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Chapter 5
SUMMARY, FINDINGS AND CONCLUSION

5.01 EDUCATION AND SOCIETY

The terms “Education” is in wider in its connotation. Education merely means the acquisition of knowledge. It is meant for the overall upliftment of the entire mankind. It makes a person suitable for the society. Education is universally accepted fact that educated and enlightened citizens are essential for a successful functioning of a country. Education is the reflecting mirror of the culture of any nation. “Education is a force of social regeneration. It must march hand-in-hand with the living and creative forces of social order” - Counts (1976).

Education develops the scientific and technological skills, which in turn continue to raise the standard and values of life. Education is the major force which continuously reorganises and reconstructs the past experiences for the future generation, thus making a society grow and develop. According to Vivekananda, “the training by which the current and expression of will are brought under control and became fruitful is called Education”.

Education is preparation for complete living. It has been subjected to violent shocks from time to time. India is a developing country and a large portion of her revenue is spent on Education. Naturally the Government and
the people have got every right to demand, that the educational institutions justify the large expenditure being incurred by them, by making their products useful to nation which is now undergoing a process of reconstruction.

5.02 NATIONAL POLICY ON EDUCATION

National Policy on Education 1979 (Government of India, 1979) stated that an ideal system of education should enable individuals to know and develop the fullest, their physical and intellectual potentialities and promote their awareness of social and human values, so that they can develop a strong character and live better lives and function as responsible members of the society. It should strengthen values of democracy, secularism and socialism. Education should promote national unity, pride and cultural heritage, and faith in the country’s future. The effort must be to inculcate scientific and moral values and facilities pursuit of knowledge.

The impact of Gandhiji’s “Basic Education” is very much on Draft National Policy, 1979. It discussed about moral education and socially useful productive work as part of education. It says that “the content of education at all levels needs to be make the educational process functional in relation to the felt needs and potentialities of the people”. It should abridge the gulf between educated classes and masses and overcome feelings of superiority, inferiority and alienation.
Regarding elementary education it proposed universal elementary education up to the age of 14 as laid down in the Directive Principles of the constitution, which has to be achieved through formal and non-formal methods. And at elementary stage the curriculum must be capable of catering to the requirements of wide range learners and learning circumstances and built around local situations. Incentives such as mid-day meals, free text books, stationary and uniforms should be provided to poor pupils, Special attention should be given to the education of girls and children of scheduled castes and scheduled tribes. It proposed common school system, the main feature of it will be the neighbourhood school plan to promote common interests and social integration apart from providing quality education.

Much emphasis was laid on Adult Education, in which the policy treated as an integral part of the Revised Minimum Needs Programme (RMNP). It is aimed at not only acquisition of literacy and numeracy, but also functional development and Social awareness with a view of cultivating the habit of self-education.

5.03 THE POSITION OF EDUCATION AS IN 1986

Elementary Education

Provision of free and compulsory Education to all children until they complete the age of 14 years is a Directive Principle of the Constitution. According to Fifth All India Education Survey, 1986, the number of primary
school and the gross enrolment of 6-11 age group and 11-14 age group were increasing. But universalisation of Elementary Education (UEE) in its totality is still an exclusive goal. The NPE 1986 and its POA gave unqualified priority to UEE and introduced many innovations. The emphasis was shifted from enrolment perse to enrolment as well as retention. The NPE, 1986 sought to adopt an array of meticulously formulated strategies based on Micro planning. Thirdly it reorganised the school enrolment, infrastructure of schools, and sufficient of Instructional materials. The learning was male child centred and activity based learning.

Non Formal Education (NFE) has to become an integral competent of the strategy to achieve UEE. NFE as envisaged by the NPE 1986 and its POA would have enough flexibility to enable the learners to learn at their own pace and at the same time would have quality comparable with formal education.

Most of the directives of NPE-POA, have been operationised by the Union and State / UTS. Operation Black Board covered lakhs of Primary school pupils under the guidelines in the National Curricular Frame work, the NCERT revised the entire school syllabi and brought out revised text books. Total Literacy campaigns were conducted. The NPE, 1986 spelt not minimum levels of learning (MLL) world conference on Education for ALL (EFA) held in March 1990 in Jometien, Thailand. It was organised by UNESCO, UNICEF, UNDP and the World Bank. The framework for availing
external assistance for basic education was evolved at the 46th meeting of the CABE held on 8-9 March 1991 and at the 47th meeting held on 5-6 May 1992 Revised Policy Formulations (RPF) was carried out with some modifications. This RPF provide for launching of a National Mission for the achievement of the goal of UEE.

**DPEP**

Article 45, under Directive Principles of State policy laid down the responsibilities of providing free and compulsory Primary Education to the children of Independent India the Central and State Governments.

After implementing all the innovative programmes to improve the enrollment rate of school age children of 6-11, the results were not encouraging and not upto the mark of expectation. A special drive with special goals to achieve this aim was felt a dire need. “District Primary Education Program (DPEP) was launched in selected districts through out India. DPEP was implemented in a physical manner. In Tamil Nadu State, 4 districts were selected to implement DPEP in the I phase 3 Districts were selected for the implementation of DPEP. Pudukkottai District was one among the 3 Districts in which DPEP was implemented in Phase II. In a vast country like India with a growing population, the process of Education needs to be dynamic enough to cater the needs of the continuous addition to the total population.
The main aim of DPEP was to achieve 100% enrollment; 0% Dropout; 100% completion with an ensured quality in primary Education. DPEP was a time bound project which had been operated in Pudukkottai District from 1997-2002 having a strong foundation to raise the standards in the quality of primary education as well as to supply the necessary infrastructure including the rigorous training programmes. All the B blocks of Pudukkottai District had been benefited by the DPEP. DPEP was a timely additionality provided at the right situation in Pudukkottai District because a flare / flair of awareness among parents lighted by the magnificent field work through “Arivoli Movement” DPEP focused on multifaceted programmes which resulted in tremendous achievements. With this additionality of DPEP, the primary educational scenario has been totally enhanced to a qualitative level.

The encouraging trends the improvement of elementary education and the results enjoyed through the implementation of DPEP invited another scheme to be introduced throughout India to raise the standards of elementary education and that is the ‘SARVA SHIKSA ABHIYAN’, a (Education for All).

Programme specially designed for the universal elementary education. “Education for All” was launched with year 2001-2002 with the following main features.
 Invasion Reforms in centre and states to improve efficiency of delivery system.

- Sustainable financing - long term partnership between centre and states.
- Community ownership - VEC, PTAs women groups.
- Capacity Building - NCERT / NIEPA NCTE / SLERT / DIET to play a major role.
- Community based monitoring with transparency.
- Focus on girls and other special groups.
- District Pre Project phase.
- Thrust on quality.
- Central role of Teachers - Focus as their development needs through BRCS / CRCS.
- Habitations as a unit of planning.
- District Elementary Education Plans.

**The main objectives of SSA**

- All children complete five years of primary schooling by 2007.
- All children complete eight years of elementary schooling by 2010.
Focus on elementary education of satisfactory quality with emphasis on education for life.

Bridging all gender and social category gaps at primary stage by 2007. and at elementary education level by 2010.

Universal retention by 2010.

5.04 TEACHER EDUCATION IN INDIA

Teachers are the torch bearers in creating social, cohesion, national integration and a learning society. They not only disseminate knowledge but also create and generate new knowledge. Every nation takes its efforts to provide necessary professional inputs to its teachers for designing about a change in their system. The tasks of bringing qualitative change in instructional efficacy of the teacher education system in itself is a challenging one.

