CHAPTER IV
CASE ANALYSIS

4.1 Case History

4.1.1 Case 1, A

The case ‘A’ is a 15 year old moderately retarded child. He has an Intelligence Quotient of IQ 38. His birth is on 11\textsuperscript{th} June 1994. He is the elder son of a Muslim couple who have studied up to tenth standard. His father is a painter. He has two younger brothers. One is studying in fifth standard. Both are normal in their growth. No mental or physical abnormalities were reported in the family. In the prenatal period, everything was normal. Delivery took place at home. There were no particular problems reported in the prenatal and natal periods. In the post natal condition, the developmental milestones were delayed. No physical deformity is reported. The developmental milestones of the case A is given below,
Table 10
Developmental milestones of the case 1, A

<table>
<thead>
<tr>
<th>Developmental milestones</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case A</th>
</tr>
</thead>
<tbody>
<tr>
<td>from birth onwards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>6 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>2 ½ years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>2 ½ Year</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>3 Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>3 ½ Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>6 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>5 years</td>
</tr>
</tbody>
</table>

Source: As per the case record maintained in SIMH, Pangappara.

He was under consultation in the Medical college hospital before he admitted to the State Institute for the Mentally Handicapped. There is no previous school history.
He does not have a sense of colour and number. He is independent in food habits such as eating and drinking. The adaptive skills such as toilet habits, brushing and bathing are independent but needs help for dressing, buttoning and unbuttoning, wearing shoes etc. The gross and fine motor skills are comparatively developed. There are no specific sensory problems. His social behaviour is good. He is cooperative and attentive. He can identify familiar objects and knows its use. He can follow simple instructions. He has awareness on danger and hazards of fire, water and vehicles. He cannot identify colour, size, shape and gender. He can count up to ten with help. He has no ability to read, write and to do arithmetic calculations. He has ability on other prevocational abilities. He has interest in watching TV, playing and listening music. Although he can speak in small sentences, his speech is unclear. It is recommended that the case ‘A’ needs special education, speech therapy, behaviour modification and special training in academic skills.

4.1.2 Case 2, B

The case ‘B’ is a moderately retarded child with an Intelligence Quotient of IQ 38. His age is 15. He is the youngest member of a big family. He has ten elder ones including four sisters and four brothers now. Two of them died in their younger age. No mental or physical problems were reported in the family. His home is in Trivandrum district near the seaside. His father is a fisherman and he belongs to a low class family. During prenatal condition the mother was having some serious health problems and was under treatment for chronic complaint. At this
time she took some medicines. In the neonatal condition the delivery was normal and it was at home and the delivery was attended to by an untrained midwife. In the post natal condition the child cried only after ten minutes of birth. The baby was having under weight. The child was taken for consultation in the hospital only after three months. He does not have any kind of physical abnormalities. But he is not using long sentences. All the developmental milestones were delayed which is as shown below.

Table 11

Developmental milestones of the case 2, B

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>8 Months</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>4 years</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>5 years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>-</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>2 Years</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>2 ½ Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>7 years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>8 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>After 8 years</td>
</tr>
</tbody>
</table>

Source: As per the case report from SIMH, Pangappara
He does not have a previous school history. He is able to shop with a slip and buy things. Sometimes he assists in household activities. He is cooperative. All the self help skills including bathing, brushing, dressing, food habits etc are independent. The gross and fine motor skills of the child are developed normally. The child does not have any sensory problems. He shows gestures while communicating. He can play with other children. He is attentive for a maximum of five minutes. He can identify the use and name of familiar objects and follow simple instructions. He has the awareness of fire, and of the danger of fire, water, vehicle etc. He cannot identify colour, size and shape. He can count up to ten numbers; read, write and can draw a circle. His speech is unclear. He has an interest in watching music and T.V. programs. No other particular problems were identified. It is recommended that the case ‘B’ need special schooling and speech therapy.

4.1.3 Case 3, C

The case ‘C’ was born on fourth May 1995 and is 15 years old. He has an Intelligence Quotient of IQ 37. His home is in Trivandrum district. His parents have studied up to tenth standard and his father is working in gulf. His mother is a house wife. He has an elder brother who is studying in tenth standard. All the family members are normal both physically and mentally. In the prenatal period the mother was having a lot of tension. Delivery was normal. In the post natal condition, some kind of suffocation was noticed at the age of nine months for which treatment was given. He does not have any kind of physical deformity. He cannot
use long sentences. The developmental history was fully delayed. It is as
given below,

**Table 12**

**Developmental milestones of the case 3, C**

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>6 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>6 Months</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>1 year</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>1 ½ Years</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>2 Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>3 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>5 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>After 5 years</td>
</tr>
</tbody>
</table>

Source: As per the case report from SIMH, Pangappara

He was admitted to the institute after normal schooling up to 3rd standard. The daily living self help skills are independent except dressing
habit. The gross and fine motor skills are normal. He has normal sensory skills. He can communicate with others in two word sentences. But the speech is unclear and sometimes irrelevant. He is short tempered and not sociable. Mostly, he likes to be alone. He does not like to go anywhere without mother’s company. He has less attention span, a maximum of 4-5 minutes. He can identify familiar objects and can follow simple instructions. He does not have awareness of danger and hazards of fire, water etc. He does not have the sense of colour, size, sex and shape. He can count up to 10. The academic skills of reading, writing and doing arithmetic are not satisfactorily developed. He is interested in assisting household work. He has interest in watching TV and listening to songs. It is recommended that the case need special education and speech therapy.

4.1.4 Case 4, D

The case ‘D’ is a moderately retarded, 15 years old, second child of a non consanguineous parent. He has born on thirteen October 1995. He has an Intelligence Quotient of IQ 37. His house is in Pangappara near the State Institute for the Mentally Handicapped (SIMH). His father who has studied up to eighth standard is a driver. His mother is a housewife and has studied up to tenth standard. His elder brother who is studying in eighth standard has normal physical and mental health status. No other member in the family has been diagnosed to any type of mental retardation, or epilepsy. The economic status of the family is very poor. The total family income is 150 rupees per month, in accordance with the records.
As per the information obtained from the records, in the prenatal period, there were no particular complaints. A scooter accident happened in the prenatal condition after three months. The delivery was in a hospital. It was a full term normal delivery. Doctors reported that he had a delayed birth cry and low birth weight. But other responses were normal. In the post natal condition, the speech and motor development were slow. Mental retardation was detected at the age of two. His case was consulted at the Medical college hospital. The complaints were speech defect, slow motor developments and naughty behaviour. He does not have any kind of physical deformity. All of his developmental milestones were delayed. The developmental history is given below,

Table 13
Developmental milestones of the case 4, D

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>2 ½ Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>7 months</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>13 months</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>15 months</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>2 years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>15 months</td>
</tr>
<tr>
<td>Standing without</td>
<td>1 year</td>
<td>2 ½ Years</td>
</tr>
<tr>
<td>support</td>
<td>1 Year</td>
<td>3 Years</td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>3 Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 1/2 Year</td>
<td>3 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>7 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 1/2 years</td>
<td>After 6 years</td>
</tr>
</tbody>
</table>

Source: As per the case report from SIMH, Pangappara

He has no prior school history. He was admitted to the SIMH in the year 1992, when he was five years old. Since his house is near the institution, he was admitted for daily care. The self help skills such as food habits, toilet habits, brushing, bathing, and dressing are not fully developed. He needs help on all these tasks. The fine motor skills are developed although the gross motor skills were slowly developed. The hearing and vision are perfect. Speech is impaired.

The communication skills are poorly developed. He uses words instead of sentences for communication and finds difficulty even in the use of simple sentences. The social behaviour is comparatively good. He is cooperative and attentive. But when he is engaged in some other activity it is not possible to trace his attention back till his interest in that activity has ended and he came back upon his own will. We have to wait till that time. But he is very friendly. He can identify familiar objects and can use them. He can follow simple instructions. He is aware of the danger of fire, water, vehicle etc.

The concept of colour is developed. But he is not able to identify colours. Similarly, the concept of size, shape, number, time and money
are developed. The capacity of memory is comparatively developed. He is cooperative in household activities and can perform the simple tasks assigned to him. He does not have any particular likes and dislikes.

Two main problems such as speech defect and delayed motor development were noted. In addition, he is not able to control himself while engaging in an activity. Observations revealed that the case ‘D’ needs training in communication, socialization, and group activities. More attention is necessary for the development of gross and fine motor skills. He is trainable in life skills. Even though he has the receptive language skill, the expressive language skill is limited to words and very simple sentences in communication. It is recommended that special training is needed to improve the speech skill.

4.1.5 Case 5, E

Case ‘e’ is a 14 year old moderately retarded child with an Intelligence Quotient of IQ 36. His father is a coolie and has studied up to fifth standard. His mother has studied up to third standard and she is a cashew worker. No other member in the family seems to have reported any type of mental illness or retardation. He was under treatment at the Medical College for hyperactivity, aggressive behavior, and attention deficit.

In the prenatal period, no particular complaints were reported. In the neonatal condition, because of the prolonged delivery symptoms
caesarean was conducted. In the post natal condition, delayed birth cry and low birth weight were reported.

