CONCLUSION

The objectives of this dissertation "Language Intervention program for the mentally retarded: A Psycholinguistic perspective", are to prepare a language assessment tool for the retarded in an interdisciplinary way for psycholinguistic analysis, to analyze the communication problems of the mentally retarded while speaking Malayalam and to discuss about the language intervention program for the moderately mentally retarded in psycholinguistic perspective. This dissertation contains introduction, five chapters and conclusion. Introduction gives some basic ideas on language and communication. The chapter I Mental retardation an overview possess a general information about mental retardation and the Chapter II, Historical Perspectives discusses about the history of mental retardation and some related literature in this field. The methodology of the study is explained in the Chapter III, methodology. Fourth chapter is the case analysis and the fifth chapter discusses about the language intervention program. This is the total organization of the chapters of this dissertation.

Language ability of ten moderately retarded children has been assessed by preparing an assessment program given in the appendix 1. The case history and language data has been collected for a psycholinguistic analysis. The collected data has been analyzed psycholinguistically in different levels of language such as phonology, morphology and syntax. While collecting data it has been noted that they have very less attention span. They were very interested in the beginning.
and seem to be very cooperative for a maximum of five to six minutes. Then after sometime their concentration became low and it is found that they will be in their world of thought found listening to something else. They have difficulty in focusing their attention to a task or stimulus for more than five minutes. It results in breaking the continuity of information exchange.

Phonological analysis has been done by checking the articulation of different speech sounds including clusters in word initial, medial and final positions of the word. Phonological analysis reveals that these cases have articulation problems such as substitution, omission, cluster reduction and distortion. A number of multiple phonological processes are also noted. Among the nasal sounds, they are able to pronounce only the bilabial nasal /m/ and the dental nasal /n/. All other nasal sounds such as /n/, /n/ and /n/ are substituted by /ŋ/. For example, maaŋa is pronounced as /maaŋa/, kuŋa as /kuŋa/ and /maŋa/ as maŋa. It is found that most of the children could not use the retroflex sounds /ʈ/ and /ɖ/. These sounds are pronounced by some cases but as distorted sounds. The sound /ʈ/ is substituted by different sounds such as /t/, /d/ and /y/. The sound /ʈ/ changed to /t/ if it occurred word initially as in the case of tikkaR into /tikkatta/ and is changed into /d/ if occurred medially as in the case of viiṭa as /viidə/. It is pronounced as /y/ by some cases as in words such as /keyaŋŋə/ for kiṭaŋa. The geminated form /tṭ/ is pronounced as /tt/ as in /ceettan/ instead of ceṭṭan. The sound /ɖ/ is substituted by /l/ and /R/ according to its position. In the word initial position /ɖ/ is pronounced as /l/ in the word like /loottaRə/ for /dooktaR/
and as /R/ in the medial position as in the word /RooRα/ instead of Rooḍα. Some cases used these sounds rarely but it was in a distorted form. The cases show difficulty in pronouncing the lateral sounds /l/ and /ɾ/. /ɾ/ is substituted mostly by the sound /ɾ/ like /vala/ for vala and /l/ is substituted by different sounds /yl/, /ɾl/, and /ɾ/ by different cases. For example, the word maḷa is pronounced as /maya/, /maḷa/ and /maɾa/ by different cases.

These cases find difficulty to pronounce the fricative /ʂ/ which they changed into /s/ or /c/ by different cases such as /kasaayam/ for kaṣaayam and /maci/ for maṣi. The sound /ʂ/ has changed to /c/ as paṣa into /paca/ and sometimes the sound /s/ is also changed into /c/ as in the case of sooppo into /cooppo/. They have difficulty in pronouncing aspirated sounds which they have a tendency to use as de-aspirated or de-voiced sounds. In the examples, phalam, bhuumi, budhan and chaaya the aspirated sound got de-aspirated and changed to /palam/, /buumi/, /budan/, and /caaya/ respectively. In the example bhaaratam it is devoiced into /phaaratam/ and in the example katha it is deaspirated and voiced into /kada/. The voiceless aspirated retroflex sound /dʰ/ is de-aspirated and changed into /d/ as in the case of muudhan into /muudan/. In some cases, there is a tendency to change voiced sounds into voiceless sounds in the medial position. The voiced velar and palatal stops are pronounced as its corresponding voiceless stop. For example, veegam is pronounced as /veekam/ and raajaavα as /raacaavα/. The sound /ɾ/ is substituted by /y/ as in the example, ciri by /ciyi/. The trill sound /R/ is substituted by /t/ as in kaRuppα by /katuppα/ and in one case by /ɾ/ as...
in peRooṭṭa by /peyootta/. The geminated /RR/ of /paaRRa/ is changed to /tt/ and became /paatta/. Vowel substitution is found in between /u/ and /o/, /i/ and /e/, /u/ and /a/. For example, mukham is changed in to /mokam/, ila as /ela/, and kaluta as /kayata/.