Since independence, India has witnessed, several attempts to change, modify and indigenize the inherited system of teacher education. Teacher education, by and large, is conventional in its nature and purpose. The integration of theory and practice and consequent curricular response to the requirements of the school system still remain inadequate. Teachers are prepared in competencies and skills which do not necessarily equip them for becoming professionally effective. Their familiarity with latest educational development remains insufficient.
5.05 TEACHERS AND THEIR TRAINING

Teacher performance is the most crucial inputs in the field of education. Whatever policies may be laid down, here have to be interpreted and implemented by teachers. Teacher selection and training, competence, motivation and the conditions of work impinge directly on teachers performance. The NPE 1986 calls for a substantial improvement in the conditions of work and the quality of teacher’s education. It also emphasises the teacher’s accountability to the pupils, their parents, the community in their own profession. The Revised Policy Formulations reiterate without modifications, the NPE 1986 postulates on Teachers & Teacher Education.

The area where significant advances were made since 1986 is teacher education. A centrally sponsored scheme of Teacher Education was launched in 1987. The Scheme of Mass orientation of School Teachers was carried out during 1986 - 89. This orientation was done through 10 day camps during summer vacation.

5.06 SCERT

The POA 1986 envisaged setting up District Institutes of Education and Training (DIET) to provide quality pre-service and in-service education to teachers and Adult Education (AE) / Non Formal Education (NFE) personnel, to provide academic and resource support to the elementary and adult education systems and to envisage in action research and innovation
in these areas. March 1992, 306 DIETs were sanctioned, of these 162 are already conducting training programmes.

The POA also, contemplated upgrading Secondary Teacher Education Institutions (STE’S) into Institutes of Advances Study in Education (IASE’s) and strengthening Colleges of Teacher Education (CTEs) one time matching grant of Rs.15 lakhs was sanctioned for strengthening of State Council of Educational Research and Training (SCERT) in each state. Statutory and autonomous status was conferred on the National Council of Teacher Education (NCERT). A UGC panel of Education is working to strengthen the Departments of Education in the Universities.

To provide in service training to all teachers at the interval of five years, the existing scheme of Teacher Education will be modified and continued. While attempt will be made to provide maximum coverage through DIETs / CTEs / IASEs, special orientation programmes will also be launched.

The SCERTs will be made independent and autonomous overseeing the functioning of DIETs, DEVs etc. State Board of Teacher Education will be set up for effective role in maintaining the standard of teacher training institutions and other related functions. The norms of Central Assistance under the Scheme will be reviewed and revised suitably. Efforts will be made to provide training for per school education. A special programme will
be launched for preparation and production of teaching learning material for teacher education in different languages.

5.07 DIET - MISSION AND ROLE

Pursuant to the provisions of NPE on teacher education, a Centrally Sponsored Scheme of Restructuring and Reorganisation of Teacher Education was approved in October, 1987. One of the five components of the Scheme was establishment of DIETs. Certain details about the Scheme may be seen in Annex.2. Draft guidelines for implementing the DIET component were circulated to States in October 1987 and have, together with certain subsequent circulars, formed the basis for its implementation so far. Till October, 2009. Central assistance had been sanctioned under the Scheme for setting up a total of 216 DIETs in the country.

Annex 3 gives a resume of progress, of other important initiatives in the area of Elementary and Adult Education, as on 31-3-1989.

A DIETs Mission could be briefly stated in the following terms.

To provide academic and resource support (vide para 1.5) at the grass-roots level for the success of the various strategies and programmes being undertaken in the areas of elementary and adult education, with special reference to the following objectives:

Universalisation of primary elementary education.

Adult Education:

NLM targets in regard to functional literacy in the 15-35 age group.
The above is a general mission statement. It will have to be translated into specific goals for the DIET, so as to suit the needs of individual states and districts, and will be ultimately operationalised through specific performance norms set for individual DIETs.

**DIET - Pace - Setting Role**

Pursuit of excellence would have to inform all activities of the DIETs, in which context, it will have two inter-related aspects:

i. Excellence in the Institute’s own work, and

ii. Helping the elementary and adult education systems in the district in achieving excellence

As far as the first aspect is concerned, efforts will be made to provide to DIET’s all necessary physical and manpower resources. But it will be for them to harness these and other available resources in the best possible manner so as to achieve and promote excellence.

In the context DIETs will also have a very important pace-setting role to play. They will be expected to become models for other educational institutions in the district in terms of meticulous, efficient and effective planning and execution of functions, harmonious and creative organisational climate.

**DIET - Part of a Larger Design**

DIETs are a part of a larger strategy to achieve national goals in the areas of Elementary and Adult Education. Various components of the
strategy are inter-dependent and mutually reinforcing. Annex. I also outlines DIET’s role in the context of the other components. DIETs cannot therefore afford to view themselves in isolation, and must faithfully discharge their role of supplementing and complementing other parallel initiatives.

**DIET - Transactional Philosophy**

A DIET has 3 main functions, viz.

i. training (both of induction level as well as continuing varieties)

ii. resource support (extension / guidance, development of materials, aids, evaluation tools etc) and

iii. action research

This section discusses the basic approach and philosophy to be followed in undertaking these functions, especially training.

**Basic Transactional Approach for the DIETs: Placing the Learner at the Centre**

The NPE and POA plead for adoption of a Child Centred approach in elementary education. The relevant portion of NPE reads:

**Child Centred Approach**

A warm welcoming and encouraging approach, in which all concerned share a solicitude for the needs of the child, is the best motivation for the child to attend school and learn. A child-centred and activity-based process of learning should be adopted at the primary stage.
In the case of Adult Education Programmes also, it is clear that functional literacy should be imparted to adults in a participative, learner-active mode.

The above statements contained in the NPE and POA have profound implications for programmes of teacher education and training of instructors of adult and non-formal education. The child or learner-centred approach necessitates a fundamental change in the manner of curriculum transaction. The challenge is an especially daunting one in view of the special characteristics of our system-high pupil teacher ratio, multi-grade teaching, in adequate physical facilities, and so on. The role of the teacher/instructor would now be no longer one of transmitting readymade knowledge to the learner but, instead, that of a designer and facilitator of learning experience, a manager of instruction and learning resources, and an active contribution to the all-round development of the learner.

All programmes of pre-service and in-service teacher education and of training of AE/NFE personnel in the DIET would be so designed as to train the teacher/instructor in transacting curriculum, keeping the learner at the centre of the teaching-learning process. If the DIET is to achieve this, it follows that it will have to transact its own programmes in the same learner-centred mode which it would expect of its trainees. This basic approach would imbue the transaction of all programmes in a DIET. Some of the implications of this would be as follows:
Programmes will be need-based. Even within a group of trainees / participants, individual differences and needs will be identified and catered to.

Trainees will be enabled to experiment discover, learn, practice and innovate for themselves, rather than being lectured to. Learning activities will be suitably organised to individual and group modes.

Maximum possible use will be made of the local environment in the learning process. Curricula and learning activities will be suitably related to it.

Good work done by trainees will be duly recognised, encouraged, displayed and published.

