CHAPTER VI

SUMMARY AND CONCLUSION
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6.1 INTRODUCTION

Reading is defined as a self-directed process of extracting information from written or printed symbols. Reading is inevitable not only in the area of education, but is part and parcel of everyday life. Reading materials include letters and all kinds of correspondence and books for leisure, knowledge, self-development, aesthetic experience etc. With the availability of mass media, reading is becoming increasingly important. The role of reading in advertisements, notices, pamphlets, price lists etc. cannot be overlooked. Technology has played a very important role in mitigating the limitations imposed by a disability. Increase in the literacy rate makes reading a vital tool for living.

Most visually handicapped children have useful residual vision and their principal sense modality is a visual one despite their visual impairment. Genesky (1978) noted that more than 75 percent of the legally Blind had sufficient residual vision to read ordinary print.

The term low vision has been adopted in preference to residual vision, remaining vision or partial sight. Children with low vision are often misdiagnosed, misunderstood, undereducated, and socially ostracized. They are neither blind nor sighted - society does not acknowledge their existence (Jan, Freeman, & Scott, 1977). When a low vision child cannot function visually to the capacitation of the sighted world, he is moved into the world of blind. Thus one finds most of the children with low vision, in schools for the blind reading Braille when realistically they can function with residual vision in large print and sometimes in
normal print. This gives way to frustration to which adds the lesser degree of social acceptance in the group of totally visually impaired persons.

The visual learner should have the proper image or print size for accomplishing the visual task. The size of fonts needed by a low vision child will vary according to the individual eye condition. Causes of near sightedness, far sightedness, astigmatism, muscular imbalance and lack of fusion are found among both good and poor readers. Such conditions, unless dealt with, tend to result in fatigue and consequent loss of reading ability.

Some low vision children may be able to read the larger print in the primary grade levels of school, but they may have considerable difficulty with the smaller print used in the middle and upper grade levels. Although some low vision children may be able to read relatively small print for a short period of time by holding the book very close to their eyes, comfort can be enhanced by using a print size more suitable to the refractive ability of their eyes.

Items that come in large print or allow the production of large print can prove to be most valuable to the low vision student. Large print books, daily living materials and recreation materials can improve visual function without the use of optical aids.

Technological advances, particularly in computer applications, have a profound impact in reducing the handicaps experienced by low vision people. Developments of Technology give accessibility for blind and low vision
individuals to regular print materials. Sensory Aid Technology provides the low vision user with information regarding the environment which is usually obtained visually. Normally computer programmes are designed to offer drill and practice opportunity to help students to improve their reading skills. Today is a competitive world. Simply placing handicapped children into regular schools will not ensure full integration. Teaching approaches that will encourage the use of print and help speed up the intake of information gained through visual means are essential. In addition, attitudes of others towards the low vision have to be enlightened. Hence, necessary special teaching aids such as computers and modernized education should be given by well qualified special educators.

Available technology has great future in the field of education of visually impaired especially, low vision children. With the aid of computers and closed circuit televisions, the capacity of the low vision in reading can be brought to reality by applying the simple adaptive principle of magnification which is but a slight environmental modification. To be more precise, large print made access through computer programmes and related software can serve the needful.

The selection of suitable Tamil print media should be finalized in the primary level for children with low vision by their qualified special educational teachers.

The quest of knowing how far this targeted plan will turn out practical and viable has sown the seed for this study. This study has been chosen in order to know if the available print media can be availed to enhance the reading skill of
low vision population, thereby establishing their status among the normal population. It therefore studies the performance of low vision children in reading regular print, large print, closed circuit television and computer, the result of which will throw light on the above discussion.

The research on reading for low vision and books on low vision has found that the issues related to selection of print media and reading efficiency is either completely ignored or not at all discussed. As a result of lack of knowledge, the children with low vision are neither treated as sighted nor blind.

Another major factor that contributes to this problem is that the special educator and professionals do not guide them in the selection of suitable print media, because they feel that it is not important. Thus against the backdrop, the researcher chose to study the reading efficiency of low vision children in Tamil Print media using regular print, large print, CCTV and computer.