The developmental milestones of the child are not clearly reported. It is as shown below,

**Table 14**
**Developmental milestones of the case 5, E**

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>Delayed</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>Delayed</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>4½ Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Years</td>
<td>6 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>6 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>Delayed</td>
</tr>
</tbody>
</table>

Source: As per the case report from SIMH, Pangappara
The case has a record of normal schooling up to five years. The food habits such as eating and drinking are independent. Brushing is independent. All other daily living skills such as bathing, dressing, buttoning, wearing shoes etc are dependant. He has good gross motor skills and the fine motor skills are poorly developed. He socializes with others. He has poor attention span. He can identify and use familiar objects. He is able to follow simple instructions. He is not aware of danger and hazards of fire, water etc. He is able to say the name of some colours, but does not have the concept of colours. He has the concept of shape, but is not aware of the concept of size and number.

The learning skills of reading, writing, and arithmetic calculations are not developed. Reports say that this case has to set attention in special education, behavior modification, occupational therapy and speech therapy.

4.1.6 Case 6, F

The case ‘F’ is a 15 year old moderately retarded child with an Intelligence Quotient of IQ 40. He has born on 30th August 1995, in a lower class family. His father and mother have studied up to tenth standard. His house is in Trivandrum. He has an elder sister who is well educated and her physical and mental conditions are good. There is no previous history of mental retardation reported in the family. In prenatal and neonatal condition, there is no particular problem noticed. After nine months the child was affected by fits. He does not have any kind of physical deformity. The developmental history is also somewhat delayed.
He was admitted to the State Institute for the Mentally Handicapped, after studying up to fourth standard in a normal school and after getting some training in the mental retardation unit of Balavikas. The persisting complaints are that he is damaging toys, screaming, excessively inattentive and unclear speech. The adaptive skills such as

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>2 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>6 Months</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>10 Months</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>2 ½ years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>2 Years</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>2 ½ Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>3 ½ Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>5 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>5 years</td>
</tr>
</tbody>
</table>
food habits, toilet habits, brushing, bathing, dressing etc are independent. He is dependant on others for buttoning and unbuttoning and wearing shoes. The gross and fine motor skills are developed. His social behaviour is comparatively good. He can mingle with peer group. He has less concentration. He can identify and use familiar objects and can follow simple instructions. He is aware of danger from fire and vehicles. The concept of colour, sex, shape and numbers has not been developed. But he can identify the concept of size as big and small. He does not have the ability to read, even though he is trying to write some simple words. He can count up to twenty five although it is not correct counting. He has interest in watching T.V. and playing and dancing. His sensory abilities such as vision and hearing are normal. He has good movement and direction ability. The speech production mechanism that is the functioning of lips, tongue and throat is normal. It is recommended that the case 'F' need special training in the areas of reading, writing, arithmetic and speech training.

4.1.7 Case 7, G

The case 'G' is a 16 years old moderately retardate with an Intelligence Quotient of IQ 43. His father is illiterate and his mother has studied up to fifth standard. He has an elder brother who is mentally retarded. His father is a coolie and mother is a house wife. He has a history of normal schooling up to the fourth standard. It is reported that his father has mild mental retardation.
In the prenatal history, there were no particular problems. Delivery was normal. In the post natal condition, development was normal and the child was under treatment for fits. The developmental history of the case is as shown below,

**Table 16**  
**Developmental milestones of the case 7, G**

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>3 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>3 Months</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>8 Months</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>Delayed</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>1 year</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>1 Year</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>1 ½ Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>2 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>2 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>2 years</td>
</tr>
</tbody>
</table>
The child is hyperactive and disobedient. His adaptive behavior skills such as food habits, toilet habits, brushing, bathing, dressing, wearing shoes etc are independent. The gross and fine motor skills are satisfactorily developed but his speech is not intelligible. He is sociable with the peer groups and uses simple sentences while communication. He can follow simple instructions and is aware of dangers from vehicles, water; heat etc. He is able to identify names and understands the use of familiar objects and match colours. He conceptualizes the sense of size, shape, number etc. and can match these with verbal prompting. He can copy words and numbers up to twenty five and can read up to an extent. He is able to do simple domestic activities. It is recommended that the case needs speech therapy.

4.1.8 Case 8, H

The case ‘H’ is a 15 year old moderately retarded child, with an Intelligence Quotient of IQ 37. His father died. Now he is staying with his mother and his grand mother. He has a brother aged eight years with normal developments. He is residing in Trivandrum. He is a day scholar of the State Institute for the Mentally Handicapped. No one in the family has any kind of mental illness, mental retardation, epilepsy or others. In the prenatal history some family problems occurred which led the mother to a state of depression. Father was a drug addict. In the neonatal history, the birth cry of the child was delayed. He was a premature baby bearing a weight of 2.1kg. He does not have any kind of physical deformity. In the post natal period, all the milestones were delayed.
Table 17
Developmental milestones of the case 8, H

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>3 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>7 months</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>After 8 months</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>After 2 years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>-</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>1 ½ Years</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>2 Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>3 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>7 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>After 4 years</td>
</tr>
</tbody>
</table>

The case ‘H’ was admitted to the Institute after normal schooling up to one year. The self help skills such as food habits, toilet habits, brushing, bathing, dressing etc are independent. But he does not have the skill of buttoning and unbuttoning independently. The gross and fine motor skills are developed and are normal. Hearing is normal. He can
speak but the speech is unclear. The eye to eye contact during communication is poor. He is sociable and makes good relationship with the surroundings. He can sustain attention for a maximum of ten minutes. He can identify familiar objects, and can use them. He can follow simple instructions and talk in simple sentences especially in two word sentences. He is aware of the danger of vehicles and dogs. He can count up to ten with help. He cannot identify time. He is not able to read, write and to do arithmetic. He has interest in dance, TV programs and music. It is recommended that the case should be given speech therapy, training on self help skills and cognitive skills, behaviour modification therapy and parent counseling.

4.1.9 Case 9, I

Case ‘I’ is 14 year old moderate mentally retarded with an IQ of 36. His parents are of a Nampoothiri - Christian intercaste marriage. After his birth, his mother committed suicide. After a short while, his father also committed suicide. Then he was adopted by a Muslim family. The economic status of the family is low. His step father is a coolie and he has studied up to eight standard. His step mother, who studied up to tenth standard, is a house wife. The house is in Pachalloor, a small village in Thiruvananthapuram district. In addition to the above, there are two members in the family – a little girl studying in fifth standard and a small boy studying in first standard.

As per the records maintained in the institution, in the prenatal period, medicines were taken by his mother for aborting the child. In the
neonatal condition, there were no particular complaints. The delivery was in a hospital. It was a full term normal delivery. But the labour pain was prolonged. The doctors reported that the baby was in a respiratory form with delayed birth cry and low birth weight. In the post natal condition, the suicide of the mother happened in the second day of the birth of the child.

Although he has no physical deformity, the parents observed delays in developmental milestones. Reports revealed that at the time of birth, the child did not startle to any loud sounds or noises. The child could startle or cry at noises and could awaken at loud noises after one month. The developmental history of the case in comparison with normal state of development is given below,
Table 18
Developmental milestones of the case 9, I

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>3 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>8 Months</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>2 ½ years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>1 ½ years</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>3 Years</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>3 ½ Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>4 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>7 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>7 years</td>
</tr>
</tbody>
</table>

He was under treatment at Medical college hospital. He has learning disability and speech problem. He was admitted to the SIMH in 2001, after normal schooling up to fourth standard. In the school, he quarreled with others. The gross and fine motor skills are developed. But
the self help skills such as food habits, toilet habits, brushing, bathing, and dressing are partially dependant. He can socialize with others. He is not always aware of people around him, but often he smiles at others and interacts with them. He is attentive and can identify familiar objects. But he is not so cooperative. The concept of colour, shape, number, time etc is developed.

4.1.10 Case 10, J

The case 'J' is a 14 year old moderately retarded child. The intelligence Quotient of the case is IQ 50. He has born as the youngest member of the family. No other members in the family reported any kind of mental abnormalities. His parents have studied up to tenth standard. His father is a mason and mother is a housewife. He was under treatment in the Medical College hospital for epileptic fits. In the prenatal period, no notable diseases were found. Delivery was normal and was in a hospital. Parents observed delays in developmental milestones. The developmental history of the case is given below,
### Table 19
Developmental milestones of the case 10, J

<table>
<thead>
<tr>
<th>Developmental milestones from birth onwards</th>
<th>Normal stage of development</th>
<th>Developmental stage of the case A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiles at others</td>
<td>2 Months</td>
<td>6 Months</td>
</tr>
<tr>
<td>Head control</td>
<td>3 Months</td>
<td>7 Months</td>
</tr>
<tr>
<td>Sitting</td>
<td>6 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>Respond to name</td>
<td>6 Months</td>
<td>7 Months</td>
</tr>
<tr>
<td>Babbling</td>
<td>3-8 Months</td>
<td>1 year</td>
</tr>
<tr>
<td>First words</td>
<td>1 Year</td>
<td>2 years</td>
</tr>
<tr>
<td>Standing with support</td>
<td>10 Months</td>
<td>2 years</td>
</tr>
<tr>
<td>Standing without support</td>
<td>1 year</td>
<td>2 Years</td>
</tr>
<tr>
<td>Walking</td>
<td>1 Year</td>
<td>2 ½ Years</td>
</tr>
<tr>
<td>Two word phrases</td>
<td>1 ½ Year</td>
<td>5 Years</td>
</tr>
<tr>
<td>Toilet control</td>
<td>3 Years</td>
<td>4 Years</td>
</tr>
<tr>
<td>Sentence</td>
<td>2 ½ years</td>
<td>6 years</td>
</tr>
</tbody>
</table>

His speech is unintelligible. Communication is mostly through simple words and gestures. He has attention problem. He gives attention to interested subjects only. The gross and fine motor skills are poorly developed. The sensory skills such as vision and hearing are perfect. He identifies names and use of familiar objects. He can follow simple instructions. He is not aware of danger and hazards. He does not have the concept of colour and size but is able to differentiate shape. His academic
skills such as reading, writing, and arithmetic are very poorly developed. He is interested in hearing music, watching T.V. and playing with balls. It is recommended that the case needs special education, speech therapy and physiotherapy.