The DIET will itself adopt the attitude of a “life-long learner” rather than that of an oracle or know-all. It will receive as much from the field as it would endeavour to give to it. The district will serve as the ‘school’ for its learning will serve as the ‘school’ for its learning experiences, while it may carve out one or two special areas as its ‘lab areas’

**DIET’s Special Target Group**

“The concept a National System of Education implies that, upto a give level, all students, irrespective of caste, location or sex, have access to education of a comparable quality”, says the NPE. It goes on to say that “to promote equality, it will be necessary to provide for equal opportunity to all not only in access, but also in the condition for success”. This is quite the
essence of the universalisation task and means that needs of educationally disadvantaged groups would have to be given maximum attention. The largest such groups are:

i. Girls and women

ii. Scheduled Castes and Scheduled Tribes

iii. Minorities

iv. The handicapped, and

v. other educationally disadvantaged groups e.g. working children, slum-dwellers, inhabitants of hilly, desert and other inaccessible areas.

It follows that DIETs also, in all aspects of their work, would have to give primary attention to promotion of education of the above groups.

**DIET - Autonomy and Accountability**

An overhaul of the system of planning and management of education will receive priority. It also says that in this process, two of the “guiding considerations” will be:

i. “decentralisation and the creation of a spirit of autonomy for educational institutions”.

ii. “establishing the principle of accountability in relation to given objectives and norms”.

In view of the above, DIETs would need to be given adequate functional - autonomy academic, administrative and financial - and would at
the same time to accountable vis-à-vis clearly laid down objectivities and norms. They would be institutions of the State Government or UT Administration, and will therefore be ultimately answerable to them. The State Government / NT Administration may exercise its supervisory functions through the SCERT and SRC.

However, the immediate accountability of the DIET will be to the District Board of Education (DBE) which, according to the NPE, is to be created to manage education up to the higher secondary level. The DBE will set specific goals (in the long, medium and short term) and performance norms for the DIET. It will do so in consultation with the Institute, and keeping in view general norms and guidelines laid down at the national and State levels. It will also review the Institute’s performance vis-à-vis such goals and norms on an ongoing basis. Till DEBs are set up, State Government may designate SCERT / SRC or some other suitable educational authority to perform the DBE’s functions vis-à-vis DIETs.

**DIET - Linkages**

Not merely will every DIET establish a close and continuing dialogue with ‘the field’ (i.e. with elementary schools, school complexes, teachers, head-masters, school supervisors, Instructors / Supervisors / Project Officers of AE and NFE, and with District level officers in these three sectors), but will also establish close linkages with organisations and institutions at the national, State, Divisional and District levels whose
objectives and interests converge with its own Some of these institution would be as follows:

**At the Divisional level**

NGOs, institutions of higher education, secondary teacher education institutions, DRDA, local Radio Station (wherever applicable), etc.

**At the Divisional level**

University Dept. of Education, Institution of Advanced Study in Education (IASE), NGOs and other concerned organisations and institutions.

**At the State level**

SCERT, SIET, SRC for Adult Education, NGO

**At the National level**

NCERT (including its Regional College within whose jurisdiction the state falls), NIEPA, Centre for Culture Resources and Training (CCRT), Directorate of Adult Education, Central Institute of Indian Languages, Mysore, Kendriya Hindi Sansthan, Agra, other premier organisations, institutions and NGOs working in the area of dementary and adult education, etc.

In specific terms, the linkages would be through a meaningful and continuous dialogue in which institutions share problems, experiences, achievements, information and resources. The DIET may also work as an
agency for implementing some of the programmes, and activities of national and state level organisations.

**DIET to be Non-Vocation, Mainly, Residential Institutions**

Organisations of in-service programmes for teachers and training programmes for AE/NFE personnel would be one of DIET’s main functions. This activity would go on throughout the year, but would peak during school vacations because that is when the Institute’s resources would be free from the work load of pre-service training, and also because that cause minimum dislocation in schools. Therefore, DIETs will be non-vacation institutions - their personnel would have to be classified as ‘non-vacation staff’, and given consequential benefits as per State Governments, Rules.

DIETs would also be expected to provide residential facilities to as many of their trainees as may be possible within the resources available for construction of hostel. In utilising available hostel accommodation first priority shall be given to trainees other than per-service trainees. The later shall be accommodated to the extent possible after accommodation needs of all other training programmes (e.g. in-service programmes for teachers, training programmes for AE/NFE personnel etc.) have been met.

**Guidelines in this document - largely Indicative**

As in the case of the earlier guidelines, the intention in this document too is not to lay down a rigid set of guidelines for the whole country. These guidelines should be treated, in the main, as indicative rather than
prescriptive, and State Government would be expected to implement the programme of DIETs with such local variations and adaptations as may be necessary in their respective contexts. At several places in this document, alternatives and flexibilities have also been specifically indicated. In some areas however, these guidelines would have to be applied more rigidly, e.g. in regard to total number of posts, pre-conditions to be fulfilled by State Governments. While an attempt has been made in this document to spell out the areas of work, functions and activities of a DIET at considerable length, these can be fully appreciated and worked out only if these Guidelines are read in conjunction with certain other important documents. Some of these are as follows:

- NPE
- POA
- “Teacher Education Curriculum : Frame work” published by the NCTE (presently being revised)
- “National Curriculum for Elementary and Secondary Education : A Frame work” (revised version) published by the NCERT in April, 1988, 2000, 2005)
- Centrally Sponsored Schemes of Operation Blackboard, Non-Formal Education, Improvement in Science Education, Educational
Technology, Environmental Orientation to Education, and Integrated Education for Disabled Children.

- The “National Literacy Mission” document and the Scheme of “Jan Shikhshan Nilayams” published by the Ministry of Human Resource Development (Department of Education)
- Suggested Lists of Recommended Books and Equipment for DIETs, prepared by NCERT.

**DIET’s Functions in Tamil Nadu**

The context, mission and role of the DIETs have been discussed in the preceding Chapter. Their functions, as spelt out in the POA, have been quoted in Annex 2. These could be re-stated as follows:

1. Training and orientation of the following target groups:
   i. Elementary school teachers (both pre- and in-service education).
   ii. Head Masters Heads of School Complex and officers of Education Department upto Block level.
   iii. Instructors and supervise of Non-formed and Adult Education (induction level and continuing education)
   iv. Members of DBE and Village Education Committees (VECs), Community leader, youth and other volunteers who wish to work as educational activities.
v. Resource persons who will conduct suitable programmes for the target groups mentioned at (i) and (iii) above, at centre other than the DIET.

2. Academic and resource support to the elementary and adult education systems in the district in other ways e.g. by (i) extension activities and inter-action with the field, (ii) provision of services of a resource and learning centre for teachers and instructors (iii) development of locally relevant materials teaching aids, evaluation tools etc., and (iv) serving as an evaluation centre for elementary schools and programmes of NFE / AE.

3. Action research and experimentation to deal with specific problems of the district in achieving the objectives in the areas of elementary and adult education.

5.08 ATTITUDE TOWARDS MATHEMATICS EDUCATION

When we talk about a Mathematics teacher's quality in teaching Mathematics, most people would take teacher's Mathematics achievement as a correlated variable, which would relate to teacher's teaching competency.

In Schofield (1981), Shulman (1987) and Ball (1991)'s papers, they took subject-matter knowledge as Mathematics teacher's Mathematics achievement. Thus, subject-matter knowledge is considered as a measurable performance indicator for assessing teacher's Mathematics
achievement. In the past decade, teacher’s subject-matter knowledge was measured by the scores achieved on standardized tests, by number of academic modules, by number of courses taken in university (Ball, 1991; Shulman, 1987). In Hong Kong, most educators have the same view on taking Mathematics subject-matter knowledge as Mathematics teacher’s Mathematics achievement. But these quantitative measures do not represent the teacher’s entire knowledge of subject matter, especially in the teaching profession, since subject matter knowledge also includes pedagogical content knowledge.