It is found that these children have difficulty to pronounce consonant clusters. They substitute the cluster /ŋt/ instead of /ṅc/ and /ṇṭ/. For example, saṅci is pronounced as /saṇṭi/ and ceṇṭa as /ceṇṭa/. The cluster /ṇṅ/ is changed into /nn/ as in suṇḍari into /suṇṇari/. Similarly they have shown a tendency to substitute many clusters by geminated as in rektam by /rettam/, iṣṭam by /iṭṭam/, raatRi by /raatti/, pakṣi by /paṃsi/ etc. Sometimes they substitute single consonant by omitting the other consonant like ṭaṅksi by /ṭaasi/, pRaavv by /paavv/ and skuul by /suul/. The clusters are found reduced or simplified by inserting a vowel such as /i/, /e/, /u/, /a/ in between the consonants like in vriddhan as /vrittan/, pLaavv as /plaavv/, pRaavv as /praava/, and viṣṇu as visunu/.

They have a tendency to omit consonants in word initial, medial and final positions. Initial, medial and final consonant omissions can be seen as shown in the examples puucca as /uucca/, neelė as /neeṣ/, and kalJa as /kala/ respectively. The syllables are also seemed to be omitted to make the multisyllabic words in simpler forms. For example the four syllabic word patineṭṭe is pronounced as trisyllabic form /panneṭṭt/. (Distortion is represented by the symbol *).

Even though pronunciation of retroflex sound is found difficult to them, some children pronounced the sound /t/ but in a distorted form as
in kaṭala as /kaṭ*ala/. Similarly the aspirated form is pronounced by some children as distorted as seen in the example /kath*a/ instead of katha. The palatal /j/ is also found distorted when pronounced by some children eg. raajaavo is pronounced as /raaj*aavo/. Different multiple phonological processes are identified in word level analysis. For example, the word meļukutiri is pronounced as /meiyiri/. Here the syllables /lu/ and /ku/ are omitted in addition to the sound changes /l/ into /y/ and the vowel /u/ into /i/.

In the morphological level of analysis, parts of speech such as adjectives, adverbs, pronouns etc. were checked. Tense markers and other grammatical categories such as case markers were analyzed. Analysis of the children’s level of vocabulary shows that they have limited vocabulary although they are able to produce some basic vocabulary. They have word finding difficulties due to impaired semantic processing. These cases have difficulty in discriminating forms, shapes, colours, direction, time, left-right orientation etc. They use singular pronouns such as /ñaan/, /niː/, /avan/, /avala/, /atu/ and /itu/ and most of them use the first and third plural pronouns /ñaammal/ and /avar/ respectively rather than the other plural and honorific forms. These children use the genitive case marker /uṭe/, /nRe/, accusative marker /e/ etc. in contracted forms with certain changes. The child uses the suffix /-a/ instead of the genitive case marker /-ute/ as in /avala/. The child uses the suffix /a/ instead of the accusative case marker /e/ like /avara/. The genitive case marker /-nRe/ is changed into /-nRa/ as in /avanRa/. The instrumental case markers /-aal/ and /-koṇtu/ are not used by the children.
Instead of that they use the noun and verb as it is in isolated forms. The locative case marker /il/ is found omitted usually and the nouns are used isolated. Instead of the dative case marker /-kku/, the marker /-nu/ is commonly used as in /enu/ instead of /enikku/.

