CHAPTER V

FINDINGS, CONCLUSIONS AND SUGGESTIONS

5.0.0 Introduction

The researcher arrives at this stage after rigorous exercise of analyzing the data and put insight to make objectives more fruitful and significant for layman as well as the technical persons associated with work of teaching as well as learning at various levels. The writing of research finding is usually the concluding task of research endeavour. Everything is combined together during writing of the findings. It is a matter of communication, what was done, what occurred and what do the results mean, in a concise under stable, accurate and logical manner. The final process of summarizing the findings, arrival at conclusion, making recommendations and formulating proper generalizations for population which are applicable, is an important component of any research.

On the basis of analysis and interpretation of data discussed in the previous chapter, certain findings have been obtained and conclusions have been drawn. This leads us to the construction of a global personality configuration of the learning disabled students and based upon this understanding, an attempt is made to derive educational implications for the various social, institutional, voluntary and governmental organizations and curriculum planners as well as for the role of those in personal contact with subject such as teachers, parents, counsellors, guidance workers etc. The present chapter has been organized under the following headings:

5.1.0 Findings of the study
5.2.0 Conclusions
5.3.0 Educational implications of the study
5.4.0 Suggestions for further researches
5.5.0 Overall conclusions of the study
5.1.0 Findings of the Study

The findings of the present study which were based upon factual statistical analysis and interpretation of the data have been generalized to the extent of representations of the sample and effectiveness of the instructional material under study. The findings are presented hereunder in accordance with the objectives of the study.

5.1.1 The first objective of the study was to identify the learning disability among the Home Science students.

The researcher identified the learning disabled students on the basis of exclusion and inclusion criteria. The students who have scored below 50% on diagnostic test and scored above 50% on checklist for learning disabled children for taking teachers’ opinion and who have scored above 25th percentile were categorized as learning disabled students for the present study.

5.1.2 To study the achievement of learning disabled in Home Science.

After identifying learning disabled students, self constructed achievement test in Home Science was used to assess their scores in Home Science. These students got low score in the achievement test of Home Science. The test of Home Science consists of following areas as Home Management, Clothing & Textile, Food & Nutrition, Human Physiology and Health & Hygiene. The learning disabled students had deficiency to receive information, remembering them and also difficulty in organizing the information. Students having learning disabilities were found unable to describe various elements of arts, principle of design and their importance. They were also found unable to describe units of measurements that are useful in daily activities of home. These students with learning disabilities were found unable to describe fibers and its names and have difficulty in sketching, drafting, and in cutting of cloths, making the embroidery and stitching by observing the practical class of Home Science and asking the subject teacher, it was found that the psychomotor skills of these students were not well tuned. The students having learning disabilities were found unable to describe various vitamins, their functions, and sources of vitamins, deficiency disease. They were also found unable to describe sources, functions and importance of balanced diet. These learning disabled
students were unable to sketch the figures and label these, write the number of bones, locations, lacked knowledge about functions of digestive organs etc. Students with learning disabilities were not able to describe the name of the disease, their symptoms and prevention of these diseases that formed part of their course and all these topics had already been taught by the teacher earlier in the class. It revealed that these students had poorer knowledge of Home Science. Similar inferences were also drawn by Frantz (2000) regarding reading achievement.

5.1.3 To develop instructional material in Home Science for learning disabled students of secondary school.

After identifying the learning disabilities, the researcher developed the instructional material on the topics, in which the students were unable to give answers in Home Science. The researcher developed self instructional material on the basis of program learning and IT based material like video and power point presentation on various topics were also developed. These were prepared in the following areas:

- **Home Management** - The researcher prepared the instructional based power point presentation on elements and principles of arts and units of measurements.
- **Clothing & Textile** - The researcher developed the self instructional material and video on drafting of petticoat, power point presentation and video on embroidery and power point presentation on types of stitches and on fibers.
- **Food & Nutrition** - The researcher prepared the power point presentation on balanced diet and nutrients. SIM was also developed on nutrients topic.
- **Human Physiology** - Self instructional material (SIM) and power point presentation were prepared on the topic of human skeletal system and human digestive organs.
- **Health & Hygiene** - The researcher prepared the power point presentation and video on the topic of anemia, rickets and kwashiorkor. Power point presentation was also developed on immunization.

These instructional materials were administered on learning disabled students.
5.1.4 To evaluate the Efficacy of developed material in Home Science for learning disabled students of secondary school.

To see the efficacy of developed material, students were taught using these materials for 15 days. Thereafter, the post test was administered to students. Mean value of post test was found significantly increased. t test value was also found highly significant. On this basis, we can say that the developed material effectively reduces the learning disabilities. Present findings are in conformity with the findings of Mathew (2003). He found the effectiveness of SIM and modern teaching strategy in minimizing LDs of students in the subject of biology in secondary school. Newben (1998) also found that effect of service delivery alternatives on the efficiency of instructional strategy using paraphrasing strategy was implemented. The result indicated that strategy instruction improved the performance of students with learning disabilities. Similar inferences were also drawn by Pandit (2000) regarding mathematics teaching.