In recent years, pedagogical content knowledge has been considered as another category of teacher’s subject-matter-knowledge. Ball (1991) and Shulman (1986) feel that this kind of knowledge can be described as knowing the ways of representing and formulating the subject matter and making it comprehensible to students. As teacher’s instructional devices influence the process of learning, it is therefore important to understand how teachers explain Mathematics knowledge to students, what they emphasize and what they do not; and what methods they choose to help students understand. Although many researchers assumed that teacher’s pedagogical content knowledge is influenced by their subject-matter knowledge (Ball, 1991; Shulman, 1986), the interrelationship between the two is not clear enough. Up to the present, there still has been very little research, especially in Hong Kong, studying this correlation among
Mathematics teacher. Therefore, there are strong rationales to support the researcher to investigate their relation in the Hong Kong context. As most teachers consider pedagogical content knowledge as another category of teacher’s subject-matter knowledge, in order to make the difference between pedagogical content knowledge (PCK) and subject-matter knowledge (academic) more unambiguous, in this study, the subject-matter knowledge (academic) is replaced by the new term, Subject Content Knowledge (SCK).

5.09 ATTITUDE TOWARDS TEACHING PROFESSION

In literature it’s regarded that studies on teacher trainees’ opinions about teaching profession knowledge courses are limited. Erden has conducted a study about the attitudes of teacher trainees towards teaching certification lessons with 10-itemed Likert type attitude scale. In this study conducted by Erden, it is seen that the teacher trainees’ attitudes towards certificate lessons change with respect to subject fields and willing on being a teacher. Besides, Gorgen and Deniz have conducted a study related with opinions of teacher trainees towards teaching certificate program with questionnaire included 10-item.

5.10 MATHEMATICS EDUCATION

India has a long history of teaching and learning Maths dating back to the Vedic Age (1500 to 200 BC). During the period of AD 200 to 400, several works on astronomy and Mathematics were composed, mainly
based on indigenous knowledge. During the period of AD 400 to 1200, a new branch known as Ganita came into existence with three separate components namely (1) arithmetic, (2) algebra and (3) geometry.

The Educational Commission (1964-66) recommended Mathematics as a compulsory subject for students at school level. The commission points out that, “In teaching of Mathematics, emphasis should be more on the undertaking of basic principles than on the mechanical teaching of mathematical computations”.

The National Policy of Education (1986) has considered the importance of Mathematics in general education and suggests that, “Mathematics should be visualized as the vehicle to train a child to think reason, analyse and to articulate logically”. The objectives of Teaching of Mathematics are:

1. To help the pupils to understand mathematical concepts and their application in every day life
2. To enable the pupils to develop among them a spirit of thinking about mathematical concepts and to know the mathematical facts and knowledge.
3. To develop in them mathematical attitude, spirit of enquiry, mathematical reasoning and imagination.
4. To enable the pupils to handle mathematical instruments precisely.
5. To help the pupils to solve the future problems.
5.11 OBJECTIVES OF THE PRESENT STUDY

The objectives of the present study are:

- To find out the level of Attitude Towards Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Institutional Variables.
- To find out the level of Attitude Towards Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Trainees Variables.
- To find out the level of Attitude Towards Teaching Profession among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Institutional Variables.
- To find out the level of Attitude Towards Teaching Profession among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Trainees Variables.
- To find out the level of Academic Achievement in Mathematics Education of the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Institutional Variables.
- To find out the level of Academic Achievement in Mathematics Education of the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Trainees Variables.
5.12 HYPOTHESES

To achieve the objectives stated above the following hypotheses have been formulated:

✧ There is no significant difference in Attitude Towards Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to institutional Variables.

✧ There is no significant difference in Attitude Towards Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Trainees Variables.

✧ There is no significant difference in Attitude Towards Teaching Profession among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to institutional Variables.

✧ There is no significant difference in Attitude Towards Teaching Profession among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Trainees Variables.

✧ There is no significant difference in Academic Achievement in Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to institutional Variables.

✧ There is no significant difference in Academic Achievement in Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to Trainees Variables.
5.13 NEED FOR THE STUDY

The importance of education is growing all over the world. The relationship between education and development, of the nation is felt by everyone in the world. Education in math and science is of primary importance due to an increasingly interdependent global economy, the labor market and the technological developments that characterize our era and the near future (Third Meeting of ICSU Scientific Planning Group in Mathematics Education, 2008). Maths education is now understood as a right of all students as a specific type of preparation for life. In India also various measures have been taken to improve the mathematical literacy among the students right from primary level. The main duty of a teacher is to create permanent behavioural changes on the students in the direction of the objectives of the school Mathematics curriculum. To carry out this mission teacher needs a rich knowledge on both content and methodology of Mathematics. The teacher trainees who are going to become future teachers should have mastery in the primary school Mathematics content and methodology. The quality of mathematics education depends not only on cognitive domain but also in the affective domain. Studies have found that affective variables, such as attitude, motivation, and anxiety, are strongly linked to learning Mathematics. That is, if a student has a negative attitude towards Mathematics, this will negatively impact upon his learning (McLeod, 1992; 1994). Thus the achievement in mathematics education by
the trainees during the training period depends on their attitude towards Mathematics education.

Teachers having mastery alone could not improve quality in the classroom Mathematics teaching. The teacher should have favourable attitude towards teaching profession. The Mathematics achievement in future classroom by the learner depends on the achievement in Mathematics Education attained by the trainees during the Diploma in Teacher Education, their attitude towards Mathematics Education and their attitude towards Teaching Profession. Review of related literature reveals that no much studies have been carried combining these three selected variables. Hence present study entitled ‘A Study of Attitude Towards Mathematics Education, Attitude Towards Teaching Profession and Academic Achievement in Mathematics Education among the DTE Trainees of Bharathidasan University Jurisdiction’ was carried out.

5.14 STATEMENT OF THE PROBLEM

The problem of the present study is stated as A Study on Attitude Towards Mathematics Education, Teaching Profession and Academic Achievement in Mathematics Education among the DTE Trainees of DIETS of Bharathidasan University Jurisdiction.
5.15 DEFINITION OF KEY TERMS

5.15.1 Attitude

Thurstone (1949) defines, “An attitude is the degree of positive or negative aspect associated with psychological object. An individual with positive aspect or feeling with some psychological object is said to like that object or to have a favourable attitude towards the objects and vice versa.

5.15.2 Mathematics Education

Mathematics Education is defined as a course of study having both Mathematics content and methodology meant for Elementary Teacher Education.

5.15.3 Teaching Profession

Teaching profession refers to the one who is cultivating the children physically, mentally, socially and spiritually in a formal school system.

5.15.4 Academic Achievement

It refers to the test scores, scored by the DTE Trainees in Mathematics Education conducted by the investigated through achievement test in Mathematics Education.

5.15.5 DTE Trainees

Those who are undergoing Diploma in Teacher Education in District Institute of Education & Training locate in the Jurisdiction of Bharathidasan University, Tiruchirappalli, Tamil Nadu.
5.15.6 DIET

It is and institution meant for importing quality Pre Service Teacher Education to the prospective secondary Grade Teacher's and importing quality in-service training to the teachers of the district concerned.

5.16 METHODOLOGY

Survey method is adopted for the present study.

5.16.1 Sample for the Present Study

437 Trainees of second year of DTE of 7 DIETs in the jurisdiction of Bharathidasan University those who have attended, the class on the day of Data collection of each DIET, has been taken as the sample.

