CHAPTER VI

SUMMARY, CONCLUSION & IMPLICATIONS
CHAPTER VI

SUMMARY, CONCLUSION & IMPLICATIONS

6.0 Introduction

The study ‘An Experimental Study on Inclusion of AAC System in The Curriculum of Teacher Training in Special Education and its Effect on Language Development of Children with Mental Retardation’ is summarised below with implications.

6.1 Rationale

The development of teacher education has been an ongoing process in India. Though its origin dates back to early 19th century, teacher education today has become a significant component of our educational system. In the post independent era the National Policy on Education (1986) has had a considerable effect on teaching practices. Integrated or inclusive, education for the disabled is one of the key issues in the policy. Hence, there is a need to review the existing teacher training programmes in special education. Integration is an aspect of the normalisation philosophy that ensures that a disabled individual be helped to acquire certain basic skills that are essential for functioning in the society. Skill for language and communication is one of these basic skills.

Delay in language development is a symptom of mental retardation. With a genuine inability to develop oral expressive language, the intellectually handicapped often need an AAC system to interact with people in their environment. While teachers realise the futility of teaching language to the mentally retarded through reading writing and speech, they are forced to continue with it in absence of knowledge about AAC system.
The present study is significant in that review of literature did not yield any document on AAC research conducted in India; and that it aimed to see the effect of AAC training on student teachers at pre service level.

6.2. Objectives of Study

The research study was conducted for the following purposes.

(i) To study the effect of AAC training on student teachers' ability to teach language and communication to learners with severe to moderate mental handicaps.

(ii) To study the impact of an AAC system on development of language and communication in learners with severe to moderate mental handicaps.

(iii) To study the effect of learning an AAC system on attitude of student teachers regarding need-based language programme.

6.3 Hypotheses

1. Training and practice of AAC system will enhance student teachers' ability to develop language and communication skills in learners with severe to moderate mental handicaps.

1. (a) The mean score on general communication skills of experimental group student teachers (with training on AAC system) will be significantly higher as compared to that of control group student teachers.

1. (b) The student teachers of experimental group will have significantly higher mean score on skills for development of semantics (in learners with mental handicaps) as compared to that of control group student teachers.

1. (c) The mean score on skills for development of syntax obtained by student teachers of experimental group will be significantly higher as compared to that obtained by student teachers of control group.
1. (d) The obtained mean score on skills for development of pragmatics by student teachers of experimental group will be significantly higher as compared to that by student teachers of control group.

2. Use of AAC system will enhance the language and communication skills in learners with severe to moderate mental handicaps.

2. (a) Gain from pre to post test on semantics skills by learners of experimental group will be significantly higher than that by learners of control group.

2. (b) Gain from pre to posttest on syntax skills by experimental group learners will be significantly higher as compared to that by control group learners.

2. (c) Gain from pre to posttest on pragmatics skills by experimental group learners will be significantly higher as compared to that by the control group learners.

3. The student teachers of experimental group will have a positive attitude towards training and practice of AAC system for development of language and communication skills in learners with mental handicaps.

3. (a) The posttest scores of experimental group student teachers will have a significant positive correlation with their scores on Reaction Scale.

6.4. Design

The study was conducted in two phases. Phase 1 included training on AAC System given to student teachers of the B.Ed. Course. Phase 2 was concerned with teaching of language and communication skills to learners with severe to moderate mental handicaps by student teachers of Phase 1. Both phases employed the Pretest - Posttest Control group design. The design involves at least two group (experimental and control) that are formed by
random assignment. Each group is administered a pretest. The experimental group receives treatment and then both groups are posttested.

6.5. Sample

Selected sample for both phases of the study were as below:

(i) Student teachers (N=30) were randomly selected from an initial sample (N=58) of student teachers enrolled in two B.Ed. (sp. ed.) courses in Mumbai.

(ii) Sample (N=30) of learners with severe to moderate mental handicaps and speech and language delay were randomly drawn from three special schools in Mumbai. The selected sample of learners were within the age range of 6 to 12 years.

6.6. Tools

The following tools were employed in the study.

(i) Tools for identification & selection of sample
- Kamat Binet Test of Intelligence
- Sequin Form Board
- Language Assessment Tool.