5.2.0 Conclusion

The following conclusions were drawn on the basis of the findings:

1. Learning disability describes a heterogeneous group of disorders that impact reading, writing, reasoning, mathematics computation and psychomotor domain.
2. Learning disabled students had low level of academic achievement in comparison to non disabled children.
3. Learning disabled students need additional assistance to increase their academic achievement.
4. Effective instructional and teaching learning material can increase the academic achievement of learning disabled students.

5.3.0 Educational Implications of the Study

The purpose of educational research is not only to contribute new facts to the field of education for the sake of knowledge alone but it should also yield some recommendations for the improvement in educational process and practices. It should be oriented to practical or applied aspect also. The findings of the present investigations were examined in this light also and the following implications were arrived at:
• The academic achievements of the learning disabled students can be increased by using these instructional materials.

• These developed instructional materials will generate interest in reading content.

• The teaching learning material can effectively be used to improve retention capacity of learning disabled students.

• By developing appropriate videos on different topics, the psychomotor skills among learning disabled students can be improved.

• Suitably prepared material can help in independent study by a learner without outside help.

• Self instructional material (SIM) helps learning disabled student to move at their own pace and speed.

• Such type of material helps in developing cognitive skills, affective and psychomotor skills of learning disabled students.

• The non learning disabled students can also use these instructional materials for a better comprehension of the content.

• The developed material will enable the learning disabled students to better adjust with the social environment.

• This simpler and interesting material helps to prevent delinquency and develops self confidence in such children.

• These lessons based on program learning can help teachers in organizing programs for learning disabled and non learning disabled children.

• A teacher can also use these developed materials for enhancing their teaching learning delivery process.

Learning disabled children are very vulnerable and slip through the cracks. These children face various types of other problems which general children do not face. Children with learning disabilities feel inferior, if these feelings endure, it can develop serious complications, including the fall of self–esteem, behavioural problems and excessive dependence on peer, alienation of family, deep anxiety and a loss of motivation. If this problem is not addressed, it can lead to antisocial behaviour, drug
abuse and other serious forms of maladjustment and all these factors will be fatal to a nation’s development. Therefore, it is essential for the teacher to understand the specific problems of these children and try to create conducive environment.

First of all teachers, herself has to accept these children and develop awareness about the specific problems and strengths of these children. Teachers and parents will have to accept them as ‘Children of different ability’. In a regular classroom, suitable adjustment in view of the disability has to be made in seating arrangements. The seating arrangement should be such that it facilitates these children. They should be given adequate opportunities to participate in regular co-curricular activities or adapted activities to at their level of functioning. Curriculum for these children has to be transacted through simple and interesting learning experience. Innovative methods and multimedia approach should be used for teaching. The researcher observed and experienced some facts during research period about learning disabled students, therefore, some suggestions for teachers, parents and other organizations are concluded below:

5.3.1 Suggestions for Teachers

A child with learning disabilities needs individual tutoring in one or more areas of disability. Whether or not there is a resource teacher available, will determine to a great extent how much of this instruction will be assumed by the regular class teacher. There are special considerations that a teacher needs to keep in mind:

- In particular, the teacher should be careful to have the child work on a leave commensurate with his or her abilities. Because the child has a relatively high IQ, the teacher may assume the child can do more than he or she is actually capable of doing. Especially in the early stages of working with the child, it is important that the teacher find a level at which the child can gain a number of success experiences. Failure experiences are probably “old hat” to the learning disabled child; tolerance for failure is likely to be quite low.

- It is also important that clear instructions are provided to the child. Furthermore, the teacher should be attuned to the possibility that directions may not be
understood. Learning disabled children are notorious for looking as if they understand what is being said when in fact they are confused.

• If the child proves to be highly distractible and hyperactive, the teacher may wish to consider making special physical arrangements in the room. Placing the youngster’s desk in a corner, using the walls to form a ‘cubicle,’’ may be enough. (The teacher must be sure to communicate to the student that this is not a punitive arrangement). Also to reduce over stimulation, the child’s desk should be clear of extraneous materials that are not the task he or she is presently working on.

• The teacher should not be surprised if the child displays signs of emotional disturbance. The teacher should not be willing to tolerate bizarre behavior, but should be aware that disturbed behavior is not unlikely. In this respect, our recommendations for using our developed materials and adding extra activity with the disturbed are very much in order for the teacher of learning disabled students.

• This material provides positive feedback and lots of opportunities for practice therefore teacher can use to reduce achievement gap of learning disabled students.