5.16.2 Classification of Variable Taken for the Study

It can be classified into two categories namely,

- Institutional variables
- Individual variables

DIETs, Management of the school and Type of School, can be taken as Institutional variables Group of study of the Trainees at +2 level, community, Annual Income of parents, locality of the living place, and the reason for joining the DTE course can be taken as the individual variables.

5.17 TOOLS USED

To study the problems, four tools were administered to the sample.

They are:
1. A proforma for collecting Bio-Data of DTE Trainees.

2. A scale to measure attitude towards the study of Mathematics Education developed by the investigator.

3. Teacher attitude inventory developed and validated by Ahluwalia.

4. Achievement test in Mathematics Education for 2nd year DTE trainees, developed by the investigator.

5.18 STATISTICAL TECHNIQUES USED

Mean, Standard Deviation, t test and F test were used to analysis the data.

5.19 FINDINGS OF THE PRESENT STUDY

* The calculated F value 2.565 is greater than the table value 2.11 for df (6,430) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Mathematics Education of DTE Trainees with respect to the variable Place of DIET is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Mathematics Education with respect to the variable Place of DIET.

* There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of Aduthurai DIET & Keelapaluvur DIET, between the DTE Trainees of Aduthurai DIET & Kurukathi DIET, between the DTE Trainees of Aduthurai DIET & Kumulur DIET, and also between the DTE Trainees of Aduthurai DIET.
and Pudukkottai DIET at 0.01 levels of significance. There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Aduthurai DIET & Mannargudi DIET, and also between the DTE Trainees of Aduthurai DIET & Mayanur DIET at 0.05 levels of significance. The DTE Trainees of Aduthurai DIET have more Attitude towards Mathematics Education than the DTE Trainees of Keelapaluvur, Kurukathi, Kumulur, and Pudukkottai DIET. The DTE Trainees of Aduthurai do not differ in their Attitude towards Mathematics Education with the DTE Trainees of Mannargudi, and Mayanur DIET.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Keelapaluvur DIET & Kurukathi DIET, between the DTE Trainees of Keelapaluvur DIET & Kumulur DIET, between the DTE Trainees of Keelapaluvur DIET & Mannargudi DIET, between the DTE Trainees of Keelapaluvur DIET & Mayanur DIET, and also between the DTE Trainees of Keelapaluvur DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of Keelapaluvur DIET do not differ in their Attitude towards Mathematics Education with the DTE Trainees of Kurukathi, Kumulur, Mannargudi, Mayanur, and Pudukkottai DIET.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Kurukathi DIET & Kumulur
DIET, between the DTE Trainees of Kurukathi DIET & Mannargudi DIET, between the DTE Trainees of Kurukathi DIET & Mayanur DIET, and also between the DTE Trainees of Kurukathi DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of Kurukathi DIET do not differ in their Attitude towards Mathematics Education with the DTE Trainees of Kumulur, Mannargudi, Mayanur, and Pudukkottai DIET.

There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of Kumulur DIET & Mannargudi DIET, and also between the DTE Trainees of Kumulur DIET & Mayanur DIET at 0.05 levels of significance. There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Kumulur DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of Kumulur DIET have more Attitude towards Mathematics Education than the DTE Trainees of Mannargudi, and Mayanur DIET. The DTE Trainees of Kumulur do not differ in their Attitude towards Mathematics Education with the DTE Trainees of Pudukkottai DIET.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Mannargudi DIET & Mayanur DIET, and also between the DTE Trainees of Mannargudi DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of
Mannargudi DIET do not differ in their Attitude towards Mathematics Education with the DTE Trainees of Mayanur, and Pudukkottai DIET.

The calculated F value 3.943 is greater than the table value 3.01 for df (2,434) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Mathematics Education of DTE Trainees with respect to the variable Type of Management at +2 level is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Mathematics Education with respect to the variable Type of Management at +2 level.

There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of Aided Schools & Govt. Schools at 0.01 levels of significance. There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Aided Schools & Private Schools at 0.05 levels of significance. The DTE Trainees who studied +2 in Aided Schools have more Attitude towards Mathematics Education than the DTE Trainees
of Govt. Schools. The DTE Trainees of Aided Schools do not differ in their Attitude towards Mathematics Education with the DTE Trainees who studied +2 in Private Schools.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees who studied +2 in Govt. Schools and Private Schools at 0.05 levels of significance. The DTE Trainees who studied +2 in Govt. Schools do not differ in their Attitude towards Mathematics Education with the DTE Trainees who studied +2 in Private Schools.

The calculated F value 2.161 is less than the table value 3.01 for df (2,434) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Mathematics Education of DTE Trainees with respect to the variable Type of School at +2 level is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Attitude towards Mathematics Education with respect to the variable Type of School at +2 level.

The Calculated F value 1.672 is less than the table value 2.62 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference between the mean attitude towards Mathematics education of DTE Trainees with respect to the
Group they studied in +2 is accepted. It is concluded that all the DTE Trainees do not differ in their Attitude towards Mathematics Education.

The calculated F value 3.479 is greater than the table value 3.39 for df (4,432) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Mathematics Education of DTE Trainees with respect to the variable Community of the Individual is rejected at 0.01 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Mathematics Education with respect to the variable Community of the Individual.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of BC Community & MBC Community, and also between the DTE Trainees of BC Community & SC Community at 0.05 levels of significance. There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of BC Community & FC Community, and also between the DTE Trainees of BC Community & ST Community at 0.01 levels of significance. The DTE Trainees of BC Community have more Attitude towards Mathematics Education than the DTE Trainees of FC and ST Community. The DTE Trainees of BC Community do not differ in their Attitude towards Mathematics Education with the DTE Trainees of MBC and SC Community.
There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of MBC Community & FC Community, and also between the DTE Trainees of MBC Community & ST Community at 0.01 levels of significance. There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of MBC Community and SC Community at 0.05 levels of significance. The DTE Trainees of MBC Community have more Attitude towards Mathematics Education than the DTE Trainees of FC and ST Community. The DTE Trainees of MBC Community do not differ in their Attitude towards Mathematics Education with the DTE Trainees of SC Community.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Forward Community & SC Community, and also between the DTE Trainees of Forward Community & ST Community at 0.05 levels of significance. The DTE Trainees of Forward Community do not differ in their Attitude towards Mathematics Education with the DTE Trainees of SC and ST Community.

There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of FC Community & ST Community at 0.05 levels of significance. The DTE Trainees of SC
Community have more Attitude towards Mathematics Education than the DTE Trainees of ST Community.

The calculated F value 4.612 is greater than the table value 3.82 for df (3,433) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference Attitude towards Mathematics Education of DTE Trainees with respect to the variable Parental Annual Income is rejected at 0.01 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Mathematics Education with respect to the variable Parental Annual Income.

There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees whose Parental Annual income is 1-5000 & 5001 - 10000, between the DTE Trainees whose Parental Annual income is 1-5000 & 10001 - 15001, and also between the DTE Trainees whose Parental Annual income is 1-5000 & 15001 - above at 0.01 levels of significance. The DTE Trainees whose Parental Annual Income is 1-5000 have more Attitude towards Mathematics Education than the DTE Trainees whose Parental Annual Income is 5001-10000 DTE Trainees whose Parental Annual Income is 10001-15000 and DTE Trainees whose Parental Annual Income is 15001-above.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees whose Parental Annual income is
5001-10000 & DTE Trainees whose Parental Annual Income is 10001 – 15000 and also between the DTE Trainees whose Parental Annual income is 5001-10000 & DTE Trainees whose Parental Annual Income is 15001 - above at 0.05 levels of significance. The DTE Trainees whose Parental Annual Income is 5001-10000 do not differ in their Attitude towards Mathematics Education with the DTE Trainees whose Parental Annual Income is 10001-15000, and DTE Trainees whose Parental Annual Income is 15001-above.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees whose Parental Annual Income is 10001-15000 & DTE Trainees whose Parental Annual Income is 15001-above at 0.01 levels of significance. The DTE Trainees whose Parental Annual Income is 10001-15000 do not differ in their Attitude towards Mathematics Education with the DTE Trainees whose Parental Annual Income is 15001-above.