The researcher faced certain set backs during the course of the study. There were no standardized tools and suitable Tamil Font to assess the reading efficiency of low vision children in various print media. So, the researcher prepared the Reading Inventory Scale and incorporated all statistical measures to make the tool reliable and valid for use in the study. After formulation of research tools and pre-testing them, the researcher set out with the task of collecting the data. The research exercise was carried out in 2 phases. The first phase comprised collection of relevant data from 350 low vision students and the identification of 260 students using vision as the primary channel. Out of these
260 students 150 students who were independent readers were selected after the application of the Reading Preference Test. The 2nd phase of the study included exploring the reading efficiency of these 150 students in various Tamil Print media.

The data after collection was processed coded, tabulated, analysed and interpreted using statistical measures namely percentages, ‘F’ test, ‘Z’ test and ‘r’ test. The responses to some of the questions were represented figuratively also.

6.2 FINDINGS OF THE STUDY ARE SUMMARIZED AS FOLLOWS :

6.2.1 SOCIO-DEMOGRAPHIC BACKGROUND

- An equal percentage of 33.3% of the respondents belong to the age group of 11, 12, and 13 years respectively.
- More than half of the respondents were girls (52%).
- The respondents were studying in 6th, 7th and 8th standard respectively (33.3%).
- Majority of the respondents hailed from rural background (52.7%).

6.2.2 SOCIO-DEMOGRAPHIC BACKGROUND

- Majority of them were from the lower socio-economic status (56%).
- 44% of the respondents were from the upper socio-economic status.

6.2.3 SOCIO-DEMOGRAPHIC BACKGROUND

- Nearly half (45.4%) of the respondents scored below average range of marks between 36% to 50%.
• A sizeable majority of the respondents were from I.Ed. programmes.
• 29.9% of the respondents scored an average range of marks between 51% to 70%.
• 13.4% of the respondents scored an above average range of marks between 71% and above.

6.2.4 EYE CONDITIONS
• Nearly half of the respondents (48%) affected by neuro problems.
• 19.3% of the respondents were affected by disorders of lens.
• 14% of the respondents had retinal conditions followed by refractive errors (7.3%), corneal conditions (6.0%) and glaucoma (5.3%).

6.2.5 ONSET OF CONDITIONS
• More than half of the respondents (58.7%) had congenital problems.
• 41.3% of the respondents had adventitious conditions.

6.2.6 PERCENTAGE OF IMPAIRMENT
• Almost half of the respondents had 40% of visual impairment.
• 22.7% had 75 percentage of impairment.
• 20% had 100 percentage of visual impairment.
• 11% had 20 percentage of visual impairment.

6.2.7 VISUAL ACUITY
• Majority of the respondents (40.7%) had distance visual acuity of 6/36.
• 32% of the respondents had distance visual acuity of 6/24.
• 17.3% of the respondents had DVA of 6/18.
- 10% of the respondents had DVA of 6/60.
- 53.3% of the respondents were with the near visual acuity N20.
- 46% of the respondents were with the near visual acuity of N48.

6.2.8 READING EFFICIENCY OF THE RESPONDENTS IN REGULAR PRINT

- Majority (58%) of the respondents were able to read 61-70 wpm, only a 10.7% were able to read above 100 wpm. According to Reading Preference Test, those who were able to read 60 wpm can be independent print readers.
- With regard to reading distance vast majority of the respondents were comfortable at a reading distance of 6-10 cm. When compared with other print media, in the regular print 18% of the respondents are able to read only at 5 cm.
- Majority (44.7%) of the respondents were very accurate in reading without making any errors and maximum errors made by the low vision children were substitutions.
- In reading comprehension, a small proportion (29%) of the respondents were able to comprehend 4 and 5 questions raised on reading a passage. Majority (53.3%) had eye fatigue only after 10 minutes of reading a passage.

6.2.9 READING EFFICIENCY OF THE RESPONDENTS IN LARGE PRINT

- Majority (28%) of the respondents were able to read 81-90 wpm, followed by 21.3% of the respondents who were able to read above 100 wpm.
• With regard to reading distance vast majority (68%) of the respondents were comfortable at a reading distance above 15 cm. It is also clear from the above table that 63% of the respondents were accurate in reading without making any errors and maximum errors made by the low vision children were substitutions.

• In reading comprehension, 22.7% and 68% of the respondents were able to comprehend 4 and 5 questions raised on reading a passage. Majority (92%) had eye fatigue only after 10 minutes of reading a passage.

