attend the stimulus and thereby develop an interest in learning. And the child will be attracted to the new way of technology based learning. Visual stimulations can improve memory more than auditory stimulation. So this kind of study will improve the memory better than in the traditional way of learning.

Computer or technology assisted learning is a cognitive constructivist conceptual framework which can be used as a stimulation to improve the cognitive skills such as attention, perception, memory and to enhance self esteem of the child to speak. Retarded children are able to grasp concrete ideas rather than abstract ideas. So there must be an ample use of audio visual aids in the instructional process. Using the audio visual technology, the stimulator can create real world situations by using concrete things and then step by step can go to abstract things. This can be introduced to all levels of communication including vocabulary, sentence structure, grammar etc and the stimulator can monitor the pronunciation of the child. The stimulator should be aware of the fact that a friendly approach is important to an intervention.
At first, intervention should be planned properly and then only it should be implemented. The stimulator should understand the actual need of the children for communication. After the assessment and analysis of the language problems, the stimulator should list out the issues in the language behavior of the children, understand their needs, and then plan for intervention. This stage of intervention can be called as planning phase. The completed profiles of a child will make the stimulator aware of the child’s strengths and weaknesses, and indicate which dimensions are underdeveloped and in greater need of facilitation. There should be adequate database for meeting the needs of the child before starting intervention. Designing a specific language curriculum is important and should include all the grammatical categories such as nouns, verbs, adjectives, adverbs, singular and plural forms, question forms, negative forms, tense markers, case markers etc. Intervention should be individual based not group based. Rather than an intervention setting it should be a communication interaction type in which the child may not feel that he is learning something new. This phase of intervention in which the program is implemented is called implementing phase.

The stimulator should be aware of different variables of intervention such as stimulus and mode of stimulus whether it is auditory or visual; response and mode of response whether it is verbal or non-verbal; complexity of language used by both the child and the stimulator etc. He should allow the child to express himself in his own way. He should patiently listen and understand what the child says. The stimulator should not try to complete or expand the words and sentences produced
by the child who makes pauses in between while searching for what to say. Instead he should give visual or audio cues to bring attention and to stimulate the child to talk by changing the picture, colour etc. This is for the memory retrieval practice for the child and the stimulus selected for this purpose should be basic vocabulary items which have already been known to the child. This is the starting phase. For example, to elicit the expected response of /amma tuṇi kalukunnu/ ‘mother washes clothes’, the stimulator can show the picture that mother washes clothes. Then the child is supposed to say ‘mother’. Instead of giving vocal prompt to the child by saying /tuṇi/ or /kalukunnu/, the stimulator should give other picture which should be animated and moving. A series of three to five pictures are needed in a same category. Child gets stimulated by seeing the moving actions and the objects. Attention persists and finally he will be able to produce the expected response of /amma tuṇi kalukunnu/. Responses should be evaluated as misarticulated, wrong word, correct grammar, minimum utterances spoken, unintelligible, no response, incomplete sentence, etc. for keeping a record of developing skills and monitoring the progress which is essential to ensure that there is improvement in the communication of the child.

The stimulator should respond to the child’s vocalizations with actions such as placing the picture which the child has identified or moving the objects etc. This will motivate the child to speak more and the stimulator can monitor the communication by adding more informations. First, the communication is initiated with an action based activities. In the succeeding stages, the child will be able to understand
various aspects of language such as articulation, identification of different sounds, word formation, sentence structure and other grammatical categories. In the beginning the child may respond with nouns or verbs and later on may add other vocabulary and grammatical forms by getting adequate stimulations.

The stimulator can start communication by introducing a theme. For example, the stimulator can show the picture of a ‘house’ in the computer to stimulate the child to say /viidu/ ‘house’, then can show the rooms to elicit the utterance ‘muRi ’, then show each rooms like hall, kitchen, then the things kept in each rooms, paint colour, furniture, electronic items etc. What things are expected to be identified by the child may be placed in the rooms, change the paint colour and so on. What things that the child leaves out can be placed by animation and the child can be asked about them to elicit communication. This will enhance interest and attention of the child and thereby perception level will be increased.

Slowly the stimulator can extend the communication levels from naming to function of nouns such as bedroom to sleep by using coat, bed, pillow, bed spread, pillow cover, blanket etc. similarly kitchen for cooking. Then about cooking objects such as oven, gas stove, vessels, vegetables, and the names of other stationery used in the process of cooking can be asked and elicited step by step. All the information that has to be elicited should begin from the existing knowledge and should have some connection with each other. It is not possible to elicit the
communication in isolation. For that, the stimulator has to carefully work with the program creatively and thoughtfully. So the stimulator should be a trained person in this regard.