4.2 Sounds in Malayalam

Before attempting the analysis and interpretation based on the data collected an introduction to the sounds in Malayalam language is provided here.

There are different opinions regarding the number of sounds in Malayalam. There are 53 sounds, vowels and consonants together, in Malayalam. In the production of vowel sounds the tongue and the lips play an important role in modifying the air passage in the oral cavity and the air stream coming from the lungs is allowed to go out without any obstruction in the mouth. The consonants are pronounced with some obstruction in different points of mouth cavity.

4.2.1 The Vowel System of the Standard Malayalam

The vowels in Malayalam include /a, aa, i, ii, u, uu, e, ee, ai, o, oo/ and /au/. The vowel /u/ has an allophone /ə/ which occurs only at the end position and it is represented by chandrakala (ə).

Vowels can be described in terms of three variables viz, tongue height, tongue advancement, and lip rounding. According to the tongue height the vowels can be described as high, mid and low. On the basis of
tongue advancement or retraction within the mouth cavity they can be divided into front, central, and back vowels. According to lip rounding the vowels can be classified into rounded vowels and unrounded vowels.

<table>
<thead>
<tr>
<th>Vowels</th>
<th>Description</th>
<th>Example</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/a/</td>
<td>short, low, central vowel</td>
<td>mala</td>
<td>'mountain'</td>
</tr>
<tr>
<td>/aa/</td>
<td>long, low, central vowel</td>
<td>maala</td>
<td>'chain'</td>
</tr>
<tr>
<td>/i/</td>
<td>short unrounded, high, front vowel</td>
<td>tira</td>
<td>'waves'</td>
</tr>
<tr>
<td>/ii/</td>
<td>long unrounded, high, front vowel</td>
<td>tiiram</td>
<td>'shore'</td>
</tr>
<tr>
<td>/u/</td>
<td>short high back rounded vowel</td>
<td>uppu</td>
<td>'salt'</td>
</tr>
<tr>
<td>/uu/</td>
<td>long high back rounded vowel</td>
<td>muula</td>
<td>'corner'</td>
</tr>
<tr>
<td>/e/</td>
<td>short unrounded mid front vowel</td>
<td>ela</td>
<td>'leaf'</td>
</tr>
<tr>
<td>/ee/</td>
<td>long unrounded mid front vowel</td>
<td>eelam</td>
<td>'cardamom'</td>
</tr>
<tr>
<td>/o/</td>
<td>short mid back rounded vowel</td>
<td>koṭi</td>
<td>'flag'</td>
</tr>
<tr>
<td>/oo/</td>
<td>long mid back rounded vowel</td>
<td>koṭi</td>
<td>'new cloth'</td>
</tr>
<tr>
<td>/ə/</td>
<td>short mid central un rounded vowel</td>
<td>kalla</td>
<td>stone</td>
</tr>
</tbody>
</table>

The sounds /ai/ and /au/ are two diphthongs in Malayalam.
Table 20
Vowels

<table>
<thead>
<tr>
<th></th>
<th>Front unrounded</th>
<th>Central neutral</th>
<th>Back rounded</th>
<th>Diphthongs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>short</td>
<td>long</td>
<td>Short</td>
<td>long</td>
</tr>
<tr>
<td>High close</td>
<td>i</td>
<td>i:</td>
<td>u</td>
<td>u:</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>e:</td>
<td>o</td>
<td>o:</td>
</tr>
<tr>
<td>Low/ open</td>
<td>a</td>
<td>a:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 11 Total 2

Source: (Syamala, 2000)

4.2.2 Consonant system of the Standard Malayalam

The consonant sounds in Malayalam are grouped under different heads on the basis of their place and manner of articulation. Consonants in Malayalam include ten stops, six nasals, four fricatives, three laterals, one flap, one trill, and two frictionless continuants.
### Table: 21
Consonant system of the standard Malayalam

<table>
<thead>
<tr>
<th>Place</th>
<th>Bilabial</th>
<th>Labiodental</th>
<th>Dental</th>
<th>Dentic</th>
<th>Alveolar</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manner</td>
<td>vl vd</td>
<td>vl vd</td>
<td>vl vd</td>
<td>vl vd</td>
<td>vl vd</td>
<td>vl vd</td>
<td>vl vd</td>
<td></td>
</tr>
<tr>
<td>Stops</td>
<td>p</td>
<td>t</td>
<td>t̄</td>
<td>t̄</td>
<td>c</td>
<td>j</td>
<td>k</td>
<td>g</td>
</tr>
<tr>
<td>unaspirated</td>
<td>b</td>
<td>d</td>
<td>d̄</td>
<td>d̄</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plosives</td>
<td>ph</td>
<td>th</td>
<td>th</td>
<td>th dh</td>
<td>ch</td>
<td>kh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>bh</td>
<td>dh</td>
<td>dh</td>
<td>dh</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>s̄</td>
<td>s̄</td>
<td>H</td>
</tr>
<tr>
<td>Nasals</td>
<td>M</td>
<td>n̄</td>
<td>n</td>
<td>n</td>
<td>n̄</td>
<td>n̄</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laterals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>l</td>
<td>l</td>
<td>l</td>
<td></td>
</tr>
<tr>
<td>Trills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>r</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frictionless continuants</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
</tbody>
</table>
4.2.2.1 Point or Place of Articulation

The place where the articulators come into contact for the production of consonant sounds is called the point or place of articulation. The movable parts of the vocal apparatus are called active articulators and the immovable parts are called passive articulators. The active articulator comes close to make complete contact with some part in the mouth or pharynx. The sounds can be described in accordance with the point of articulation as follows.

Table 22
Point or place of articulation

<table>
<thead>
<tr>
<th>Sounds as per point of articulation</th>
<th>Active articulator</th>
<th>Passive articulator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilabial</td>
<td>Lower lip</td>
<td>Upper lip</td>
</tr>
<tr>
<td>Labiodental</td>
<td>Lower lip</td>
<td>Upper teeth</td>
</tr>
<tr>
<td>Dental</td>
<td>Tip of the tongue</td>
<td>Upper teeth</td>
</tr>
<tr>
<td>Denti alveolar</td>
<td>Tip of the tongue</td>
<td>In between upper teeth and alveolum</td>
</tr>
<tr>
<td>Alveolar</td>
<td>Tip of the tongue</td>
<td>Alveolum</td>
</tr>
<tr>
<td>Retroflex</td>
<td>Tip of the tongue</td>
<td>Hard Palate</td>
</tr>
</tbody>
</table>
4.2.2.2 Manner of Articulation

The way in which the air stream is restricted at the time of the production of consonant sounds is called manner of articulation. It can be classified as follows:

A stop sound is produced by stopping the air stream completely and released suddenly. While articulating the nasal sounds the soft palate is lowered to close off the oral passage and direct the air stream through nasal cavity. The occlusion may occur anywhere between larynx and the two lips or the passage of air may be constricted enough for it to produce audible friction. The sound thus produced is called fricative. In the production lateral sounds, the tip and middle of the tongue is raised and held against the teeth ridge to form a complete closure. But the sides of the tongue allow the air stream to pass out. For the articulation of
retroflex sounds the tip of the tongue is curled back and touches the palatal area. When a flap sound is produced the tongue tip reaches up and strikes the passive articulator only once whereas for the production of trill sounds the tongue tip touches the passive articulator more than one time. In frictionless continuant the tongue comes close enough behind the alveolar ridge to have enough gaps, and the air passes through without friction. This sound is, therefore, called frictionless continuant. Speech sounds that are accompanied by noticeable amount of breath are known as aspirated sounds. In pronouncing these sounds breath accompanies the articulatory movements of the organs. Aspiration is indicated by putting a small ‘h’ after the letter representing the plosive or stop sound.