6.2.10 READING EFFICIENCY OF THE RESPONDENTS IN CCTV

• Majority (54.7%) of the respondents were able to read 61-70 wpm. Only a 6.7% were able to read above 100 wpm.

• With regard to reading distance majority (56%) of the respondents were comfortable at a reading distance above 15cm. It is also clear from the above table that majority (59.3%) of the respondents were very accurate in reading without making any errors and maximum errors made by the low vision children were substitutions followed by regressions.

• In reading comprehension, a small proportion (21.3%) of the respondents were able to comprehend 4 and 5 questions raised on reading a passage.

• Majority (81.3%) had eye fatigue only after 10 minutes of reading a passage.
6.2.11 READING EFFICIENCY OF THE RESPONDENTS IN COMPUTER

- 28% of the respondents were able to read 61-70 wpm and 18.7% were able to read above 100 wpm. According to Reading Preference Test, those who were able to read 60 wpm can be independent print readers.

- With regard to reading distance majority (50.7%) of the respondents were comfortable at a reading distance above 15 cm.

- Majority (40.7%) of the respondents was very accurate in reading without making any errors and maximum errors made by the low vision children were substitutions.

- In reading comprehension, majority (90%) of the respondents were able to comprehend 4 and 5 questions raised on reading a passage.

- Majority (83.3%) had eye fatigue only after 10 minutes of reading a passage.

- Avoidance (39%) and tiredness (38%) were most frequently reported symptoms of low vision children.

6.3 FINDINGS RELATED TO HYPOTHESES

1. Boys and Girls do not differ significantly in their reading efficiency except in reading comprehension and eye fatigue and stamina of regular print shows a significant difference.

2. Urban and rural students do differ significantly in their reading efficiency.

3. Students from special school and integrated education do differ significantly in their reading efficiency.
4. Children with congenital handicap and adventitious handicap do differ significantly in their reading efficiency.

5. Children affected by central vision and peripheral vision do differ significantly in their reading efficiency.

6. Students with classes 6th, 7th and 8th do differ significantly in their reading dimensions of reading speed and reading comprehension but in the dimension of eye fatigue and stamina there is no significant difference with regard to regular print.

7. Students of 6th, 7th and 8th standards do not differ significantly in their reading efficiency with regard to large print.

8. Students of 6th, 7th and 8th standards do differ significantly in the dimensions of reading speed and reading comprehension. In eye fatigue and stamina there is no significant difference with regard to CCTV.

9. Students of 6th, 7th and 8th standards do differ significantly in the dimensions of reading speed and reading comprehension. In eye fatigue and stamina there is no significant difference with regard to Computer.

10. Students affected by eye problems do not differ significantly in their reading efficiency with regard to Regular Print.

11. Students affected by eye problems do not differ significantly in their reading efficiency with regard to Large Print.

12. Students affected by eye problems do not differ significantly in the dimensions of reading speed and reading comprehension. In eye fatigue and stamina there is significant difference with regard to CCTV.
13. Students affected by eye problems do not differ significantly in the dimensions of reading speed, eye fatigue and stamina. Reading comprehension do differ significantly with regard to computer.

14. There is no significant relationship between the age of the respondents and reading efficiency in various print media
   a) Regular Print, b) Large Print, c) CCTV and d) Computer.

15. There is significant relationship between the academic status of the respondents and reading efficiency in various print media
   a) Regular Print, b) Large Print, c) CCTV and d) Computer.

16. There is negative significant relationship between the degree of impairment of the respondents and reading efficiency in various print media
   a) Regular Print, b) Large Print, c) CCTV and d) Computer.

17. There is significant relationship between Near Vision Value of the respondents and reading efficiency in various print media
   a) Regular Print, b) Large Print, c) CCTV and d) Computer.

18. There is significant relationship between suitable Print Size and reading efficiency of the respondents in various print media
   a) Regular Print, b) Large Print, c) CCTV and d) Computer.

6.4 IMPLICATIONS OF THE STUDY

The implications of the study have been based on the findings of the present research study conducted to describe the reading efficiency of low vision children in various Tamil Print Media. Suitable Tamil Font for reading of low
vision children aimed at enhancing their reading efficiency in various print media have been highlighted.