• Breaking tasks into smaller steps, and giving directions verbally and in writing;

• Giving the student more time to finish schoolwork or take tests;

• Teach organization skills, study skills, and learning strategies. These help all students but are particularly helpful to those with LD.

• Work with the student’s parents to create an educational plan tailored to meet the student’s needs.

• Establish a positive working relationship with the student’s parents through regular communication; exchange information about the student’s progress at school.

All learning disabled children experience serious difficulty in different academic areas. They also exhibit certain behavioural problems (Silver, 1987). These behavioural problems aggravate the academic problems. They also affect the social-emotional
adjustment of children with learning disabilities. So remediation of these problems is essential for proper adjustment of children.

As the number of individuals being diagnosed with learning disabilities has increased, so have the understanding and utilization of academic and technological strategies for accommodation. While planning a course to make it more accessible to all students, including those with learning disabilities, considering these strategies is part of a process called universal design. Universal design offers the following suggestions:

- Provide printed materials early to allow students sufficient time to read and comprehend the material.
- Provide important information in both oral and written formats.
- When teaching a lesson, state objectives, review previous lessons and summarize periodically.
- Use more than one way to demonstrate or explain information.
- Read aloud what you write on the board.
- Keep instructions brief and uncomplicated; repeat them word for word.
- Allow time for clarification of directions and essential information.
- Provide study guides or review sheets.
- Have multiple methods for course assessment such as allowing taking an exam or writing a paper; working alone in group; or delivering an oral, written presentation.

○ Classroom Accommodations

- Allow the student additional time to complete in class assignments, particularly writing assignments.
- Provide feedback and assist the student in planning the workflow of assignments. This is especially important with large writings assignments. It may be helpful to break the larger assignments into smaller components.
- Provide assistance with proofreading written work.
5.3.2 Suggestions for Parents

The parents play a vital role in the emotional and intellectual development of children. They have more responsibility so they need to:

- Praise the child when he or she does well. Children with LD are often very good at a variety of things. Find out what the child really enjoys doing, such as dancing, playing soccer, or working with computers. Give the child plenty of opportunities to pursue his or her strengths and talents.

- Find out the ways how the child learns best. Does he or she learn by hands-on practice, looking, or listening? Help the child learn through his or her areas of strength.

- Let the child help with household chores. These can build self-confidence and concrete skills. Keep instructions simple, break down tasks into smaller steps, and reward the child’s efforts with praise.

- Make homework a priority and read more about how to help the child be a success at homework.

- Pay attention to the child’s mental health. Be open to counseling, which can help the child deal with frustration, feel better about him or himself, and learn more about social skills.

5.3.3 Suggestions for Educational Authorities

- Educational authorities should organize the school management in a manner that takes into account the personality structure of learning disabled and his problems and capabilities.

- The organization, such as time table planning, curriculum design, co-curricular and extracurricular activities etc, should be done by educational authorities rather than leaving these components to the whims and fancies of a teacher.

- Learning disabled children should be given some social responsibilities for better social adjustment.

- A consultant teacher should provide support to regular classroom teachers and other school staff who work directly with students with learning disabilities.
• The consultant teacher should help the regular classroom teacher select assessment devices, curriculum materials and instructional activities.

• Educational authorities should provide resources room which is specially staffed and equipped where students with learning disabilities come for one or several periods during the school day to receive individualized instruction.

5.3.4 Suggestions for Curriculum Planner

• Learning disabled children are found to be educationally backward compared to normal students due to their seemingly lower intellectual efficiency, week emotional construction, lack of conceptualization and ability to handle objectively their problems.

• New curricula suited to their personalities should be planned incorporating large number of illustrations, picture, maps, practical knowledge, manual and creative craft and vocational work.

• A suitable curriculum would make them more understanding, reasonable and well adjusted to their personality characteristics. Special curricula can be useful in special schools, but in integrated systems they should be based on the mental efficiency of the individual child.

• Teaching material may contain standard subject matter, but with more pictorial illustrations, drawing and less vocabulary, as learning disabled children are less familiar and ill at ease with in general, due to a lack in pronouncing word, sense perception, but are equipped to comprehend pictorials as normal.

5.3.5 Suggestions for Guidance Worker and Counselors

Guidance workers and counsellors must consider the case studies (genetic and adventitious) of different areas of the learning disabled children in schools of the different areas so that they can arrange suitable counselling programs related to academic matters or to solve their problems related to speech & reading and arithmetic interests be arranged that make them more intellectual, social, imaginative, practical, creative, emotionally balanced and value oriented.
These guidance services should educate the parents towards the desired attitude in techniques and ways of communication with learning disabled children and most importantly develop a systematic attitude toward the learning disabled children.