4.2.2.3 Voiced and Voiceless Sounds

During articulation the vocal cords are set in vibration by the outgoing column of air. During voicing the vocal cords are brought close enough to hold them and the air stream vibrates them in rapid succession. As a result the vocal cords open and close quickly in several times. Sounds produced with the vocal cords in vibration are called voiced sounds. Sounds produced without the vibration of the vocal cords are called voiceless sounds.
### 4.2.2.4 Description of Malayalam Consonants

<table>
<thead>
<tr>
<th>Sounds</th>
<th>Description</th>
<th>Example</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stops</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/p/</td>
<td>voiceless bilabial stop</td>
<td>peṭṭi</td>
<td>'box'</td>
</tr>
<tr>
<td>/ph/</td>
<td>voiceless bilabial aspirated stop</td>
<td>phalam</td>
<td>'result'</td>
</tr>
<tr>
<td>/b/</td>
<td>voiced bilabial stop</td>
<td>belam</td>
<td>'strength'</td>
</tr>
<tr>
<td>/bh/</td>
<td>voiced bilabial aspirated stop</td>
<td>bhayam</td>
<td>'fear'</td>
</tr>
<tr>
<td>/t/</td>
<td>voiceless dental stop</td>
<td>tatta</td>
<td>'parrot'</td>
</tr>
<tr>
<td>/th/</td>
<td>voiceless dental aspirated stop</td>
<td>katha</td>
<td>'story'</td>
</tr>
<tr>
<td>/d/</td>
<td>voiced dental stop</td>
<td>deya</td>
<td>'kindness'</td>
</tr>
<tr>
<td>/dh/</td>
<td>voiced dental aspirated stop</td>
<td>dhanam</td>
<td>'money'</td>
</tr>
<tr>
<td>/l/</td>
<td>voiceless retroflex stop</td>
<td>paṭṭi</td>
<td>'dog'</td>
</tr>
<tr>
<td>/ḷ/</td>
<td>voiceless retroflex aspirated stop</td>
<td>paṭṭham</td>
<td>'lesson'</td>
</tr>
<tr>
<td>/d/</td>
<td>voiced retroflex stop</td>
<td>ḍeppi</td>
<td>'small box'</td>
</tr>
<tr>
<td>/ḍ/</td>
<td>voiced retroflex aspirated stop</td>
<td>muḍhan</td>
<td>'fool'</td>
</tr>
<tr>
<td>/c/</td>
<td>voiceless Palatal stop</td>
<td>cirī</td>
<td>'smile'</td>
</tr>
</tbody>
</table>
/ch/ voiceless Palatal aspirated stop acchan ‘father’

/ʃ/ voiced Palatal stop jeyam ‘victory’

/ɭh/ voiced Palatal aspirated stop jhaansi ‘place name’

/k/ voiceless velar stop kata ‘shop’

/ɭh/ voiceless velar aspirated stop nakham ‘nail’

/g/ voiced velar stop gusti ‘wrestling’

/ɭh/ voiced velar aspirated stop meegham ‘cloud’

Fricatives

/s/ voiceless Dental alveolar fricative sammanam ‘gift’

/ʃ/ voiceless Retroflex fricative kaṣaayam ‘decoction’

/ʃ/ voiceless palatal fricative śakti ‘strength’

/h/ voiceless velar fricative haaram ‘garland’

Nasals

/m/ voiced bilabial nasal maala ‘chain’

/ʋ/ voiced alveolar nasal niṅnal ‘you’

/n/ voiced dental nasal aana ‘elephant’
If

/ŋ/ voiced retroflex nasal  kaŋŋu  ‘eye’

/ɾ/ voiced palatal nasal  mañña  ‘yellow’

-insert-

Laterals

/l/ voiced alveolar lateral  tala  ‘head’

/l/ voiced retroflex lateral  vaḷa  ‘bangle’

/l/ voiced palatal lateral  maḷa  ‘rain’

Trills

/r/ voiced dental alveolar trill  rektam  ‘blood’

/R/ voiced alveolar trill  Roṭṭi  ‘bread’

Frictionless continuants

/v/ voiced labiodental frictionless continuant  vara  ‘line’

/y/ voiced palatal frictionless continuant  kayaR ‘rope’

4.3 Linguistic Analysis of the Cases

The language problems which have been identified from the analysis of the collected data in different levels are discussed here.
4.3.1 Phonological Problems

Phonological problem is characterized by a child's inability to produce sounds at a level expected of its age because of an inability to articulate necessary sounds. Phonological analysis discovers the errors in the features of sound, which are the basic building blocks of speech. The phonological problems are found in the articulation or pronunciation of vowels and consonants in relation with phonemic distribution i.e., word initially, medially and finally and in paralinguistic features. It includes the supra segmental features such as pitch, frequency, loudness, speech rate and clarity of the speech. The main phonological problems are noted below,

4.3.1.1 Substitution

Children do not pronounce the sounds clearly and they substitute one sound for another. There are consonant substitution and vowel substitution.

a) Consonant Substitution

If the sound substituted is a consonant, it is called consonant substitution. Among the six nasal sounds in Malayalam, only the dental nasal /ŋ/ and bilabial nasal /m/ are pronounced instead of all other nasal sounds. It may be due to the fact that the verbal fluency of the retardates is impaired and the articulation of nasal sounds except /n/ and /m/ are in the back positions of the oral cavity. So it is difficult to articulate for the retardates.
The retroflex nasal /ɳ/ is pronounced as dental nasal /n/.

e.g. 4.1 maṇi > /maṇi/ ‘bell’

manṇa > /manṇa/ ‘soil’

kaṇṇa > /kaṇṇa/ ‘eye’

kaṇṇaṃti > /kaṇṇaḍi/ ‘mirror’

The voiced palatal nasal /ṅ/ is pronounced as dental nasal /n/ in word initial and medial positions.

ṅaan > /ṅaṅ/ ‘I’

ṅaaḷaṅ > /ṅaḷaṅa/ ‘Sunday’

kuṅṇa > /kuṅṇa/ ‘child’

The voiced velar nasal sound /ṅ/ is substituted by the dental nasal /n/.

e.g. 4.2 maṅṅa > /maṅṅa/ ‘mango’

teṅṅa > /teṅṅa/ ‘coconut tree’

These cases use retroflex sounds rarely due to defective articulation. If it is pronounced, it is in a distorted condition. Since retroflex sounds are pronounced by articulating the tip of the tongue against the hard palate, it is not possible for the retardates to pronounce it.
The retroflex stop \( /\check{t}/ \) is pronounced as voiceless dental stop \( /\check{d}/ \) in between vowels.

e.g. 4.3  
\begin{align*}
\text{pa\text{\textae}t\text{\textae}m} & > /\text{padam}/ \quad \text{‘picture’} \\
\text{vi\text{\textae}t\text{\textae}a} & > /\text{viida}/ \quad \text{‘home’} \\
\text{papp\text{\textae}t\text{\textae}t\text{\textae}m} & > /\text{pappadam}/ \quad \text{‘papad’} \\
\text{ka\text{\textae}t\text{\textae}a} & > /\text{kada}/ \quad \text{‘shop’}
\end{align*}

\( /\check{t}/ \) is pronounced as voiceless dental stop \( /\check{d}/ \) in the word initial position

e.g. 4.4  
\begin{align*}
\text{ta\text{\textae}ksi} & > /\text{taaksi}/ \quad \text{‘taxi’} \\
\text{tele\text{\textae}poon\text{\textae}o} & > /\text{telapoon\text{\textae}o}/ \quad \text{‘telephone’} \\
\text{tiic\text{\textae}caRa\text{\textae}o} & > /\text{tiiccaRa\text{\textae}o}/ \quad \text{‘teacher’} \\
\text{tik\text{\textae}k\text{\textae}aRR\text{\textae}o} & > /\text{tikkatt\text{\textae}o}/ \quad \text{‘ticket’}
\end{align*}

There is an exception. Sometimes \( /\check{t}/ \) is substituted by \( /\check{y}/ \), when it is in the medial position of two vowels.

e.g. 4.5  
\begin{align*}
\text{kuu\text{\textae}t\text{\textae}vi\text{\textae}t\text{\textae}e} & > /\text{kuyuyevide}/ \quad \text{‘where is the nest’} \\
\text{k\text{\textae}t\text{\textae}icc\text{\textae}o} & > /\text{kyicc\text{\textae}o}/ \quad \text{‘bited’} \\
\text{k\text{\textae}t\text{\textae}ann\text{\textae}o} & > /\text{keyann\text{\textae}o}/ \quad \text{‘laid down’}
\end{align*}
The geminated form of /tʃ/, that is, /tʃtʃ/ is substituted by the dental /tttʃ/ in word medial position.

e.g. 4.6  ceettan > /ceettan/ ‘elder brother’
puṭṭɔ > /puttɔ/ ‘rice cake’
muṭṭa > /mutta/ ‘egg’
cuṭṭu > /cuttu/ ‘burned’

Voiced retroflex stop /ɖ/ has changed into alveolar lateral /l/ in the word initial position when it is followed by long vowels.

e.g. 4.7  ḍookṭaR > /loottaRɔ/ ‘doctor’
ḍænsɔ > /laansɔ/ ‘dance’

As an exception, sometimes pronunciation of /ɖ/ is noticed differently in the medial position.

e.g. 4.8  Rooḍɔ > /RooRɔ/ ‘Road’

These sounds /ʃ/ and /ɖ/ are pronounced sometimes as distorted sounds which have been discussed under the segment distortion.

The retroflex approximant /l/ is pronounced as palatal approximant /y/ in the word medial position.

e.g. 4.9  vaala > /vaaya/ ‘plantain tree’
Sometimes /l/ is substituted by alveolar lateral /l/. These are the series of transitions that the child articulated before getting the correct pronunciation.

**Example 4.10**

maal > /mala/ ‘rain’

vaalappalam > /vaalappalam/ ‘banana’

**Example 4.11**

maal > /mara/ ‘rain’

eel > /eer/ ‘seven’

Retroflex lateral /l/ is pronounced as alveolar lateral /l/

**Example 4.12**

vala > /vala/ ‘bangle’

paalam > /paalam/ ‘Railway lane’

tava > /tava/ ‘frog’

kaala > /kaala/ ‘ox’
This shows that among the lateral sounds /l/, /l/ and /r/ only /l/ is pronounced due to complex articulation of other sounds.