The calculated F value 8.067 is greater than the table value 4.65 for df (2,434) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Mathematics Education of DTE Trainees with respect to the variable Locale (Corporation, Municipality, and Village) is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Mathematics Education with respect to
the variable Locale (Corporation, Municipality, and Village). DTE Trainees of Corporation locality has more attitude towards Mathematics Education than others.

There exists a significant difference in Attitude towards Mathematics Education between the DTE Trainees of Corporation area & Municipality area and also between the DTE Trainees of Corporation area & Village area at 0.01 levels of significance. The DTE Trainees of Corporation area has more Attitude towards Mathematics Education than the DTE Trainees of Municipality area and Village area.

There exists no significant difference in Attitude towards Mathematics Education between the DTE Trainees of Municipality area & Village area at 0.01 levels of significance. The DTE Trainees of Municipality area does not differ in their Attitude towards Mathematics Education with the DTE Trainees of Village area.

The calculated F value 1.335 is less than the table value 2.62 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Mathematics Education of DTE Trainees with respect to the variable Reason for joining the course is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Attitude towards Mathematics Education with respect to the variable Reason for joining the course.
• The calculated F value 1.249 is less than the table value 2.11 for df (6,430) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Place of DIET is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Attitude towards Teaching Profession with respect to the variable Place of DIET.

• The calculated F value 9.281 is greater than the table value 4.65 for df (2.434) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Type of Management at +2 level is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Teaching Profession with respect to the variable Type of Management at +2 level.

• There exists a significant difference in Attitude towards Teaching Profession between the DTE Trainees of Aided Schools & Govt. Schools at 0.01 levels of significance. There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of Aided Schools & Private Schools at 0.05 levels of significance. The DTE Trainees of Aided Schools have more Attitude towards Teaching Profession than the DTE Trainees of Govt. Schools.
The DTE Trainees of Aided Schools do not differ in their Attitude towards Teaching Profession with the DTE Trainees of Private Schools.

There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of Govt. Schools & Private Schools at 0.05 levels of significance. The DTE Trainees of Govt. Schools do not differ in their Attitude towards Teaching Profession with the DTE Trainees of Private Schools.

The calculated F value 1.032 is less than the table value 3.01 for df (2.434) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession among the DTE Trainees with respect to the variable Type of School at +2 level is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Attitude towards Teaching Profession with respect to the variable Type of School at +2 level.

The calculated F value 2.360 is less than the table value 2.62 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Group taken at +2 level is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Attitude towards
Teaching Profession with respect to the variable Group taken at +2 level.

The calculated F value 3.864 is greater than the table value 2.39 for df (4,432) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Community of the Individual is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Teaching Profession with respect to the variable Community of the Individual.

There exists a significant difference in Attitude towards Teaching Profession between the DTE Trainees of BC Community & MBC Community, between the DTE Trainees of BC Community & FC Community, and also between the DTE Trainees of BC Community & SC Community at 0.01 levels of significance. There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of BC Community & ST Community at 0.05 levels of significance. The DTE Trainees of BC Community have more Attitude towards Teaching Profession than the DTE Trainees of MBC, FC and SC Community. The DTE Trainees of BC Community do not differ in their Attitude towards Teaching Profession with the DTE Trainees of ST Community.
There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of MBC Community & FC Community, between the DTE Trainees of MBC Community & SC Community, and also between the DTE Trainees of MBC Community & ST Community at 0.05 levels of significance. The DTE Trainees of MBC Community do not differ in their Attitude towards Teaching Profession with the DTE Trainees of FC, SC and ST Community.

There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of FC Community & SC Community, and also between the DTE Trainees of FC Community & ST Community at 0.05 levels of significance. The DTE Trainees of FC Community do not differ in their Attitude towards Teaching Profession with the DTE Trainees of SC and ST Community.

There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of SC Community & ST Community at 0.05 levels of significance. The DTE Trainees of SC Community do not differ in their Attitude towards Teaching Profession with the DTE Trainees of ST Community.

The calculated F value 2.747 is greater than the table value 2.62 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Parental
Annual Income is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Teaching Profession with respect to the variable Parental Annual Income.

There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees whose Parental Annual income 1-5000 & DTE Trainees whose Parental Annual income is 5001-10000, between the DTE Trainees whose Parental Annual income is 1-5000 & DTE Trainees whose Parental Annual Income is 10001-15000, and also between the DTE Trainees whose Parental Annual income is 1-5000 & DTE Trainees whose Parental Annual Income is 15001-above at 0.05 levels of significance. The DTE Trainees whose Parental Annual Income is 1-5000 do not differ in their Attitude towards Teaching Profession with the DTE Trainees whose Parental Annual Income is 5001-10000, DTE Trainees Parental Annual Income is 10001-15000, and DTE Trainees Parental Annual Income is 15001-above.

There exists a significant difference in Attitude towards Teaching Profession between the DTE Trainees whose Parental Annual income is 5001-10000 & DTE Trainees whose Parental Annual Income is 10001-15000, and also between the DTE Trainees whose Parental Annual income is 5001-10000 & DTE Trainees whose Parental Annual Income
Income is 15001-above at 0.01 levels of significance. The DTE Trainees whose Parental Annual Income is 5001-10000 have more Attitude towards Teaching Profession than the DTE Trainees whose Parental Annual Income is 10001-15000 and 15001-above.

There exists a significant difference in Attitude towards Teaching Profession between the DTE Trainees whose Parental Annual income is 10001-15000 & DTE Trainees whose Parental Annual Income is 15001-above at 0.01 levels of significance. The DTE Trainees whose Parental Annual Income is 10001-15000 have more Attitude towards Teaching Profession than the DTE Trainees whose Parental Annual Income is 15001-above.

The calculated F value 8.822 is greater than the table value 4.66 for df (2,434) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Locale (Corporation, Municipality, and Village) is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Attitude towards Teaching Profession with respect to the variable Locale (Corporation, Municipality, and Village). The DTE Trainees of Corporation locality has more Attitude towards Teaching Profession than others.
There exists a significant difference in Attitude towards Teaching Profession between the DTE Trainees of Corporation area & Municipality area at 0.01 levels of significance. There exists no significant difference in Attitude towards Teaching Profession between the DTE Trainees of Corporation area & Village area at 0.05 levels of significance. The DTE Trainees of Corporation area has more Attitude towards Teaching Profession than the DTE Trainees of Municipality area. The DTE Trainees of Corporation area does not differ in their Attitude towards Teaching Profession with the DTE Trainees of Village area.

There exists a significant difference in Attitude towards Teaching Profession between the DTE Trainees of Municipality area & Village area at 0.01 levels of significance. The DTE Trainees of Municipality area has more Attitude towards Teaching Profession than the DTE Trainees of Village area.