An individually administered and interpreted learning media assessment is essential for finding individual differences for individual students. Objectively determining each student’s most efficient print reading option is important to assuring overall reading efficiency.

6.5 COPING WITH READING IN CHILDREN WITH LOW VISION

Before the start of formal schooling, young children with normal vision "emerge" naturally into literacy without much or any direct attention from adults, through observing and imitating the functions and uses of literacy in daily life. Young children with low vision, however, may miss some or most of the opportunities for natural observation and imitation. Therefore, the teacher of students with visual impairments must take direct steps to ensure that a solid foundation for early literacy is established. In this regard, four broad areas require specific attention by parents and teachers of young children with low vision: expanding the range and variety of early life experiences providing direct exposure to literacy events, visual skills in reading and magnification.

a) Expanding Early Life Experiences

A rich variety of early life experiences provides the foundation for literacy by helping children to discover the meaning of literacy events, both reading and writing. Lowenfeld (1974) encouraged teachers and parents to emphasize common everyday experiences.
A role of the teacher of students with visual impairments is to ensure that children receive a variety of high-quality experiences before and during literacy instruction and not assume either that young children with low vision automatically have such experiences or that parents have the sole responsibility for providing them. During the early years, special teachers should work with parents and other members of the educational team—especially orientation and mobility (O&M) instructors, who often provide instruction in the community—to give young children the appropriate experiential base for learning skills that will be meaningful in their lives.

An ideal approach for helping young children have rich learning experiences is the consistent application of Lowenfeld’s (1974) principles: using concrete experiences, learning by doing, and providing unified experiences. Although Lowenfeld advocated the use of these special methods for students who are functionally blind, they are equally applicable to students with low vision, who will, however, also use vision to gain information from the world around them. The overriding goal is to engage young children actively in experiences in which they use all their senses to gain information.

b) Providing Direct Exposure to Literacy Events

Some basic early experiences for young children

i) Home Experiences

- Helping prepare a snack or bake cookies
- Picking up the morning newspaper
• Helping stack dishes in the sink
• Helping rake leaves or plant flowers
• Picking up clothes or toys
• Getting the mail from the letter box
• Playing with siblings or friends in the backyard
• Calling grandmother and grandfather on the telephone

ii) Community Experiences

• Playing at the city park with siblings and friends
• Splashing in the wading pool at a public swimming pool / river
• Exploring the grocery store and stores at a mall
• Visiting a farm with animals and machinery
• Eating at a fast-food and at a formal restaurant
• Visiting a petting zoo
• Visiting public places like the post office, fire station, and library

Young children typically attempt to read and write because they see their parents and others doing so and because they associate abstract symbols with meaningful events in their lives. For example, after seeing their parents read a newspaper, young children may pick up a book and imitate this event, perhaps inserting an occasional, "Oh, isn't that interesting!" Or after watching their parents write letters or pay bills, they may scribble something and then "read" back the message aloud. These are important early literacy behaviors that provide an important foundation for later, more conventional literacy skills.
A child with low vision, on the other hand, may miss these important connections. For example, environmental signs, such as the signals, may be outside a child’s distance vision range or may speed by while the child is riding in a car to the extent that the information is meaningless. Even at closer distances, a child with low vision may not realize that his or her father is writing a shopping list, although it is clear that something is occurring. For a young child with low vision to gain the same benefits from naturally occurring literacy events, he or she must be actively exposed to and engaged in such events.

To provide direct experiences in making a shopping list, a parent can place the child in his or her lap and talk through the experience, saying perhaps, “Let's make a list of things we need at the store. We need rice [writes "rice"], sugar [writes "sugar"], and milk [writes "milk"]. What else do we need?” The parent can then encourage the child to name other items and can write whatever the child names on the list. Then to complete the activity (and to make it meaningful), the list is used in the store to help gather the needed items, checking each one off as it is placed in the shopping cart.

Reading aloud to young children is a powerful way to model the use of literacy and is one of the most important factors in their ultimate success in developing literacy skills (Trelease, 1989). For toddlers and preschoolers with low vision, reading aloud by parents and teachers allows young children to engage in a near-point task that is more likely to be within their field of view than many other literacy events. Early books used for reading aloud should have bold,
clear, and uncluttered pictures; as the students grows older, books with increasingly more complex pictures can be used. As the book or story is read aloud, time should be taken to examine and enjoy the pictures on each page. Also, real objects associated with the story should be used to supplement pictures, so a child with low vision has the opportunity to pair tactual information with visual information.