The retroflex fricative /ʂ/ is pronounced as alveolar fricative /s/ in word medial position.

e.g. 4.13 kaśaayam > /kasaayam/ ‘ayurvedic medicine’

viśayam > /visayam/ ‘subject’

The retroflex /ʂ/ is changed in to palatal /c/ in the medial position.

e.g. 4.14 maşi > /maci/ ‘ink’

kRasi > /kiRci/ ‘agriculture’

All the cases have difficulty to pronounce aspirated sounds. Since the aspirated sounds are articulated accompanied by breath, the pronunciation is complex. So they have a tendency to simplify the form in one way or another. In order to simplify, the voiced aspirated sounds are either de-aspirated or devoiced. Voiceless aspirated bilabial stop /ph/ and voiced stop /bh/ are pronounced as voiceless bilabial stop /p/ or /b/.

The voiceless aspirated sound /ph/ is de-aspirated in to its corresponding bilabial voiceless stop /p/.

e.g. 4.15 phalam > /palam/ ‘fruit’

phaattima > /paattima/ ‘name’
The voiced aspirated sound /bh/ is de-aspirated in to its corresponding voiced stop /b/.

e.g. 4.16  

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bhuumi</td>
<td>/buumi/</td>
<td>'earth'</td>
</tr>
<tr>
<td>bhaarya</td>
<td>/baarya/</td>
<td>'wife'</td>
</tr>
<tr>
<td>abhayam</td>
<td>/abayam/</td>
<td>'shelter'</td>
</tr>
</tbody>
</table>

The voiced aspirated /bh/ is devoiced in to voiceless aspirated /ph/. Here the sound is not de-aspirated.

e.g. 4.17  

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bhuumi</td>
<td>/phuumi/</td>
<td>'earth'</td>
</tr>
<tr>
<td>bhaaratam</td>
<td>/phaaratam/</td>
<td>'India'</td>
</tr>
<tr>
<td>bharttaavə</td>
<td>/pharttaavə/</td>
<td>'husband'</td>
</tr>
</tbody>
</table>

The voiceless aspirated dental stop /ṭh/ and the voiced aspirated dental stop /ḍh/ are pronounced as voiced dental stop /d/.

e.g. 4.18  

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>katha</td>
<td>/kada/</td>
<td>'story'</td>
</tr>
<tr>
<td>avadhi</td>
<td>/avadi/</td>
<td>'leave'</td>
</tr>
<tr>
<td>budhan</td>
<td>/budan/</td>
<td>'Wednesday'</td>
</tr>
</tbody>
</table>

The voiceless aspirated retroflex stop /ṭh/ and the voiced aspirated retroflex stop /ḍh/ are pronounced as voiced dental stop /d/.
e.g. 4.19  paṭham > /paadam/  ‘lesson’

maṭhayan > madayam  ‘fool’

muṭhan > muudan  ‘fool’

The voiceless aspirated palatal stop /ch/ is pronounced as voiceless unaspirated palatal stop /cl/ in the word initial position and as geminated /cc/ in word medial position.

e.g. 4.20  chaaya > /caaya/  ‘shade’

acchan > /accan/  ‘father’

It is a common deviation which has been found among all the speakers in language use. So it cannot be considered as abnormality.

Similarly, voiced aspirated palatal stop /jh/ is pronounced as voiced unaspirated palatal stop /j/. Since it is a common phenomenon, it cannot be considered as a deviation from the normal children.

e.g. 4.21  jhaansi > /jaasi/  ‘jhansi’

The voiceless aspirated velar stop /kh/ and voiced aspirated velar stop /gh/ are substituted by voiceless velar stop /kl/.

e.g. 4.22  mukham > /mokam/  ‘face’

nakham > /nakam/  ‘nail’

meeghan > /meekam/  ‘cloud’
Some cases substituted voiceless sounds instead of voiced sounds in the word medial position.

The voiced velar stop /g/ is substituted by voiceless velar stop in word medially.

\[\text{e.g. 4.23} \quad \text{veegam} \quad > \quad /veekam/ \quad \text{‘fast’} \]
\[\text{ŋagaram} \quad > \quad /ŋakaram/ \quad \text{‘city’} \]

The voiced palatal stop /j/ is pronounced as its corresponding voiceless sound /c/ medially.

\[\text{e.g. 4.24} \quad \text{raajaavə} \quad > \quad /raacaava/ \quad \text{‘king’} \]
\[\text{puuja} \quad > \quad /puuca/ \quad \text{‘pooja’} \]

The alveolar flap /r/ is substituted by the frictionless continuant /y/ when it is followed by a vowel.

\[\text{e.g. 4.25} \quad \text{karaññu} \quad > \quad /kゃャну/ \quad \text{‘cried’} \]
\[\text{ciri} \quad > \quad /ciyi/ \quad \text{‘smile’} \]

For the production of trill sounds articulation of the tongue more than one time and rapid vibration of vocal cords with the help of rushing airstream are needed which is a complex task for retarded children. So there is a tendency to substitute the trill sounds with other sounds. The alveolar trill /R/ is substituted by the dental stop /t/ word initially and medially.
As an exception of this, there was a tendency to substitute /y/ instead of /R/ in the medial position.

e.g. 4.27 peRoott;a > /peyootta/ ‘parata’

The geminated cluster of alveolar trill /R/ that is, /RR/ is pronounced as geminated voiceless dental stop /tt/.

e.g. 4.28 paaRRa > /paatta/ ‘cockroach’

The palatal fricative /ʃ/ is substituted by the corresponding palatal stop /c/ in order to avoid complexity in articulation.

e.g. 4.29 šakti > /catti/ ‘power’

paša > /paca/ ‘gum’

puļiļššeeri > /pulicceeri/ ‘curry’
It has been seen that there is a tendency in some cases to substitute the alveolar fricative /s/ by the palatal stop /c/ in word initial and medial positions due to defective articulation.

\[\text{e.g. 4.30} \quad \text{sinima} > /\text{cinima}/ \quad \text{‘cinema’}\]

\[\text{bassə} > /\text{baccə}/ \quad \text{‘bus’}\]

\[\text{paayasam} > /\text{paayacam}/ \quad \text{‘gheer’}\]

\[\text{sooppə} > /\text{cooppə}/ \quad \text{‘soap’}\]

It is very difficult to articulate the consonant clusters by the retardates and there is a tendency to minimize the complexity. So sometimes the retroflex as well as palatal consonants may be pronounced with its corresponding bilabial dental clusters or sometimes there is a tendency to simplify the clusters into single consonants or its geminated forms. The palatal cluster /-nc/ is changed into a dental cluster /-nt/.

\[\text{e.g. 4.31} \quad \text{sañci} > /\text{sañṭi}/ \quad \text{‘bag’}\]

\[\text{iñci} > /\text{iñṭi}/ \quad \text{‘ginger’}\]

\[\text{xi. The consonant cluster /-nt/ is substituted by /-ṇṭ/}.

\[\text{e.g. 4.32} \quad \text{ceñṭa} > /\text{ceñṭa}/ \quad \text{‘drum’}\]

\[\text{vañṭi} > /\text{vañṭi}/ \quad \text{‘vehicle’}\]

\[\text{kañṭu} > /\text{kañṭu}/ \quad \text{‘saw’}\]
Since they have difficulty in pronouncing consonant clusters, most of the consonant clusters are substituted by geminated consonants.

The voiced consonant cluster /-nd/ is pronounced as dental nasal geminated form /-nn/.

\[\text{e.g. 4.33 sunda/dari} > /su\ddot{n}ari/ \quad \text{‘beautiful girl’}\]
\[\text{ca\d{n}anam} > /ca\ddot{n}anam/ \quad \text{‘sandal’}\]

Since it is a common phenomenon found in many regions or dialects it cannot be considered as a language problem.

The consonant cluster /-kt/ is pronounced as geminated dental stop /-tt/.

\[\text{e.g. 4.34 rektam} > /rettam/ \quad \text{‘blood’}\]
\[\text{bhakti} > /patti/ \quad \text{‘devotion’}\]
\[\text{sakti} > /catti/ \quad \text{‘power’}\]

The consonant cluster /-ddh/ is pronounced as its corresponding voiceless bilabial stop in its geminated form.

\[\text{e.g. 4.35 vriddhan} > /virtan/ \quad \text{‘old man’}\]
\[\text{buddhi} > /butti/ \quad \text{‘intelligence’}\]

The consonant cluster /-kt/ is substituted by the geminated form of retroflex stop /t/, that is, /tt/.
It is a common phenomenon and it cannot be considered as a language problem.

The consonant cluster /-ṣṭ/ is substituted by the corresponding geminated form /ṭṭ/.  
e.g. 4.37  ḍoṭṭam > /ṭṭam/ ‘like’  
kaṭṭam > /kaṭṭam/ ‘pity’

The consonant cluster /-ṭṭh/ is substituted by /tt/.  
e.g. 4.38  pRaartṭikkā > /paarttikkā/ ‘pray’

The consonant cluster /-ṣṭ/ is substituted by /tt/  
e.g. 4.39  pustakkā > /puttakā/ ‘text book’  
kastuuri > /kattuuri/ ‘name’

The consonant cluster /-tR/ is changed in to /tt/ in its medial position.  
e.g. 4.40  raatRi > /raatti/ ‘night’  
patRam > /pattam/ ‘newspaper’

The consonant cluster /-pn/ is changed in to /pp/.  
e.g. 4.41  svapnam > /soppam/ ‘dream’
The consonant cluster */-ks/* is changed in to */ss/.

e.g. 4.42 pakṣi > /paśṣi/ ‘bird’

vrakṣam > /vṛssam/ ‘tree’

Some cases have a tendency to substitute */-ks/* in to */cc/.

e.g. 4.43 nakṣatam > /naccatRam/ ‘star’

pakṣi > /pacci/ ‘bird’

Some of the consonant clusters are reduced to a single consonant by omitting one member of the cluster and maintaining the other.