The calculated F value 2.371 is less than the table value 2.63 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Attitude towards Teaching Profession of DTE Trainees with respect to the variable Reason for joining the course is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their
Attitude towards Teaching Profession with respect to the variable Reason for joining the course.

The calculated F value 2.826 is greater than the table value 2.11 for df (6,430) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education among the DTE Trainees with respect to the variable Place of DIET is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differs in their Achievement in Mathematics Education with respect to the variable Place of DIET.

There exists a significant difference in Achievement in Mathematics Education between the DTE Trainees of Aduthurai DIET & Keelapaluvur DIET, and also between the DTE Trainees of Aduthurai DIET & Kumulur DIET, at 0.01 levels of significance. There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Aduthurai DIET & Mayanur DIET, at 0.05 levels of significance. There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Aduthurai DIET & Mannargudi DIET, and also between the DTE Trainees of Aduthurai DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of Aduthurai DIET have more Achievement in Mathematics Education than the DTE Trainees of Kilapalur, Kumulur and Mayanur. The DTE Trainees of Aduthurai DIET
do not differ in their Achievement in Mathematics Education with the DTE Trainees of Kurukathi, Mannargudi and Pudukkottai DIET.

There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Keelapaluvur DIET & Kurukathi DIET, between the DTE Trainees of Keelapaluvur DIET & Kumulur DIET, between the DTE Trainees of Keelapaluvur DIET & Mayanur DIET, and also between the DTE Trainees of Keelapaluvur DIET & Pudukkottai DIET, at 0.05 levels of significance. There exists a significant difference in Achievement in Mathematics Education between the DTE Trainees of Keelapaluvur DIET & Mannargudi DIET, at 0.05 levels of significance. The DTE Trainees of Kilapalur DIET have more Achievement in Mathematics Education than the DTE Trainees of Mannargudi. The DTE Trainees of Kilapalur DIET do not differ in their Achievement in Mathematics Education with the DTE Trainees of Kurukathi, Kumulur, Mayanur, and Pudukkottai DIET.

There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Kurukathi DIET & Kumulur DIET, between the DTE Trainees of Kurukathi DIET & Mannargudi DIET, between the DTE Trainees of Kurukathi DIET & Mayanur DIET, and also between the DTE Trainees of Kurukathi DIET & Pudukkottai DIET, at 0.05 levels of significance. The DTE Trainees of Kurukathi DIET do not differ in their Achievement in Mathematics Education with
the DTE Trainees of Kumulur, Mannargudi, Mayanur, and Pudukkottai DIET.

There exists a significant difference in Achievement in Mathematics Education between the DTE Trainees of Kumulur DIET & Mannargudi DIET, at 0.01 levels of significance. There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Kumulur DIET & Mayanur DIET, and also between the DTE Trainees of Kumulur DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of Kumulur DIET have more Achievement in Mathematics Education than the DTE Trainees of Mannargudi. The DTE Trainees of Kumulur DIET do not differ in their Achievement in Mathematics Education with the DTE Trainees of Mayanur, and Pudukkottai DIET.

There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Mannargudi DIET & Mayanur DIET and also between the DTE Trainees of Mannargudi DIET & Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of Mannargudi DIET do not differ in their Achievement in Mathematics Education with the DTE Trainees of Mayanur, and Pudukkottai DIET.

There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Mayanur DIET and Pudukkottai DIET at 0.05 levels of significance. The DTE Trainees of
Mayanur DIET do not differ in their Achievement in Mathematics Education with the DTE Trainees of Pudukkottai DIET.

The calculated F value 3.785 is greater than the table value 3.01 for df (2,434) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education of DTE Trainees with respect to the variable Type of Management at +2 level is accepted at 0.01 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Achievement in Mathematics Education with respect to the Type of Management of school at +2 level.

There exists a significant difference in Achievement in Mathematics Education between the DTE Trainees of Aided Schools & Govt. Schools, and also between the DTE Trainees of Aided Schools & Private Schools at 0.01 levels of significance. The DTE Trainees of Aided Schools have more Achievement in Mathematics Education than the DTE Trainees of Govt. Schools, and Private Schools.

There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees of Govt. Schools and Private Schools at 0.05 levels of significance. The DTE Trainees of Govt. Schools do not differ in their Achievement in Mathematics Education with the DTE Trainees of Private Schools.
The calculated F value 0.987 is less than the table value 3.01 for df (2,434) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education of DTE Trainees with respect to the variable Type of School at +2 level is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Achievement in Mathematics Education with respect to the variable Type of School at +2 level.

The Calculated F value 0.775 is less than the table value 2.62 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference between the mean achievement scores of DTE Trainees with respect to the Group they studied in +2, is accepted. It is concluded that all the DTE Trainees are equal with respect to their achievement in Mathematics education.

The calculated F value 2.040 is less than the table value 2.39 for df (4,432) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education of DTE Trainees with respect to the variable Community of the Individual is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Achievement in Mathematics Education with respect to the variable Community of the Individual.
The calculated F value 8.669 is greater than the table value 3.83 for df (3,433) at 0.01 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education of DTE Trainees with respect to the variable Parental Annual Income is rejected at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees differ in their Achievement in Mathematics Education with respect to the variable Parental Annual Income.

There exists a significant difference in Achievement in Mathematics Education between the DTE Trainees whose Parental Annual income is 1-5000 & DTE Trainees whose Parental Annual income is 5001 - 10000, and also between the DTE Trainees whose Parental Annual income 1-5000 & DTE Trainees whose Parental Annual income is 15001 - above at 0.01 levels of significance. There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees whose Parental Annual income is 1-5000 & DTE Trainees whose Parental Annual income is 10001 - 15000 at 0.05 levels of significance. The DTE Trainees whose Parental Annual income is 1-5000 have more Achievement in Mathematics Education than the DTE Trainees whose Parental Annual Income is 5001 - 10000, and DTE Trainees whose Parental Annual Income is 15001 - above. The DTE Trainees whose Parental Annual Income is 1-5000 do not
differ in their Achievement in Mathematics Education with the DTE Trainees of 10001-15000.

* There exist a significant difference in Achievement in Mathematics Education between the DTE Trainees whose Parental Annual income is 5001-10000 & DTE Trainees whose Parental Annual Income is 10001 - 15000 at 0.01 levels of significance. There exists no significant difference in Achievement in Mathematics Education between the DTE Trainees whose Parental Annual income is 5001-10000 & DTE Trainees whose Parental Annual income is 5001-above at 0.05 levels of significance. The DTE Trainees whose Parental Annual Income is 5001 - 10000 have more Achievement in Mathematics Education than the DTE Trainees whose Parental Annual Income is 10001-15000. The DTE Trainees whose Parental Annual Income is 5001 - 10000 do not differ in their Achievement in Mathematics Education with the DTE Trainees whose Parental Annual Income is 15001 - above.

* There exists a significant difference in Achievement in Mathematics Education between the DTE Trainees whose Parental Annual income is 10001-15000 & DTE Trainees whose Parental Annual Income is 15001-above at 0.01 levels of significance. The DTE Trainees whose Parental Annual Income is 10001-15000 have more Achievement in Mathematics Education than the DTE Trainees whose Parental Annual Income is 15001 - above.
The calculated F value 1.582 is less than the table value 3.01 for df (2,434) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education of DTE Trainees with respect to the variable Locale (Corporation, Municipality, and Village) is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Achievement in Mathematics Education with respect to the variable Locale (Corporation, Municipality, and Village).