Before a young child starts formal schooling, teacher of students with visual impairments, works with the parents and extended family members, modeling the use of specific strategies, such as those just mentioned, to help them carry out the activities at home, continued guidance and assessment are needed in formal literacy instruction (schools).

c) Visual Skills in Reading

In efficient visual reading, the reader fixates on a central point within a group of letters or short words, decodes the information, and then jumps the eyes forward on the line to the next group of letters or words. This process is repeated in successive fixations to the end of the line, after which the eyes quickly find the beginning of the next line. These quick eye fixations, called saccadic movements, occur repeatedly during continuous reading. Efficient readers concentrate on gaining meaning from the text, not on their eye movements.

Reading with low vision also involves saccadic movements, although the efficiency of the movements and the width of the perceptual span differ, depending on the characteristics of the individual and the functional implications
of his or her visual impairment. In supporting the development of reading skills, the teacher of students with visual impairments emphasizes the visual portion of the reading process, but in the context of meaningful activities and in a visually comfortable and motivating environment. The objective is to make eye movements efficient and automatic. If the reader must attend to eye movements, then attention is diverted from higher level reading skills, such as comprehension.

If a student's eye movements contribute to inefficient reading, the teacher of students with visual impairments should allow the student ample time to practice reading while concentrating on the use of vision, rather than on new reading skills. The use of non-optical low vision devices, such as a typoscope (a window cut in a piece of cardboard that is the width of one line), a marker under or above the line (such as a ruler), or one's finger, will decrease the amount of extraneous stimuli from the page and guide the student's eyes to the next appropriate spot on the line. To change lines efficiently, the student can mark the next line to read with a finger. While helping a student to develop skills in eye movements with such strategies, it is preferable to give the student easy reading materials, so less attention is needed for decoding and comprehending. As a student's reading efficiency increases, fewer external strategies and cues will be needed. The method of repeated readings is an ideal strategy for increasing fluency in reading.

To increase comfort in reading and facilitate the development of more efficient eye movements, other modifications of the visual environment are made,
when necessary. Appropriate lighting is an essential factor in increasing the contrast and decreasing the glare from reading materials. High-gloss desktops and other work surfaces may cause glare that can be alleviated by covering the surfaces with a dark blotter or other material. Other modifications may include the judicious use of acetate filters and book stands.

Whereas the typical saccadic pattern is used in reading narrative text, other eye-movement patterns are used for various types of reading tasks, such as reading a map, finding information in a table or chart, scanning headlines in a newspaper, and locating a word in a dictionary. Finding a word in a dictionary, for example, involves shifting visual fixation from one set of guide words to the next until the right page is found; scanning down the bold-face entries to the correct word; using a saccadic pattern to read the entry, although portions of the entry are usually skimmed to locate the needed information. These visual tasks may be more difficult for a person with low vision and may require more systematic and deliberate instruction.

d) Magnification

Persons with low vision generally need magnification of the text to gain the resolution needed to read efficiently. The reading with low vision depends on the interaction between the size of the letters, the distance from the page, and the intactness of the central visual field. Students with low vision generally need a larger than-normal print size (or magnification effect) and a closer working
distance (the page-to-eye distance) to gain the resolution needed to read efficiently.

To find a student's comfortable working distance, the teacher of students with visual impairments can ask the student to read at various distances from the page or a stand or handheld magnifying device and then document the differences with objective data, such as reading rates and informal information.

Efficient reading with low vision can be viewed as a balancing act. The reader requires magnification to gain the necessary resolution needed to decode words, but has to maximize the working distance to increase the width of the perceptual span. As the magnification increases and the working distance decreases, the perceptual span decreases. The clinical low vision specialist and the teacher of students with visual impairments must work closely with each other and with the student to find the proper amount of magnification and the most comfortable working distance to yield the most efficient reading.