The cluster */-ks/* is reduced to the sound */s/*. Here the vowel */æ/* has changed in to */aa/* and the consonant */k/* has omitted from the cluster */-ks/*.

e.g. 4.44 ṭaeksi > /taasi/ ‘taxi’

*/-ls/* is changed in to */s/*. Here the sound */l/* has omitted from the cluster */-ls/*.

e.g. 4.45 neelsg > /neesg/ ‘nurse’

*/-sk/* is changed in to */s/*. Here the sound */k/* has omitted from the cluster */-sk/*.

e.g. 4.46 skuul > /suul/ ‘school’

It can be considered as a dialectal phenomenon.
/-pR/ is reduced by the sound /p/. Here the sound /R/ has omitted from the cluster /-pR/.

e.g. 4.47  pRaaRdhikkə > /paartikkə/  ‘pray’

pRaavə > /paavə/  ‘pigeon’

The sound /R/ is omitted from the cluster /tR/ and /t/ has substituted by /t/.

e.g. 4.48  tRæin > /teyin/  ‘train’

And some cases omitted the stop sound /p/ instead of /R/.

e.g. 4.49  tRæin > /Re yin/  ‘train’

/-pl/ is reduced in to /p/ by omitting the sound /l/.

e.g. 4.50  pleyin > /peyin/  ‘plane’

xiv. From the combination of the cluster, consonant + v followed by the vowel /a/ has a tendency to simplify as consonant + vowel /o/ in the word initial syllable.

e.g. 4.51  svantam > /sontam/  ‘own’

śvaasam > /soosam/  ‘breath’

dvaaram > /dooram/  ‘opening’
ii) Vowel Substitution

Substitution of one vowel instead of another vowel is called vowel substitution.

Although the case is aware of the phoneme /u/ and uses very familiar words like /umma/ ‘mother’, /u/ is substituted by /o/ in most of the time while communication. But this cannot be considered as language impairment since it may be a language change due to dialectal variation.

e.g. 4.52 mukham > /mokam/ ‘face’

kuraiñan > /kooñan/ ‘monkey’

The front close vowel /i/ is changed in to front mid vowel /e/. These are common phenomenon found in the dialects of South Dravidian languages.

e.g. 4.53 ila > /ela/ ‘leaf’

kiñaRə > /kenaRə/ ‘well’

The vowel /u/ is found substituted by the vowel /a/ when it occurs in the word medial position.

e.g. 4.54 parunta > /paRanta/ ‘eagle’

kaluta > /kayata/ ‘donkey’

alukkə > /ayakkə/ ‘dirt’
b) Simplification or Cluster Reduction

Simplification of a consonant cluster by reducing it to one sound is called cluster reduction. Since the case have less comprehension and production of complex sounds, they have a tendency to simplify the clusters by inserting a vowel in between the sounds. It is more frequently noticed in the production of clusters in the word initial position and sometimes in the medial position also.

If one of the components of a cluster is a flap /ɾ/ the vowel /i/ is inserted in between the cluster elements.

e.g. 4.55 vRatti > /virtti/ ‘cleanliness’

kRişi > /kiRci/ ‘agriculture’

vRaddhan > /virttan/ ‘satisfaction’

The vowel /a/ is inserted between the consonant cluster consists of stop consonants +alveolar lateral /l/.

e.g. 4.56 pľaavo > /palaavo/ ‘jack fruit tree’

kľaassu > /kalaassu/ ‘class’

Sometimes the unstressed vowel /a/ is inserted between the bilabial consonant and the trill /ɾ/.

e.g. 4.57 pRaavo > /pəRaavo/ ‘pigeon’
mRəgam > /məRəkam/ ‘animal’

The vowel /u/ is inserted to simplify some consonant clusters.

e.g. 4.58 viṣṇu > /visuṇu/ ‘name’

/gya/ is pronounced as /-giya/. The vowel /i/ is inserted between the sounds /g/ and /y/.

e.g. 4.59 bhaagyam > /paagiya/ ‘luck’

deeshyam > /deesiyam/ ‘anger’

satyam > /sattiyam/ ‘truth’

c) Omission

It is the deletion of the sounds, morphemes, or words from a sentence. The child omits letters of some words or sometimes whole words from a phrase or sentence to simplify. If consonant omission occurs consistently, it makes the child’s speech highly unintelligible.

i) Initial Consonant Omission

They have the tendency to omit initial consonant to make the pronunciation easier especially from the words started with the bilabial stop /p/. Omissions of some other sounds are also rarely seen.

e.g. 4.60 puucca > /uucca/ ‘cat’
paṭṭi > /atti/ ‘dog’

paṣu > /asu/ ‘cow’

pappatam > /appadam/ ‘papad’

looRi > /ooRi/ ‘lorry’

ii) Medial Consonant Omission

In the speech of retardates, consonants especially the nasal and lateral sounds in the medial position are omitted occasionally.

e.g. 4.61 jhaansi > /jaasi/ ‘place name’

neelsa > /neesə/ ‘nurse’

iii) Final Consonant Omission

The nasal sound /n/ in the word final position is omitted frequently.

e.g. 4.62 maṭhayanan > /maṭ*aya/ ‘fool’

kallan > /kalla/ ‘thief’

iv) Syllable Omission

Syllable or syllables of words is omitted frequently in the word medial position in order to avoid complexity.
In the following example the syllable /ti/ in the word medial position is omitted to avoid complexity.

**e.g. 4.63** patinețța > /pannețța/ ‘eighteen’

The syllable /ra/ is omitted in the following tri syllabic word along with the lengthening of the vowel in the first syllable to maintain the syllabic omission. (cf.eg. 4.52)

**e.g. 4.64** kuraņnan > /koonnan/ ‘monkey’

It is difficult to pronounce compound words which consist of four syllables to the retardates. So, the tetra syllabic word is simplified by omitting the syllable /ppi/ in the following example.

**e.g. 4.65** kaappippoti > /kaapoti/ ‘brown’

In the following example which consists of six syllables, the syllable /ru/ is omitted.

**e.g. 4.66** urulakkiļaņņa > /ullaŋkiyanņa/ ‘potato’

The word pooyiṭṭuŋḍa is a combination of a main verb and two auxiliary verbs /ittu/ and /undu/. From this combination one auxiliary /ittu/ is deleted.

**e.g. 4.67** pooyiṭṭuŋḍa > /pooyuŋda/ ‘had been gone’
In another example melukutiri, a five syllabic word, two syllables /ku/ and /ti/ are deleted and thus the word has simplified to a tri syllabic form /meyiri/.

e.g. 4.68 melukutiri > /meyiri/ 'candle'

Similarly in another example puRutticcakka, a five syllabic word, two syllables /Ru/ and /tti/ are omitted. Thus the word has simplified to a tri syllabic form as puuccakka.

e.g. 4.69 puRutticcakka > /puuccakka/ 'pine apple'

d) Distortion

Children do not pronounce the sounds clearly and it will be distracted by the impaired articulation. While acquiring sounds a child goes through a series of approximations before the standard sound is acquired. In these cases pronunciation of sounds is distorted in many places.

The retroflex sound /t/ is found distorted when it occurs word medially

e.g. 4.70 kaṭala > /kat*ala/ 'nut'

koṭukka > /koṭ*ukka/ 'give'

paṭṭi > /paṭṭ*i/ 'dog'

The aspirated sound /tha/ is pronounced by some children. But it found distorted.
e.g. 4.71 katha > /kath*a/ ‘story’

The voiced palatal sound /j/ is found distorted in some places when pronounced.

e.g. 4.72 raajaavə > /raaj*aavə/ ‘king’

e) Multiple Phonological Processes

If more than one phonological process such as substitution, cluster reduction, omission, distortion etc co-occurs within a single word, it is said to be multiple phonological processes.

