CHAPTER-V
RESULT, DISCUSSION AND CONCLUSION

The current research was an experimental research to find out the Impact of Computer Assisted Instruction (CAI) in the development of motor, academic and communication skills in children with mental retardation and this experiment was conducted to find out the learning out comes through CAI technique. The Computer Assisted Instruction programme was used in teaching learning process as a major tool of experiment. The data has been analysed in terms of pre-test, training period and post-test of the experimental group and control group to check the improvement in motor skills, academic skills and communication skills. Appropriate statistical techniques were used for analysis and interpret the data.

On the basis of analysis and interpretation of data the findings are as follows:

5.1 RESULT

1.   The motor functioning level of experimental and control groups before training was seen and found that mean of the motor skill scores of the experimental and control group in pre-test phase are 115.74 and 116.32 which means that both the two groups are homogeneous. Therefore, the 'motor functioning level of experimental group is likely to be same as control group before training. It indicates that experimental and control group do not differ significantly in pre-test phase so far as motor functioning of the children with mental retardation is concerned.

2.   The academic level of experimental and control groups before training was checked through BASIC-MR Part A and it was found that that mean of the motor skill scores of the experimental and control group in pre-test phase are 145.68 and 145.84 which means that both the two groups are homogeneous. This shows the significant difference between experimental and control group in academic level before training.

It also indicates that experimental and control group do not differ significantly in pre-test phase so far as motor functioning of the children with mental retardation is concerned.

3.   The communication level of experimental and control groups before training was checked with the use of BASIC-MR Part A. It shows that the mean of the motor skill scores of the experimental and control group in pre-test phase are 98.89 and 98.37 which means that both the two groups are homogeneous. It means that there is no significant difference between experimental and control group in communication level before training. It indicates that experimental and control group do not differ significantly in pre-test phase so far as motor functioning of the children with mental retardation is concerned.

4.   The motor development of experimental and control groups was again checked after training through BASIC-MR Part A. It was found that the mean values of the experimental and control group after the post test-I is 118.83 and 122.84 respectively which shows the significant difference between them. Therefore it is stated that motor functioning level of experimental group is better than control group after training.

5.   The academic level of experimental and control groups was again checked after training with the use of BASIC –MR Part A. It was found that the mean values of the experimental and control group after the post test-I is 181.74 and 147.89 respectively; which shows the significant difference between them. Hence the academic level of experimental group is better than the control group after training.

6.   The communication level of experimental and control groups was again checked after training. It was found that the mean values of the experimental and control group after the post test-I is 118.68 and 99.37 respectively which shows the significant

difference between them. Hence the communication level of experimental group is better than the control group after training.

7.   The motor development of experimental group was checked after one month of training to see the continuation level of motor skill. The mean values of the post-test I and post-test II of the experimental group is 122.84 and 122.81 respectively which shows that both the groups are homogeneous. It means that the improvement in motor skill is not continued and reduced after the discontinuing of training. The result shows that the motor functioning level of experimental group in post-test-II is not better than the experimental group in post-test-I.

8.   The academic level of experimental group after one month of training was checked. The mean values of the post-test I and post-test II of the experimental group is 181.7 and 178.53 respectively which shows the significant difference between them. The reduction in mean value of post-test II stated that the academic level of experimental group in post-test-II is reducing than the experimental group in post-test-I.

9.   The communication level of experimental group after one month of training was checked and found that the mean values of the post-test I and post-test II of the experimental group is 118.68 and 118.47 respectively; which shows that both the groups are homogeneous. The reduction in the mean value of post-test II stated that the communication level of experimental group in post-test-II is reducing than the experimental group in post-test-I. However the calculated value of 't' is .889 which is less than the table value at .05 level of significance which means that there is no significant difference between the post-test I and post-test II of the experimental group. Hence the hypothesis stating that the communication level of experimental group in post-test-II is better than the experimental group in post-test-I is accepted.