(ii) Tools for treatment
- The Makaton Vocabulary
- The Makaton Training Module

(iii) Tools for measurement
- Teacher's Behaviour Scale For Language Teaching
- Children's Language Acquisition Test (CLAT)
- Reaction Scale (RS)

From the above tools, the Makaton Training Module, TEBSLAT, CLAT and RS were developed by the researcher for the purpose of
this study, and subsequently validated and pilot tested. For some, the reliability coefficient was also established.

6.7. Procedure

The collection of data was according to the following procedure.

(i) Identification of sample:

For Phase 1, the subjects (N=30) were randomly selected from the student teachers enrolled in the pre service B.Ed. (spl. ed) courses in Mumbai. For Phase 2, random selection of subjects (N=30) with severe to moderate mental handicaps (6-12 years) and language deficits was made from three special schools in Mumbai.

Subjects in both phases were randomly assigned to experimental & control groups.

(ii) Administration of pretest:

TEBSLAT and CLAT were used as pretests for Phase 1 and Phase 2 respectively.

(iii) Treatment:

Experimental group subjects of Phase 1 were given training on Makaton Vocabulary Language Programme through the Makaton Training Module. Subsequently, the experiment group student teachers were assigned to experimental group (Phase 2) learners for 10 individual teaching sessions. The student teachers of control group were assigned to control group learners. The treatment at Phase 2 involved use of the Makaton Vocabulary for teaching language and communication to learners in the experimental group. Teaching was done under supervision of the investigator.

(iv) Administration of posttest:

TEBSLAT and CLAT were used again as posttests in Phase 1 and 2. Additionally Reaction Scale was administered to the student teachers of the experimental group in order to measure their opinion towards training and
practice of AAC system for development of language and communication in learners with severe to moderate mental handicaps.

6.8. Statistical Techniques

The mean scores obtained by experimental and control groups (Phase 1 and 2) were analysed for significant difference using the t-test.

Analysis of data was also done with test of MANOVA in order to rule out difference between means due to residual effects.

Pearson's product-moment coefficient was used to correlate the posttest scores of experimental group student teachers with their scores on Reaction Scale.

This test was also applied to establish correlation between the marks allotted on TEBSLAT by the investigator and another observer.

Spearman-Brown and Buttman Split-Half tests were applied to establish reliability coefficient of the Reaction Scale.

6.9 Conclusions

The conclusions from the present study are listed below.

(i) Training and use of AAC system was effective in enhancing student teachers' ability to develop language and communication skills in learners with severe to moderate mental handicaps.

(ii) Training and practice of AAC System had significant effect on general communication skills of student teachers.

(iii) Student teachers with training and practice of AAC system were found to have significantly higher mean score on skills for development of semantics in learners with severe to moderate mental handicaps, in comparison to that of the student teachers of control group.

(iv) Training and practice of AAC system had significant effect on student teachers skills for development of syntax in learners with severe to moderate mental handicaps.
(v) Student teachers with AAC training showed significantly higher performance on skills for development of pragmatics in comparison to those in control group.

(vi) The use of AAC system was effective in enhancing language and communication skills of learners with severe to moderate mental handicaps.

(vii) Learners using AAC system gained significantly higher on semantic skills in comparison to learners in control group.

(viii) Use of AAC system was effective in enhancing syntactic skills of learners with severe to moderate mental handicaps.

(ix) In comparison to learners of the control group, the experimental group learners who were taught with AAC technique showed significantly higher gains on pragmatics.

(x) Training and practice of AAC system influenced the student teachers in favour of need based language intervention programme.

6.10. Implications of the Study

It is evident from the findings enumerated above, that the present study has implications for teacher educators, teachers students, family & community, administrators in special education, and further researches.

6.10.1 Teacher Educator

Teacher educators are usually persons with an initial degree in teacher qualification i.e. a B. Ed., along with a master’s degree in a basic discipline with or without an additional Master’s degree in education (NCTE 1998). In the case of special education, the teacher educators should have a Bachelor’s and Master’s degree in special education. The teacher educators are expected to be up to date in new techniques of teaching and training.

In this study training and practice of AAC system was given to the student teachers for implementing language development programmes with children with severe to moderate mental handicaps. The experiment was found
to be more effective than the regular strategies used for language development in special education classrooms. The result indicates that students of teacher preparation programmes should be trained on use of AAC systems.

Since introduction & use of AAC system is relatively new in India, most teacher - educations have little or no practical knowledge about it. However, with regard to the findings of this research it is considered important that teacher educators be trained on AAC themselves.