The following example is a five syllabic word. The multiple phonological processes occurred here is syllable omission and substitution. The two syllables /lu/ and /ku/ are omitted from the word. Some sound changes are also occurred. The sound /l/ changed in to /y/ followed by the vowel /u/ is substituted by the vowel /ii. Thus the word has simplified in to a tri syllabic form.

e.g. 4.73 meļukutiri > /meyiri/ ‘candle’

In the word kurañnan, three multiple phonological processes have occurred and changed into /kooñnan/. They are syllable omission, substitution and vowel lengthening. The syllable /ra/ is omitted and the vowel /u/ is substituted by /o/ along with lengthening (cf. eg. 4.452).

e.g. 4.74 kurañnan > /kooñnan/ ‘monkey’
Syllable omission along with vowel lengthening has occurred in the word PuRutticcakka. Two syllables /Ru/ and /tti/ has omitted along with the lengthening of the vowel /u/ in the first syllable of the word and has changed in to /puuccakka/.

e.g. 4.75 puRutticcakka > /puuccakka/ ‘pine apple’

In the following example /uruļakkīlāṇa/ syllable omission and substitution of different sounds are occurred. The word has six syllables. Here the syllable /ru/ is omitted. In addition there are sound changes also. The sound /l/ has changed in to /l/ in its geminated form. It is interesting to note that after the syllable omission, the geminated form of /k/ that is, /kk/ is changed in to the nasal cluster /nk/ which is a more complex form. It is difficult to find uniformity in some aspects of sound change in retardates. In addition, the sound /l/ is substituted by the sound /y/ which is already mentioned and /ńń/ changed in to /ńń/.

e.g. 4.76 uruļakkīlāṇa > /ullankiyaņņ/ ‘potato’

In the following example tRæin, cluster reduction and substitution are occurred. The cluster /tR/ has reduced in to a single consonant /t/ by omitting the other member /R/ which is followed by the substitution of rettroflex /t/ by the dental /t/ and it has changed into /teyin/ (cf.eg. 4.48).

e.g. 4.77 tRæin > /teyin/ ‘train’
In the following example, the cluster /kʂ/ is substituted by the geminated form of palatal stop /c/. Another cluster /tR/ is simplified by inserting the vowel /ə/ (cf. eg. 4.43).

e.g. 4.78 ṇakṣatRam > /ṇaccatRam/ 'star'

Two types of phonological processes, cluster reduction and substitution are occurred in the following example. The word initial cluster /pR/ is simplified by the consonant /p/. In addition, the dental stop /t/ is substituted by the frictionless continuant /y/ and the final consonant cluster /jũ/ is assimilated as /nj/.

e.g. 4.79 pRatijña > /payiňña/ 'pledge'

Substitution of /R/ instead of /t/ occurred in this example along with the substitution of the vowel /u/ by another vowel /a/ (cf. eg. no. 4.54).

e.g. 4.80 paruntō > /paRantō/ 'eagle'

In the following examples, two substitution processes are occurred together. The lateral sound /l/ is substituted by the continuant /y/ and the vowel /u/ is substituted by the vowel /a/ (cf. eg. 4.54).

e.g. 4.81 kaluta > /kayata/ 'donkey'

alukka > /ayakkə/ 'dirt'

Substitution, consonant omission and syllable omission are the phonological processes occurred in the following example. The initial
Consonant alveolar trill /R/ is substituted by the dental stop /t/. The lateral sound /l/ is omitted word medially and the medial syllable /sRRee/ is omitted to simplify the word since it is a compound loan word (cf. eg. 4.26).

E.g. 4.82 Reyilvee sRReesan > /teyiveesan/ ‘Railway station’

The initial cluster /vR/ is simplified to /v/ by omitting another member /R/ which is called cluster reduction. Similarly, the medial cluster /ks/ is substituted by the geminated form of one of the members of the cluster /s/ (cf. eg. 4.42).

E.g. 4.83 vRaksam > /vəsəm/ ‘tree’

In the following example, the retroflex sound /t/ in the initial position is substituted by the dental stop /t/ and /RR/ in word final position is substituted by /tt/ (cf. eg. 4.6, 4.28).

E.g. 4.84 tikkaRRa > /tikkatta/ ‘ticket’

The consonant cluster reduction occurred by inserting the vowel /i/ in between the cluster sounds and the retroflex /s/ is substituted by palatal /c/ (cf. eg. 4.55, 4.26).

E.g. 4.85 kRaşi > /kiRci/ ‘agriculture’

In the word /mRəgam/ the initial cluster /mR/ is reduced by inserting the vowel /ə/ and the voiced /g/ is substituted by the voiceless stop /k/ (cf. eg. 4.57).
e.g. 4.86 mRəgam > /məRəkam/ ‘animal’

The syllable /iṭṭ/ is omitted and the cluster /ṇḍ/ is substituted **here instead** of the cluster /ṇḍ/ in the given example (cf. eg. 4.63).

e.g. 4.87 pooyitṭundə > /pooyundə/ ‘have been gone’

In the following example, the word initial consonant /ś/ is substituted by the palatal stop /c/ and the cluster /kt/ is reduced in to the geminated form of one of its member /ṭ/ (cf. eg. 4.29, 4.34).

e.g. 4.88 śakti > /catti/ ‘power’

### 4.3.2 Morphological Problems

The analysis discovers the problems found in using words, parts of words or morphemes and the grammatical categories.

*a) Pronoun*

They can use the first person singular /ñaan/ as /ñaan/, second person singular /nii/ ‘you’; and third person singular /avan/ ‘he’ and /aval/ ‘she’ and the third person inanimate /atu/ ‘that’ and /itu/ ‘this’. Most of them can use the first person plural pronoun /ñammal/ ‘we’ and the third person plural pronoun /avar/ ‘they’. But the plural and honourific forms such as /ñaññal/ ‘we (excl.)’, /taan/ ‘you’, /niññal/ ‘you’, /ayaal/ ‘you’, /addeeham/ ‘you’, /iddeeham/ ‘you’ etc are rarely used.
e.g. 4.68  

<table>
<thead>
<tr>
<th><em>nāan atikkilla</em></th>
<th>&gt;</th>
<th><em>nāan atikkuula</em></th>
<th>‘I wont beat’</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>nāan cooruntu</em></td>
<td>&gt;</td>
<td><em>nāan coorunte</em></td>
<td>‘I had food’</td>
</tr>
<tr>
<td><em>nīi poo</em></td>
<td>&gt;</td>
<td><em>nīi poo</em></td>
<td>‘you go’</td>
</tr>
<tr>
<td><em>avan karaṇīu</em></td>
<td>&gt;</td>
<td><em>avan karaṇe</em></td>
<td>‘he cried’</td>
</tr>
<tr>
<td><em>aval varilla</em></td>
<td>&gt;</td>
<td><em>aval varuula</em></td>
<td>‘she will not come’</td>
</tr>
<tr>
<td><em>atu veenam</em></td>
<td>&gt;</td>
<td><em>atu veenam</em></td>
<td>‘(I) want that’</td>
</tr>
<tr>
<td><em>itu veenta</em></td>
<td>&gt;</td>
<td><em>itu veenta</em></td>
<td>‘(I) don’t want this’</td>
</tr>
<tr>
<td><em>avar varum</em></td>
<td>&gt;</td>
<td><em>avaru varum</em></td>
<td>‘they will come’</td>
</tr>
<tr>
<td><em>nammal jayiccu</em></td>
<td>&gt;</td>
<td><em>nammala jayicca</em></td>
<td>‘we won’</td>
</tr>
</tbody>
</table>

b) Case Markers

A case marker is a grammatical category of a noun indicating its relationship to other words in a sentence. The child uses the suffix /-a/ instead of the genitive case marker /-ute/.

E.g.4.69  

*iti avalute amma ane*  >  *aval*a amma ‘This is her mother’

*iti avarute viite ane*  >  *avara viit*e ‘It is their home’

The child uses the suffix /a/ instead of the accusative case marker /e/

E.g.4.70  

*nāan avare viliccu*  >  *avara viliccu ‘I called them’
The genitive case marker /-nRe/ is changed into /-nRa/.

Eg. 4.71  ito avanRe viitə aanə  > avanRa viitə 'This is his home'

ito enRe amma aanə  > enRa amma 'This is my mother'

The instrumental case markers /-aal/ and /-kontu/ are not used by the retardate child. He uses the noun and verb forms as it is.

Eg. 4.72  avan peenayaal elut  > eyuti peena 'He wrote by pen'

aval peenakoŋtu varaccu  > peena varaccu 'she draw with pen'

The locative case marker /-il/ is usually omitted.

Eg. 4.73  ŋaan viitti pooyi  > viittə pooyi 'I went home'

enRe kəŋŋil Poti Viiŋu  > kəŋŋə poti 'dust has gone in my eye'

Instead of the dative case marker /-kku/, the marker /-nu/ is commonly used.

Eg. 4.74  enikku  vellam veηam  > ŋaanu vellam veηam

'I want water'
ammanam saariiinta 'My mother has sari'
raajuun peena veeam 'Raju want pen'

c) Connecting words

They are aware of the connecting word /um/ which is frequently used.

e.g. 4.75 acchanum ammayum unta > acca6um ammeem unta
    '(I) have father and mother'

   aamayum muyalum > aameem moyalum
    'tortoise and rabbit'

ciRRappanum moolum > cittappanum moolum
    'uncle and daughter'

d) Tense

They are able to use simple present tense, past tense and future tenses, but they can not use continuous or perfect tense forms. Past and future tenses are used more frequently than the present tense form. They are able to use present tense marker /-unna/, but not frequently. Future tense marker /-um/ is used most frequently. Even though they can use past tense, they are not able to use all the past tense markers in Malayalam. The past tense markers that have been used by them are /n/, /nt/, /i/, /cc/, /in/ and /tt/.

e.g. 4.75 viitil pookunu > viita poonga '(I) go home'
/pooŋa/ is the Dialectal variation of /pookunŋu/. Here /ŋ/ in pooŋa is changed in to /ŋ/.