The effectiveness of magnification depends to a great extent on the visual field. Persons with full visual fields who simply need the enlargement of text to read more efficiently can gain magnification. Magnification is not always helpful to people with low vision. However, the clinical low vision specialist must consider the amount of magnification needed by the individual to resolve an image when reading. A person may need magnification to gain resolution, and the resulting limit on the perceptual span may be unavoidable.
To understand the effect of magnification on a person’s reading rate, one must first realize that reading efficiency is influenced by a number of interrelated factors, such as familiarity with information in the text; experiential background; existing decoding, vocabulary skills, and comprehension skills; interest and motivation; stamina and fatigue; intactness of the central field; clarity of the ocular media; and level of magnification.

Little is known about the reading rates of persons with low vision because only a few empirical studies have been conducted. In one study, Legge, Rubin, Pelli, Schleske, Luebker, and Ross (1988) used a statistical procedure to determine the peak reading rates of persons with low vision under four conditions. They found that an intact central field is the major factor in efficient reading rates and that clear ocular media are also influential. In a series of case studies on students with low vision, Koenig and Ross (1991) and Koenig et al. (1992) collected objective data on reading rates in various print media. Three observations from this research are noteworthy.

First, the reading rates of students with low vision varied widely and did not seem to be a function of age or grade level. Second, students with central field losses demonstrated reading rates near those predicted by Legge et al. Third, the reading rates of individual students were similar across media, regardless of whether the students were reading in large print or in regular print with or without an optical device.

Academic literacy skills are a major focus of instruction in elementary school. The types of literacy tasks taught to students – reading and responding to
stories, reading and interpreting poetry, writing narrative pieces, writing term papers are fairly unique to school settings. That is, these tasks are not usually the primary literacy tasks performed in everyday life. It is universally agreed that the acquisition of basic academic literacy skills is a fundamental goal of schooling. To attain a solid foundation in these skills, students with low vision need a range of instructional and support services, and the teacher of students with visual impairments is ultimately responsible for fostering the development of these skills.

  a) Integrating Non-optical and Optical Devices
  b) Using Targeted Reading Instruction Strategies
     - Language Experience Approach
     - Cloze Procedure
  c) Selecting Instructional Strategies
     - Repeated readings, paired reading, choral reading for the strategies for increasing reading fluency in low vision children.
  d) Increasing Speed and Stamina

6.6 ROLE OF TEACHERS WORKING WITH VISUAL IMPAIRMENT

Teachers at special schools, as well as those in resource-room programs in public schools, have direct responsibility for providing reading and writing instruction, for teaching disability-specific skills, and for ensuring that the needs of their students with low vision are met. In most public school settings, however, they provide support for regular classroom teachers and supplementary instruction in unique skills, when necessary.
• ensuring that students develop a solid experiential and conceptual basis for literacy
• structuring early literacy experiences in the home so as not to rely solely on incidental experiences
• teaching the efficient use of visual skills in authentic contexts, such as efficient scanning skills to locate words in a dictionary or to interpret a map
• teaching students to interpret pictures of increasing complexity
• teaching students to use optical and non optical low vision devices
• providing practice to build automatic skills in the use of low vision devices
• providing targeted instruction to increase fluency and stamina in reading
• teaching functional applications of reading and writing skills, if they have not already been taught in the classroom
• arranging the physical environment to minimize the visual learning and increase the comfort of young students
• helping the student assume responsibility for gaining access to print
• providing adapted materials and equipment
• teaching keyboarding and computer word processing skills if these skills are not part of the early regular curriculum
• teaching a variety of literacy tools for gaining access to print independently, such as using a monocular to take notes from a chalkboard.
6.7 GUIDANCE FOR TEACHERS WORKING WITH VISUAL IMPAIRMENT

When no educational relevant differences exist between print options, select option that is least restrictive. When the most efficient option is not the least restrictive option, then build skills in the least restrictive option. Conduct Learning Medium Assessments on an ongoing basis, and use this information for educational planning. A low vision assessment, provided by a low vision practitioner, is essential to assist the educational team in making literacy medium decisions.

Frequent reading is a decisive factor in good reading ability, since the more one reads, the better one’s vocabulary and hence the greater one’s satisfaction when reading. Thus, poor readers who rarely read may be caught in a vicious circle: their failure to read results in the absence of vocabulary development and little satisfaction while reading, which results in little, if any, improvement in reading ability.