In the current education program, that is, Individualized Education Program, after assessing the current level of the child, the stimulator makes specific goals, and then prepares lesson plans and steps to achieve the goal. It is possible to improve in a better way by merging IEP with the Computer assisted psycholinguistic approach of intervention. Step by step the stimulator can move to other higher levels of intervention after identifying the current level of functioning and can move onto next stage like verbs and how grammatical categories are being used in a sentence. Studies reveal that children seem to learn meanings of new words in a sequential fashion in the process of language development. Initially they learn those words that refer to objects, events or actions. Next they seem to learn adjectives and adverbs. Then it seems that they learn set of terms that describe place and time. Finally they concentrate on relational words like her and their and then to other complex grammatical categories (Snow, C.W., 1989).

So the stimulator has to plan the steps of intervention in such a way as to enable language development. The intervention should not manifest itself as a step bound activity. It should be step free and easy going but at the same time the infrastructure should be step bound, that is, from simple to complex. Different strategies can be used to develop communication skills such as using minimal pairs of the language can be
selected and practiced together with the help of audio and video stimuli. Minimal pairs are the contrastive word pairs such as /mala/ and /mala/; /vala/ and /vaJal etc. These pairs can be introduced together and differentiated with the help of audio and video visuals, which help the child to identify the words as separate entities and then be able to differentiate pronunciation of each word and realize the meaning after getting thorough practice. The stimulator can hide objects or actions on the computer using animation tools. Then the child will eagerly continue to look for the object which the stimulator has just hidden and will enquire about that. This is an easy method to develop question forms.

Similarly, matching different objects such as animals, plants, flowers etc will bring out more conceptualization and vocabulary. The stimulator can select different criteria to match as per need. To learn multistep instructions this kind of intervention is very helpful for the retarded children since it is very easy to introduce complex tasks in smaller steps. When one task is mastered, the next can be introduced. Rather than pictures, moving visuals will be more useful in the higher stages of intervention, and it will be easy to connect different items and to move from one stage of intervention to another more complex form. The stimulator has to plan for intervention after assessment as per the need of each child. If the intervention is effectively programmed the stimulator can work easily with the child to efficiently set up and carry out the intervention. It is important that there should be options in the program to make changes such as addition, deletion etc. Moreover this kind of intervention should be easy for the child to grasp or participate
actively. It will make an effective positive change in the child's language skills within a short period since it directly influences the cognitive skills of perception. This technology aids the children in generalizing by extending what is learned to other untrained items and make the child enable to transfer his new skills to situations outside a structured intervention situation.

In this way, the psycholinguistic perspective can be incorporated with computer aided intervention. The idea behind this is that the use of technology in a linguistic basis will improve the cognition level including attention, perception and memory of the child. Rather it will give motivation to the child to keep him in a place to listen attentively and learn something new. So, incorporating traditional as well as technical aids for intervention will improve cognitive as well as linguistic conceptualization of the child.

Here, after analyzing the linguistic problems of the child, a sample vocabulary is prepared along with sample sentences. Intervention can be prepared with the help of this sample data which gives the data of what has to be intervened. These sample data of sentences can be given to the child through auditory and visual cues and with the help of computer aided technology such as concepts which have been discussed above for building different concepts. It is not worth to teach these words in isolation. Basic vocabulary can be taught beginning from the concept of /viiḍa/ 'house' since it is the most basic concept which the child is familiar with. Similarly different concepts can be created with the help
of a multidisciplinary team including the teacher, speech language pathologists, special educators, parents etc. Parents can give information regarding the contexts that the child is familiar with. It will be easier for the team to create different contexts. These different contexts can be programmed in a computer with the help of a programmer to make effective intervention. Even though it is a complex task to function it can definitely make the intervention far more effective. The pilot study regarding this kind of intervention to these cases showed positive changes which could enhance the attention, orientation as well as memory, that is, the cognitive functioning. It is found that they are more attentive while listening to these computer oriented tasks than the manual ones and they are able to sustain attention and could retrieve the information from memory while testing even after one week. So an intervention which brings psycholinguistic as well as computer aided program together can surely give better results which might lead to greater achievements in this field. It is clear that the attention and memory span of the retardates can be increased with the computer aided psycholinguistic language intervention program.