They would then be able to train teachers on AAC not only at pre service but at in - service level as well.

6.10.2. Teachers

Given the unique learning, behavioural and sometimes physical needs of students with disabilities, the preparation of special education teachers in the 21st century requires both more depth and more breadth. In addition, special educator preparation should move in the direction of bridging categorical boundaries. In stead of limiting themselves to teaching the 3 Rs. to their disabled students, the special teacher must assume the significant role of a prime implementor of the special education programme meant for rehabilitating the students in the society. This requires that teachers be sensitive to educational, social and interactive needs of the students and implementing need - based intervention programmes.

In the present research training and practice of AAC system has been found to effective in enhancing those teaching abilities that are important for developing communication skills essential for students with mental handicaps to function adequately in interactive environments. This points to the need of training the special education teachers working with intellectually disabled to be trained on the use of AAC systems. Inclusion of AAC should be in the syllabus of teacher education programmes as has been shown in this research. The Makaton Training Module may be used as a guideline. The positive attitude (as shown on Reaction Scale) of student teachers in the experimental group serves
as an indicator for undertaking this modification in the existing teacher training programme.

6.10.3. **Students with mental handicaps**

The process of language development characteristics of mental retardation, and language & communication deficits in individuals with mental handicaps have been discussed in the report earlier.

Review of literature yielded many studies supporting the usage of AAC systems with persons with disabilities.

The findings of the present research are in concurrence with studies cited in this report. The use of Makaton Vocabulary Language Programme was found to be effective in enhancing language and communication in children with severe to moderate mental handicaps. The children not only improved their performance on semantics, syntax and pragmatics skills but were also noted to be more motivated, attentive and actively involved in the teaching-learning process. This emphasises the overall usefulness of the Programme and indicates that in a special education centre AAC should be made available at (i) pre-school level - when infants and young children are in the process of developing receptive and expressive language (ii) school level - when signing and use of graphic symbols enable the students to benefit from and participate in the educational process, and (iii) rehabilitation level - when independent living skills such as cookery, household management, personal hygiene, social skills, sex education and management of money etc. are taught to school leavers and adults with intellectual disabilities.

6.10.4. **Family & Community**

Family and community play an important role in education and training of children with special needs. In fact parents are considered to be active members of the multidisciplinary team, and as such need to be trained on usage of all therapeutic techniques and / or assistive devices that may be
applicable for their children. Also, for children with disabilities, family and people in neighborhood provide opportunities for social interaction.

The use of AAC system has been found to be enhancing development of language and communication in children with severe to moderate mental handicaps. The family members of such children who are on AAC programme should be trained on the system so that they could provide effective follow up at home and ensure a warm and supportive social climate where the child’s attempts to communicate with AAC would be understood, respected and reciprocated.

6.10.5. Administrators

While importance of AAC has been recognised in the western countries, and infrastructural changes have been made to accommodate its usage, the process is still to begin in India. Administrators are the key to the success of any programme. AAC, which is a non traditional approach, is relatively new for our country. Its implementation in special educational facilities cannot be done appropriately without the support of the Principals, Head Teachers and Administrators. The persons in charge of the institutes and organisations must be oriented to the usefulness and working of the AAC system in order for them to introduce, support and develop its usage in their set ups.

6.11. Suggestions for further Researches

All research studies have certain limitations, and the present study is not an exception in this respect. The researcher has drawn significant conclusions from this investigation, but further studies are required in order to support and generalise the results across populations and environments. Keeping in view the limitations of this study the investigator makes following suggestions for further research.
- Student teachers of the B.Ed. (spl. ed.) courses were among the subjects of this study. Further studies can be with other rehabilitation workers such as therapists, vocational training staff and teachers with Diploma in special education as their sample.
- Effectiveness of AAC system for learners (6-12 years) with severe to moderate mental handicaps has been established through this study. Further research should be done with older children and adults with mental handicaps and those with autism and multiple disabilities.
- In this study, Makaton Vocabulary Language Programme was found to be effective in enhancing language and communication skills. Subsequent investigations are needed in order to document the suitability of Makaton symbols developing literacy skills in student with special needs.
- Further researches should be undertaken on other systems of alternative and augmentative communication such as Blissymbolies, Rebus Symbols, Paget - Gorman System etc.
- The present research was conducted in Mumbai with a relatively smaller sample. Future studies should be done on larger sample belonging to special education centres from different parts of the country.