The calculated F value 1.446 is less than the table value 2.62 for df (3,433) at 0.05 level of significance. Hence the null hypothesis that there exists no significant difference in Achievement in Mathematics Education of DTE Trainees with respect to the variable Reason for joining the course is accepted at 0.05 level of significance. It is interpreted from the finding that the DTE Trainees do not differ in their Achievement in Mathematics Education with respect to the variable Reason for joining the course.

5.20 DISCUSSION

The present study was conducted to find out the level of, Attitude towards Mathematics Education, Teaching Profession, and Academic Achievement in Mathematics Education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to both Institutional Variables and Trainees Variables.
DTE Trainees differ in their Attitude towards Mathematics Education with respect to the variables Place of DIET, Type of Management, Community, Parental Annual Income and Locale. Urban have more attitude towards Teaching Profession. Similar results on locale were reported by Kolha (1985).

DTE Trainees do not differ in their Attitude towards Mathematics Education with respect to the variables Type of School, Group of Study at +2 level, and Reason for joining the course. The result of Group of study at +2, regarding the DTE Mathematics Education Curriculum is a worth mentioning. It shows that the present curriculum is bringing favourable Attitude towards Mathematics Education among the DTE Trainees whether they studied Mathematics at +2 or not.

DTE Trainees differ in their Attitude towards Teaching Profession with respect to the variables Type of Management, Community, Parental Annual Income and Locale. The urban has more attitudes towards teaching profession than the rural. Sing (2004) reported that there had been no significant difference in the attitude of urban and rural teachers towards teaching profession. Oluwatimilehin et al (2009) observed that location did not influence students’ attitude towards teaching profession.

DTE Trainees do not differ in their Attitude towards Teaching Profession with respect to the variables Place of DIET, Type of School, Group of Study at +2 level, and Reason for joining the course. The results
of reason for joining the course is a worth mentioning one regarding the DTE general curriculum. It shows the present general curriculum is equipping favourable attitude towards Teaching Profession among the DTE Trainees irrespective of their reason for joining the DTE course.

DTE Trainees differ in their Achievement in Mathematics Education with respect to the variables Place of DIET, Type of Management and Parental Annual Income. The present study shows lower the income higher the achievement in Mathematics education. This is contrary to the study done by Patel (1997) which showed that lower the economic level lower the achievement in Mathematics education.

DTE Trainees do not differ in their Achievement in Mathematics Education with respect to the variables Type of School, Group of Study at +2 level, Community, Locale and Reason for joining the course. Srinivasan (1999) found no significant difference between rural and urban students. But Ket-kar (1982) observed that urban had more academic achievement in Mathematics Education than rural. The result of Group of study at +2 is a worth mentioning one regarding the DTE Mathematics curriculum. It shows that the present Mathematics Education Curriculum is enriching mathematical aspects of the DTE Trainees whether they studied Mathematics at +2 or not. Thus one may conclude from the present study that the present DTE Mathematics Education Curriculum caters to the needs of all the DTE trainees irrespective of studying Mathematics or not.
5.21 IMPLICATIONS & RECOMMENDATIONS OF THE PRESENT STUDY

In the light of the findings of the present study, the following implications, and recommendations are made.

1. The present DTE Mathematics Education Curriculum may be continued.

2. The General Core papers promoting Attitude towards teaching profession may be continued.

3. DTE trainees from urban areas have more attitude towards Mathematics Education and Attitude towards Teaching Profession. This rural and urban divide should be eliminated. More awareness programmes on Mathematics Education and Teacher Education should be given to the Students of rural areas.

4. The DTE Trainees of Upper community has more attitude towards Mathematics Education and Teaching Profession. This community divide should be eradicated. Hence special drive on creating awareness on Mathematics Education and Teacher Education should be undertaken for the SC and ST students.

5. DTE Trainees differ in their Achievement in Mathematics Education with respect to the place of DIET. This indicates the individual differences among the Mathematics teacher educator since all DIETs are similar in their infrastructure. So training on content and
methodology should be imparted to the Mathematics teacher educators of DIETs.

5.22 LIMITATIONS OF THE PRESENT STUDY

1. The present study is limited to DTE Trainees of Bharathidasan University jurisdiction only.
2. Mathematics achievement alone was studied.
3. In the present study theoretical aspects alone considered under achievement.
4. Mathematics achievement was studied with respect to Attitude Towards Mathematics Education and Teaching Profession.
5. Certain variables viz., place of DIET, Type of Management of school at +2 level, Type of School at +2 level, Group studied in +2, Community, Parental Annual Income, Locale, and Reason for joining the course were alone considered in the present study.

5.23 SUGGESTIONS FOR FURTHER STUDY

In the light of the findings of the present study the following suggestions are made.

1. The present study may be carried out among the DTE Trainees in others parts of the State Tamil Nadu was studied.
2. The present study may be carried out among the BEd Trainees.
3. Similar study may be carried out in other subjects like Languages, Science, and Social Science also.
4. Correlation study may be carried out among the Academic Achievement in Mathematics education, Attitude towards Mathematics Education and Attitude towards Teaching Profession.

5. Other areas of Evaluation such as practicum and teaching competencies may be considered alone and in the combined form with theoretical aspects.

6. Mathematics achievement may be carried out with other variables like parental involvement, technology efficacy, interest, creativity, adjustment.

5.24 CONCLUSION

The present study was conducted to find out the level of Attitude towards Teaching Profession, Attitude towards Mathematics Education and Academic Achievement in mathematics education among the DTE Trainees of DIETs in the jurisdiction of Bharathidasan University with respect to both Institutional Variables and Trainees Variables.

DTE Trainees differ in their Attitude towards Mathematics Education with respect to the variables Place of DIET, Type of Management, Community, Parental Annual Income and Locale and do not differ in the variables, Type of School, Group of Study at +2 level, and Reason for joining the course. DTE trainees do not differ in their Attitude towards Mathematics Education with respect to the Group of study at +2. It shows that the present curriculum is bringing favourable Attitude towards
Mathematics Education among the DTE Trainees whether they studied mathematics at +2 or not.

DTE Trainees differ in their Attitude towards Teaching Profession with respect to the variable Type of Management, Community, Parental Annual Income and Locale and do not differ in the variables Place of DIET, Type of School, Group of Study at +2 level, and Reason for joining the course. The present study reveals that DTE trainees do not differ in their attitude towards teaching Profession irrespective of the reason for joining the course and hence The General Core papers promoting Attitude towards teaching profession may be continued.

DTE Trainees differ in their Achievement in Mathematics Education with respect to the variable Place of DIET, Type of Management & Parental Annual Income and do not differ in the variables Type of School, Group of Study at +2 level, Community, Locale and Reason for joining the course. The study evinces that DTE trainees do not differ in their Achievement in Mathematics Education whether they studied mathematics at +2 or not. It caters to the needs of all the DTE trainees irrespective of studying mathematics or not, and hence the present DTE Mathematics Education Curriculum may be continued. DTE Trainees differ in their Achievement in Mathematics Education with respect to the place of DIET. This indicates the individual differences among the mathematics teacher educator since all DIETs are similar in their infrastructure. So training on content and
methodology should be imparted to the mathematics teacher educators of DIETs.

DTE trainees from urban areas have more attitude towards mathematics Education and Attitude towards Teaching Profession and hence enriched awareness programmes on mathematics Education and Teacher Education should be given to the Students of rural areas. The DTE Trainees of Upper community has more attitudes towards Mathematics Education and Teaching Profession and hence special drive on creating awareness on mathematics Education and Teacher Education should be undertaken for the SC and ST students.