These children are aware of and are able to use the connecting word /um/ and connect the nouns as /accagum ammeem/ whereas /ammeem/ is the contracted colloquial form of ammayum. Even though they know the three tense forms, they use past and future more frequently. Use of continuous or perfect tense forms is found difficult for them. They use present tense marker /-onna/ in a contracted form as in /poon/. They use future tense marker /-um/ as in /pookum/ more frequently and are able to use past tense markers such as /n/, /n/, /i/, /cc/, /nn/ and /tt/.

They have general awareness of gender. Most of the children are able to count up to ten. They have differentiated the adjectives /qalla/ and /ciitta/; /paavam/ and /bhayaankaram/; /palaya/ and /putiya/ etc. and the adverbs such as /akatta/ ‘in’ and poRatta/ ‘on’; /patukke/ ‘slow’ and /vekkam/ ‘fast’; and mukaJil ‘up’ and /taaye/ ‘down’. They use the adjective /valda/ for big, tall and more, and /certa/ for small, short and little. They could identify very familiar items of various food items, fruits, furniture, parts of the body, vehicles etc. While using the kinship terms, if the word ends with the nasal /n/, there is a tendency to omit the final consonant as /accha/ instead of acchan. They use /eppool/ ‘when’, /evite/ ‘where’ and /enta/ ‘what’ as the interrogative forms.
The types of sentences such as simple, compound or complex were analyzed at the syntactic level. Mostly these children use single or two-word utterances which can function like a complete sentence. The listener has to prompt the children for eliciting more utterances. Three word utterances are also used but comparatively less frequent and are usually uttered while narrating stories. Generally their speech is found limited to one or two word utterances. The analysis of different types of sentences such as interrogative sentences, negative sentences, declarative sentences etc shows that these children are able to use different type of sentences even though grammatically incorrect and few in number. They use negative forms such as /illa/ and /veența/ in isolation and also in sentences such as /peena taruulla/. They use question forms such as /entə/ ‘what’, /evițe/ ‘where’ and /eppool/ ‘when’ etc. to make question sentences like /aara bukkə/, /peena evide/ etc. They have less comprehension of complex grammatical structures. Sentences pronounced by the cases are characterised by pauses within words and in between words, hesitations and the filled pauses or linkages like /pinne/, /um/, /aa/, /əə/ etc. Most of them have a tendency to wait for a question after saying each word. They use gestures to indicate ‘yes’ or ‘no’ by nodding the head. They are hesitant to answer questions and many questions are not answered properly. Mostly the answers are found to be meaningless utterances which do not have any relation with the question asked. These children have a tendency to keep silence to many questions. Most of the cases are not able to describe an incident except the case I, A. But many of them were able to tell a story from their memory, even though the sentences pronounced have many articulatory as well as
grammatical problems. Many of the sentences uttered are not complete and do not convey complete meaning. The sentences are characterized by mispronunciations and repetitions of words, prolonged pauses between each word, and omission of grammatical categories such as connective words or conjunctions, cases, link morphs etc.

Mean Length of Utterances of words and morphemes are analysed. MLU of words pronounced by these children starts with a minimum value of 1.2 to a maximum of 2.9 and the MLU of morphemes starts with a minimum of 1.9 to a maximum of 2.57. Brown stages of development which has given as per the MLU value of each child show that this is coming under the range of the stage early I to the stage III. According to Brown stages of development chart it is clear that there are V+ stages and the MLU value will come up to 4.5+. It shows that the Mean Length of Utterances produced by the cases is very less and it is clear that they are not able to produce complex and compound sentences.

The last chapter of the dissertation discusses the psycholinguistic perspective of language intervention which can be used as a computer aided psycholinguistic intervention program. The data driven by a psycholinguistic perspective analysis can be incorporated in computer program and can develop concept based intervention program. After a short intervention training, the child could sustain attention for some more time and the memory span is increased. For example, the word /puRutticcakka/ ‘pineapple’ was pronounced by a child as /puuccakka/. After giving intervention, it has changed into /puutticcakka/. It is a
gradual change. The case is trying to understand and recall, thereby vocabulary will be developed with intelligibility and interest to learn language got improved.

From the case studies under consideration, even though the positive results are very little it can be concluded that there is a positive change towards language attitude within a short duration of time. The intervention training was conducted for a short period, yet this positive change brings more surety. Such a computer aided psycholinguistic intervention as a long term goal can make notable changes and development in the language proficiency of retarded children.