- ceettan pathikkaan pookunŋu > ceetta paṭ*ikkaamboonga
  ‘elder brother goes to study’

- aama payeppayye naṭanŋu > aama payeppayye naṭanŋa
  ‘tortoise walked slowly’

- muyal aṅnetti > moyal aṅnetti
  ‘Rabbit reached there’

- paayasam kuticcu > paayasam kuticca
  ‘drunk gheer’

- ceettan paṇikkku pooyi > ceetta paṇikkku pooyi
  ‘brother has gone for work’

- kuŋŋu karaŋŋu > kuŋŋu kayaŋŋu ‘child cried’

- sinima kaŋtu > siima kaŋtu ‘saw film’

- kRikkǝRRǝ kalikkum > kikkattǝ kalikkum
  ‘(I) will play cricket’

- svaamiye toḷum > soomiye toyum
  ‘will pray god’
e) Gender

They have general awareness on gender and can differentiate males and females. Gender concept is developed.

\[\text{e.g. 4.76 } \text{avanum avāḷum vaṇṇu } > \text{avanum avāḷum vaṇṇa}\]

'he and she came'

\[\text{ciRRappanum moōḷum } > \text{cittappanum mool*um}\]

'uncle and daughter'

4.3.2.1 Vocabulary

The receptive capacity of the cases is limited to very familiar objects only. When figures of different familiar objects such as various food items, fruits, furniture, parts of the body, vehicles etc. were shown they could identify very familiar items only. They can differentiate the use of different furniture and can recognize familiar fruits and food items. Most of them recognized /bassa/ and /kaaRα/ and all other vehicles as /vaṇṭi/. They know only the external organs of the body, not internal organs.

Most of the cases differentiate big and small, tall and short, more and little. But it was difficult to differentiate big from different sizes. They use the adjective /valdα/ for big, tall and more, and the word/ certα/ for small, short and little. They can differentiate verb modifiers such as /akattα/ 'in' and poRatta/ 'on'; /patukke/ 'slow' and /vekkam/ 'fast'; and mukaļiļ ( >mooli 'up') and /taaye/ 'down'.
They can use the names of some familiar colours such as /pacca/ ‘green’, /niila/ ‘blue’, /cooppa/ ‘red’ etc. While using the words ending with the nasal /n/, usually they omit the nasal especially in kinship terms.

E.g. 4.77 acchan > acca ‘father’

CEEÔTAN > ceetta ‘elder brother’

maaman > maama ‘uncle’

In addition to these words they can use amma, ceecci and maami correctly. For younger brother and sister most of them use names only. They use /illa/ and /veentâ/ as negative forms and /eppool/ ‘when’, /evoote/ ‘where’ and /entâ/ ‘what’ as the interrogative forms.

4.3.3 Syntactical Problem

Most of the cases use single word or two word utterances. These single words or two words serve as complete sentences in their sense. Three word sentences are also rarely used. But grammatical categories such as cases, tense forms, connecting words etc are usually omitted and the sentences are characterized by pauses also. So it is difficult to understand their communicative sentences completely especially for strangers. They use verbs with a sense of complete sentence. In most of the conversation the noun or verb or object may act as a complete sentence.

E.g. 4.78 /vaal/ ‘come’
The listener has to ask questions ‘where to’ and ‘for what purpose’ to elicit more information from him. Sometimes, only the subject is used as a complete sentence.

E.g. 4.79 /ŋaanu/ 'I'

Then the listener has to ask questions like /entu ceytu/ ‘what did you do’ or/ entu paRRi/‘what happened’ etc. Then the next answer will come in single word as ‘pooyi’ ‘went’. Then again the listener has to ask questions like /evite/ ‘where’ /eppool/ ‘when’ /entu/ ‘why’ /ennane/ ‘how’ etc. to elicit information. This indicates that he has comprehension on all the interrogative patterns and also the comprehension of sentences. The sentence requires storing of too much verbal information in memory while processing the sentences. Limitation of this storage system because of impaired information processing and poor comprehension and concept development in sentence level make difficult to them in the use of sentences. So that they omit grammatical categories such as verb, noun, object, auxiliary verbs etc that will make confused word order. They hardly use exclamatory sentences.

In most cases they use two word utterances which function as complete sentences even though they lack grammatical categories. They use these utterances to indicate their needs, and to specify objects.

E.g. 4.80 paalu veenam > paalu veenam

‘need milk’
cooRu veṇṭa > cooRu veṇṭa

‘don’t want boiled rice’

peena taa > peena taa ‘give pen’

In order to understand complete meaning, the hearer has to ask questions to him.

They can use statement sentences. But the sentences may be two word utterances.

E.g. 4.81 ceecci vaṇṇu > ceecci vaṇṇə ‘sister came’

peena taṇṇu > peena taṇṇə ‘(she) gave pen’

Always they have a tendency to reduce the complexity of the sentences they use. If three word sentences have to pronounce they omit the subject or the verb and reduce it as two word sentences.

E.g. 4.82 amma iṇṇale vaṇṇu > amma vaṇṇə ‘mother came’

enikku peena veṇṇam > enu veṇṇam ‘I want pen’

Similarly, some of them can use three word sentences rarely when there is a need of using more complex sentences. Even though they can use three word sentences these are characterized by prolonged pauses between each word, and omission of grammatical categories such as connective words or conjunctions, cases, link morphs etc. The word order also has changed.
They can use negative sentences by using with the negative words like /illa/ and /veenda/. Sometimes the negative word /alla/ is also used. It is observed that the negative word /arutu/ is not used in their conversation.

E.g.4.84 aval ṇaale varilla > ṇaale varuulla
‘she will not come tomorrow’

itə enRe pencil alla > enRa illa … pencil
‘It is not my pencil’

ceecci pookaŋta > ceecci poonta
‘you (elder sister) don’t go’

They are able to use yes/no type questions and wh-type questions

E.g.4.85 peena tarumo > peena tarvoo
‘can you give me the pen’

ŋaale varumo > aale varvoo
‘are you coming tomorrow’
If they try to use complex sentences, they have a tendency to change the word order of the sentence they spoken.

\[ \text{ita aaruṭe bukkọ aanu} \] > \[ \text{aara bukkọ 'whose book it is'} \]

\[ \text{eviṭe pookunnu} \] > \[ \text{eviṭe poona 'Where are you going'} \]

\[ \text{eppool varum} \] > \[ \text{eppa varum 'when will you come'} \]

\[ \text{e.p. enRe pencil alla} \] > \[ \text{enRa illa ... pencil 'It is not my pencil'} \]

\[ \text{ata avalute peena aana} \] > \[ \text{avala peena ata 'It is her pen'} \]

\[ \text{ita enRe acchan aana} \] > \[ \text{enRa acca ita 'It is my father'} \]

Spontaneous speech is elicited by asking a story to narrate. Most of the cases could not narrate the story. Even though the others narrate it could not be completely intelligible. While they narrating the story, they had difficulty to combine words with plurals, verb endings and function words. Grammatical categories such as connecting words, tense markers, case markers etc were not correct. It shows that they have only a limited vocabulary in their memory. So they have difficult to select the
appropriate word and combine them in a proper word order. There was some missing in the continuity of the story since they have difficulty in retrieving information from the memory. Most of the sentences that have been used were grammatically incorrect along with pauses and filled pauses like um, pinne etc. (The narrated stories are given in the appendix 3.)

4.4 Mean Length of Utterances (MLU) analysis

MLU analysis discovers the quantity of morphemes and words pronounced by the child. It gives the count of morphemes and words per total utterances produced by the child. If the Mean Length of Utterances value is high the child is able to produce more complex sentences and if the value is less it means that the child produces only simple utterances.

The mean length of utterances pronounced by each case is given below. The mean length of utterances in words and morphemes are given along with the Brown’s stages of development. Stages are determined by the child’s Mean Length of Utterances with reference to Brown’s chart (Brown, 1973).
Table 23
MLU Count of the cases

<table>
<thead>
<tr>
<th>Case</th>
<th>MLU in words</th>
<th>MLU in morphemes</th>
<th>Brown’s stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, A</td>
<td>2.23</td>
<td>2.57</td>
<td>III</td>
</tr>
<tr>
<td>2, B</td>
<td>1.42</td>
<td>1.94</td>
<td>Late I</td>
</tr>
<tr>
<td>3, C</td>
<td>1.02</td>
<td>1.38</td>
<td>Early I</td>
</tr>
<tr>
<td>4, D</td>
<td>2.09</td>
<td>2.43</td>
<td>II</td>
</tr>
<tr>
<td>5, E</td>
<td>1.07</td>
<td>1.09</td>
<td>Early I</td>
</tr>
<tr>
<td>6, F</td>
<td>1.34</td>
<td>1.65</td>
<td>Late I</td>
</tr>
<tr>
<td>7, G</td>
<td>1.24</td>
<td>1.40</td>
<td>Early I</td>
</tr>
<tr>
<td>8, H</td>
<td>1.29</td>
<td>1.44</td>
<td>Early I</td>
</tr>
<tr>
<td>9, I</td>
<td>1.94</td>
<td>2.26</td>
<td>Early II</td>
</tr>
<tr>
<td>10, J</td>
<td>2.08</td>
<td>2.23</td>
<td>II</td>
</tr>
</tbody>
</table>

The following is the graphical representation of the MLU in words and morphemes of each case. The ‘x’ axis of the graph shows the cases and the ‘y’ axis represents the MLU values. MLU in words is shown in blue colour and MLU in morphemes is shown in red colour.
Graph 1
Graphical representation of MLU’s in cases

It shows that the Mean Length of Utterances produced by the cases are very less. Here the less value of MLU shows that the cases are not able to produce more complex sentences. The cases A, D, I and J have comparatively higher MLU values which show that they have somewhat better language skills compared with others. Brown’s stages shows that the case A has attained the MLU stage of III and the cases D, I and J have reached the MLU stage of II. All other cases are in the stage of I. It means that their language is in the stage of single word utterances.