5.3.6 Suggestions for Government and Voluntary Organization

Voluntary organizations bearing in mind the global personality structure of the learning disabled can organize extracurricular activities, financial assistance, medical aid, speech therapy and lectures with the voluntary assistance of psychiatrists, doctors, educationists, psychologists and teachers. This would promote their welfare, encourage their positive personality traits and help them become self sufficient, adjustable and independent individuals.

5.4.0 Suggestions for Further Research

On the basis of the findings of the present study and from the discussion of results, the investigator feels that following studies can be undertaken for further research with wider perspective.

- A similar study can be undertaken on a large sample including urban and rural population for more in depth analysis.
- A comparative study can be conducted on the learning disabled and normal children.
- The comparative study can be conducted on male and female students in reference to other subjects also.
- A survey on educational facilities provided to learning disabled children can be carried out for the use and guidance government and voluntary organizations.
- A study of rehabilitation program of learning disabled children can be carried out to help bridge the gaps if any in the existing programs.
- Personality and psychological factors of learning disabled and normal children can be studied to draw more fruitful generalization that help guidance worker and counselors.
The methods used in teaching these children in our country can be analyzed and compared with the teaching practices prevailing in other countries, suggestions can be solicited and suitable modification made in the existing method prevalent in our country, keeping in socio-religious and cultural diversity of these countries in perspective.

A study of rehabilitation program, welfare program can be undertaken in various institutions, organizations, voluntary and non voluntary agencies.

Studies pertaining to technological advances and their impact on class room teaching learning procedure can be undertaken for selection of audio-visual aid.

**5.5.0 Over all Conclusion of the Study**

The present study concludes that the learning disabled students are an integral part of a normal classroom. They had normal IQ as other non learning disabled have. In order to identify the students with learning disability in the present study, at primary stage self constructed tool diagnostic test was administered on students of secondary school and self made checklist for learning disabled children was given to teachers for identifying the students with learning disabilities in the classrooms. In the secondary stage Raven Progressive Matrices test A, B, C, D and E was administered on selected students for knowing the IQ level of these students.

After identifying learning disabled students, self constructed achievement test in Home Science was used to assess their scores in Home Science and evaluation of the answer books of half yearly examinations for identifying the difficulty areas in Home Science. The students got low marks in pre test of Home Science. After administering achievement test to the students, it was found that they had difficulty in answers related to certain topics like identifying the diagram and labelling of given figure; retention capacity was found to be low in those topics which had been taught by the teacher earlier in the class. They were, also, unable to sketch the figure, and lacked the skill of cutting and drafting. By observing the practical class of Home Science and asking the subject teacher, it was found that the psychomotor skill of these students was not well tuned. These students were facing difficulty in the embroidery task also.
The students having Home Science subject learn theory with practical work. If the students having Home Science subject are learning disabled they have more difficulty in performing various activities in comparison to other students and may face adverse results in the class despite possessing good intellectual ability. Because of gap in their learning capacity and ability, they need specific teaching strategies and instructional material to overcome the difficulty in learning faced by them.

Numerous instructional plans that attempt to introduce flexible groupings and individualized instructions have been proposed and instituted. Individualized instructions use several materials like printed materials, films, programmed learning modules, teaching machine and computer based programme etc.

On the basis identification of problem areas faced by the students the researcher developed the instructional material on the basis of program learning principle. Instructional material was categorized into two categories SIM and IT based material. SIM, video and power point presentation were developed on those topics in which the students were unable to achieve good scores in Home Science.

After administering the instructional material, the post test was given to students to know the efficacy of developed instructional material. The students got higher marks in given test. The scores of these learning disabled students in given post test improved in comparison to the pre test. The further statistical analysis was applied to know the significant value of the data. The academic performance of these learning disabled students improved significantly improved. The analysis and interpretation of data shows the importance of instructional material to improve the academic achievement of learning disabled students. It was concluded that this developed material can effectively improve the academic performance of these students.

A modular approach is involved in individualized instructional material. These materials can be developed into small learning units called module. It allows the individual to learn on his own accord. The investigator considered that modular approach in the form of self instructional material (SIM) and IT based material is a comprehensive self-study device for the students with learning disabilities. It is with the same intention of helping the learning disabled students in secondary schools to work independently, to
acquire scientific knowledge and problem solving ability that the investigator has embarked on conducting the present study to develop instructional material and see the efficacy of instructional material in reference to improve the academic performance in Home Science of learning disabled students for secondary schools.

There is an urgent need to pay attention to cognitive, social and emotional development of students with learning disabilities in common classrooms in India. Services have to be planned in a rational way, keeping in mind the needs of the local population. Therefore, a team approach is important for educating the students with a learning disability along with the assessment process and continuing through the development of the individual education program close collaboration among special organizations, administrators, curriculum planners, guidance workers and counsellors, voluntary organizations and teacher training institutions could facilitate the overall development of children with and without learning disability.