10.   The overall result shows that after practicing through computer assisted instruction (CAI) the learners were learning in an effective manner with full interest and enthusiasm. The result of pre-test reflects the equal status of all the three skills i.e. motor skill, academic skill and communication skill. With reference to the post test-I there was no sign of improvement was seen in motor skills of experimental group. But there was an improvement in academic skills and in communication skills. After post-test II there was no sign of improvement in motor functioning level and academic level of experimental group in comparison to post test-I. But there was an improvement in communication skills. So it can be say that intellectual disabled students need regular practice of CAI or other method to continuing their improvement in skills.

5.2 DISCUSSION

In the era of science and technology the progress in the last few decades has brought not only the economy globalization and expansion of technologies but changes in culture, social relations, and education with inclusion in education. Rapid development of computer assisted instruction in the classroom, telecommunications, media, and information communication technology bears huge potential for improving the quality of life. Children with special educational needs do not get these technological assisted instructions. Although the advancement of technology has unveiled meaningful social opportunities for children with special educational needs by providing convenient access to information and communication tools. The concept of the world now becomes a global village is strongly built on the massive use of information and communication technology (ICT) and which has become an important component in the education of children with special needs throughout the world. The current definition of social development and equal opportunity is characterized by the equal and sustainable approach for every citizen. The government is in the process of

developing smart cities in the country. The concept of smart city means every facility must be available by one click on technology that too excess by normal and differently able persons. It helps in changing our society, thought of people, involvement of special children in the main stream where information of every field is present. The use of computer based technology has become the need of the day due to many reasons for children with special needs and specially intellectually disabled children. The technological advancement has brought the use of sophisticated hardware and software like television, radio, films, tape recorder, and transparency in the field of education. The computer assisted instructions can show tremendous advancements in the teaching learning process for intellectually disabled children. Today information communication technology (ICT) supported teaching methods and materials in the classroom enhance the degree of teaching-learning process.

The intellectually disabled children/ Mentally Retarded children cannot study in normal schools. These children cannot learn in ordinary schools because of their specific disabilities. The present study is an attempt to provide computer assisted instructions to intellectually disabled children to develop their motor skills, academic skills and communication skills. The teaching of this step was taken by the researcher to minimize the psychological trauma of intellectually disabled children. It also removes learning barriers.

Children with special needs are exceptional individuals such as the visually impaired, speech disordered, hearing impaired, multiple handicapped, mobility impaired, the gifted and talented, and a the one who require adaptable curriculum. The present study suggests that in these fields computer assisted instructions could show more and more positive and sustainable result.

The National Policy on Education (2009) classified special needs children into two categories: A. The physically challenged, who are impaired (physical, sensory), and whom because of this impairment cannot cope with conventional school/class organization and methods without formal special educational training and facilities. They include:

1. Visually impaired (blind and the partially sighted);

2. Hearing impaired (deaf and the partially hearing);

3. Physically and health impaired;

4. Mentally retarded (educable, trainable, bed ridden);

5. Emotionally imbalanced (hyperactive, hypoactive/the socially maladjusted/ behaviour disorder);

6. Speech impaired;

7. Learning disabled (have psychological/neurological educational phobia or challenges);

8. Multiple handicapped.

9. The gifted and talented: people (children and adults) with very high intelligent quotient and are naturally endowed with special traits and therefore find themselves insufficiently challenged by the regular school, college/ university programmes.

The National Policy on Education (2009) defined special needs education as a formal special educational training given to people (children and adults) with special needs. Educating persons with special needs could take place either in a special school setting or in an inclusive class. Children with special needs are said to be educated in a special or segregated school setting where students with disabilities receive classroom instructions separately from students without disability. On the other hand, inclusive

education presupposes that children with special needs receive educational instruction alongside non-disabled children in the same classroom with necessary modifications to accommodate the peculiar needs of the special children (Florian and Hegarty, 2004). The purpose of this study is to assess the role of computer assisted instructions on Educable mental retardation in Rohtak district of Haryana. The study reflects positive node in many other areas other than the objectives mentioned at the beginning are as follows:

1. Computer Assisted Instructions (CAI) enhance teaching-learning of children with Educable mental retardation.

2. Computer Assisted Instructions (CAI) improves effective instruction of children with Educable mental retardation.

3. Computer Assisted Instructions (CAI) alleviate environmental challenges of children with Educable mental retardation.

4. Computer Assisted Instruction (CAI) enhance the learning of children with Educable mental retardation.

5. Computer Assisted Instructions (CAI) helps in self-sustainability.

The regular class teacher as well as paraprofessionals can easily handle the CAI and make understand the intellectual disabled children better in an interesting manner. It also helps in social adjustment and social integration of the intellectually disabled children. At the end future researches can be conducted by taking use of this research.

5.3 EDUCATIONAL IMPLICATIONS

The present study has an educational implications in the institute specially running for the educational purpose of person with disabilities. The publication of this study will sensitize school teachers, teacher training institutions for special children and normal children, parents of mentally retarded children and parents of the children

having other disabilities towards the betterment. This study is useful if such kind of teaching methodology will be used in the classroom. Therefor the school authorities and teachers can take a step to introduce and facilitate the school system with computer assisted instructions (CAI). The Government of India is also in the process of establishing Information and Communication Technology Laboratory in every school across the country. The target set to achieve by the end of the year 2018. By this time every government school is presumed to be equipped with ICT laboratory with WiFi facility. Implications of the present study in various areas as follows:

a. Implementation for teaching methods, teaching strategies and teaching techniques

b. Implications for curriculum transaction

c. Implication for motivation and reinforcement to teachers and learners

d. Implications for special / resource teacher

e. Implication for society

a. Implementation for teaching methods, teaching strategies and teaching techniques

There were many advantages noted for using the right technique. The first and the foremost was that it helped save time and energy. For example, for all the tasks selected for teaching the 20 students, the student being taught with computer assisted instruction (CAI) had an advantage over the student being taught with traditional method. CAI group of student used to learn adaptive behaviour skills more quickly so these students had ample time to generalize it to other situations.

The special teachers working CwSN to be patient with their students. If they apply the right technique, there is progress of the time and the patience continues, otherwise the transfer also gets frustrated and does not feel like working with special needs

students. The present study has its implications for multisensory approach. While training with CAI to experimental group students were used multisensory approach viz. visual, auditory, kinaesthetic and tactile approach.

b. Implications for curriculum transaction

The efficiency in curriculum planning and development rests upon the need to link the level of concept with the cognitive level and ability of learners. The curriculum transaction for mentally retarded children is personalized because every child has a specific characteristic, specific need, different Intelligence Quotient and different associated conditions. Therefore teacher needs to prepare invidualized instructional methods and then transact the same in the classroom. The teacher will prepare individualized curriculum and consequently used the teacher method, teacher strategies and teacher module, teaching techniques and teaching aids. The curriculum should be developed in such a way through which learner can acquire meaningful acquisition of concepts. If the curriculum aims to be learner cantered then learner's characteristics and their predisposition should be major determinant in planning and development of the curriculum.

c. Implication for motivation and reinforcement to teachers and learners

The advantage noted, that it was reinforcing to the teacher as well as learner when the task was achieved quickly. The quick and steady progress in motor, academic and communication skills sustained the motivation in teacher as well as student. This achievement was every reinforcing to teacher as well as student. Whereas the less achievement found among students with intellectual disability when taught with traditional method.

Frequent presentation of the tasks and quiz improves the memory of the intellectually impaired adolescent. Rapid change in figures and colours of tasks improve concentration as well as interest for personal and social skill.

It also helps in the achievement of concept such as personal and social skills. It can be said that it is possible only because of the attractiveness of the task and its presentation on electronic screen.

d. Implications for special / resource teacher

The present study has its implication for the special teachers and professionals working the in the field of disability. It helps them to select and appropriate teaching method which would impart the skill in time saving manner and would also keep up their level of motivation.

e. Implication for society

The present study has its implications for society in general and teacher in particular. It will help them problem exhibited by the children along with teaching them, which facilitates better learning for each child. It will also enable them to explain the parents the methodology which is also to be carried out at home effectively.