To develop individual reading-training models, it is necessary for teachers to be familiar with their pupils and to maintain consistent contact with them and with their families. Such contact is especially important for younger pupils because whatever increase in the amount of reading they do will have to be outside the school environment. In addition, for uncertain visually impaired readers, many of whom could be helped to become good readers, the intermediate level of comprehensive schools seems to be a critical period for reading development. At this time, many of these pupil’s sighted classmates
make extensive strides in their reading development, and noticeable differences between sighted and visually impaired pupils are seen. To avoid a situation in which visually impaired pupils avoid confronting more advanced reading situations when they are with their sighted classmates and to stimulate visually impaired pupils to read better, intensive efforts are necessary.

In this regard, the importance of a holistic perspective, which takes into consideration all the settings in which visually impaired pupils function, is clear. However, success can be attained only if professionals with various areas of expertise—medical, technical, and pedagogical—cooperate and if pupils become more actively involved in trying to influence their own reading development. With close cooperation among pupils, low vision children, consultant teachers, school personnel, and pupils’ families, visual impairment need not lead to reading disabilities.

6.8 CONCLUSION

The children suffering with low vision need immediate attention for rehabilitation. The rapid increase in the percentage of low vision children is a grave social indicator that needs immediate and urgent attention. Though the researcher has analyzed the extent to which this defect affects children, a state level census made of the children with low vision and vision related problems like reading is imperative. This becomes imperative because of the social ramifications the country will be forced to face with the increase in the numbers and as these children become adults their vision may undergo changes and
deteriorate. It is in this context that the study suggests immediate remedial methods to make the children with low vision more comfortable in literacy instruction and enjoy their stay at school and become productive useful citizens in future.

As there is no recent Governmental data on the number of children with low vision, there is no preventive or remedial measures institutionalized by the authorities. The government has moral responsibilities to monitor the health and especially the ophthalmic conditions of the various age groups to assess the dimension and gravity of such problems, which can become a major setback for a growing economy like India.

The government machinery should focus its attention more on the health of children especially their vision as rehabilitation of these children with low vision are likely to become totally blind as adults.

The rate of increase in the numbers is alarming and will pose a grave rehabilitation crisis in the future and become an economic setback as a relatively lower percentage of healthy and economically productive set of citizens will have to shoulder the burden of providing relief and rehabilitation for those affected.

Latest integrated education and inclusive educational systems are successfully run by the Government; but there is a need for stress on selection of suitable Tamil print media for low vision which should be made mandatory. The selection of appropriate literacy media should be a primary educational issue for
professionals in the field of visual impairment. Keeping this in mind, as a pioneer step in Tamil font development for Low Vision, the researcher had identified a suitable Tamil font for enhancing reading in low vision children.

6.9 SUGGESTIVE MEASURES TO BE TAKEN TO ENSURE THE OPHTHALMIC HEALTH OF CHILDREN

1. The vision of children should be recorded by the qualified ophthalmic experts at the time of admission in school (Special Schools, Integrated and Inclusive Education).

2. The vision of children should be constantly monitored at least once a year to ensure the rate of the growth and decline of children with low vision.

3. The corrective measures should be taken as per the direction of the ophthalmic experts.

4. Low vision due to malnutrition should be rectified by the government by identifying those children and giving them supportive therapy monitored by the school.

5. A census of low vision children in all schools should be made mandatory, for governmental recognition.

6. Based on the census the government can evolve a remedial policy and institute corrective measures to alleviate this grave situation.

7. A functional vision assessment should be done by the low vision experts for children identified as low visioned.

8. Selection of literacy media should be done by special educators.
6.10 SUGGESTIONS FOR FURTHER RESEARCH

To overcome the limitations of the present study and to extend the research findings of the study, a few suggestions are given below for further research.

1. The present study was confined to a sample of children with low vision studying in middle schools. The findings may vary from high school and higher secondary students with low vision. So, it is suggested that the study of the above may be conducted for students with low vision studying in high school and higher secondary students.

2. The present study was confined to a sample of children with low vision studying in special school and integrated education programme. The findings may vary among children studying in inclusive education. So, it is suggested that the study of the above may be conducted for students with low vision studying in inclusive education.

3. In this study reading efficiency of children with low vision was evaluated with regard to various Tamil print media. Evaluation of Reading Efficiency may be done with regard to other languages also.