Education for all, irrespective of whether they are children with disabilities, is a national concern and agenda of the government. Reaching out, where special education rehabilitation science is unreached due to geographical locations being remote such as dessert, hills or mountain coastal and forest areas can also be overcome by CAI programme.

The study has implications for social welfare organizations also. It will help them to spread awareness through CAI programme, media and in identifying and giving suitable reinforces as and when required.

The present study locates itself in this concern, that through distance and online education we can impart education or solve educational problems and reach the un-reached in our country, especially children with special needs. Likewise through this approach, children with intellectual disability could become part of the educational system and derive benefits that improve the quality of their lives.

5.4 SUGGESTIONS AND RECOMMENDATION FOR FURTHER RESEARCH

The present study was conducted with 38 children with mental retardation in a controlled situation in a classroom setting. Though study was conducted in a scientific manner, certain delimitation of the study was observed, on the basis of which the following suggestion and recommendation were made.

a. The sample taken for the present study was 38 students with intellectual disability. It is recommended that future research could be conducted on a large sample.

b. The present study was restricted to only children with mild and moderate intellectual disability. Further research could be conducted on various disability like down syndrome, autistic, children with ADHD etc.

c. Only two teaching methods were compared in the present study which could be increased for further research. The suggestive teaching methods could be demonstration method for personal skills.

d. The objective selected for training were motor, academic and communication skills. Further research could include more skills. The suggestive skills were social skills, personal skills etc.

e. The present was restricted to classroom setting. In future the study could be conducted in other setting i.e. home setting, institutional setting and inclusive setting.

f.   Providing fantasy context and providing the learner with choice over his/her own learning, student growth comparisons among the various types of students could be made using a computer assisted instruction programme that incorporates the remaining two mechanisms, (1) personalizing information, and (2) animating objects on the screen.

g.   Further studies could be conducted with severe mentally retarded children, learning disability children and autistic children as well.

5.5   NATIONAL IMPORTANCE OF THE STUDY

Our Honorable Prime Minister of India has taken initiative regarding Digital India and started Digital India Campaign. As indicated by the Ministry of Information Technology, Government of India, E-Learning has been recognized as a key zone that implies a basic stage in digital advancement. The department of IT defines e-learning as education and technology that can give high esteem integrated learning whenever at any place. The four parts of e-learning are tools, software, standards and content. The government also identifies the fact that e-learning supplements the regular conveyance of teaching in the classroom and helps in enhancing the content utilizing ICT – computers, mixed media and web. As specified on their website "the main thrust of e-learning programme is to effectively integrate e-learning methodology and approach with conventional classroom system to maximize the benefits following from the traditional education system, increase its reach to more and more learners and spreads from e-learning from the teaching of IT related subjects to other subjects in the school curricula." This main objective is strengthened by a few majors embraced by the Ministry of Human Resource Development. As a stage towards understanding this objective it has left on national level content improvement initiative through the project,

National Mission on Education through Information and Communication Technology (NMEICT).

The main objective of the research report is to show how computer assisted instruction (CAI) has significantly beneficial to all aspects of our live particularly on education. It has radically influenced the way knowledge and information are generated, developed and transmitted in technology education. Every teacher must be acquainted with how to apply CAI in teaching learning programme since teachers have a vital role in trainee's skill development. Therefore, this study was designed to determine relevance of computer assisted instruction for effective skill development among students in India.

The findings of the study among others revealed that teachers should be skilful in using CAI in the production of teaching materials that can be used in developing appropriate skills, incorporating the use of media and technology for teaching where appropriate and teachers teaching and managing courses through web-based system. It is suggested, government should ensure that their policy statement regarding the provision of necessary infrastructure and training for use of computer in the school system is effectively implemented and making it mandatory for teachers in developing computer skills needed in classroom environment. This could be achieved through adequate financial provision for tools and resources.