CHAPTER III
TOOL DESIGN AND RESEARCH METHODOLOGY

PART : A

TOOL DESIGN

3.00 INTRODUCTION

This chapter deals with the tools used and the description of the tools. The tools used to gather data to some extent decide the distinctive ways of describing and qualifying the data. Each tool is particularly appropriate for certain sources of data, yielding information of the kind and in the form that can be most effectively used.

In addition to the standardized psychological tests, the important data gathering devices in educational research are questionnaire, opinionnaires, observation, checklists, rating scales, score cards, scaled specimen, documents or content analysis, interviews etc.

3.01 TOOLS AND TECHNIQUES

Tools are the instruments which are employed as the means to gather new facts or to explore new fields. Without a powerful data gathering instrument, no reliable data can be collected. According to J.W. Best (1983), “Like the tools in a carpenter box each research tool is appropriate in a given situation to accomplish a particular purpose” (P.156). Appropriateness of the tools decides the effectiveness of the method of research.
3.02 DESCRIPTION OF THE TOOLS

**Tool : 1 Teaching Competency Rating Scale**

D.T.Ed. programme, Teaching practice is central to the entire programme. Subject-wise evaluation of teaching is needed. In the Tamil Nadu Government Gazette published by DTERT (Curriculum for Diploma in Teacher Education) eight dimensions such as lesson plan, motivation, teaching learning materials, blackboard work and illustrations, teaching learning activities, questioning, classroom management and closure of lesson are given as items for evaluating the teaching of trainees. But sub dimensions are not given. So the evaluator may not be aware of the sub dimensions to be evaluated under the eight major dimensions. So, for the sake of evaluation and to maintain accuracy the investigator prepared a “Teaching competency rating scale”.

**Rationale of the Tool**

Teaching is a universal activity. To teach effectively, one must possess considerable skill, knowledge, understanding, patience, care and commitment. These can be achieved by training. In short, we can say teaching competency is needed to teach effectively.

The Commonwealth Report (1974) explains teacher competence: “In order to be competent the teacher must have a knowledge of child development of the material to be taught and suitable methods. His skills must enable him to teach, advise, guide his pupils, community and culture with which he is involved, his attitudes should be positive without being aggressive so that his example is likely to be followed as he transmits explicitly and implicitly, the national aims and moral and social values”.

David G. Rayns (1969) in “Characteristics of Teachers” describes two types of teacher competencies. Teaching is complex and many sided, demanding a variety of
human traits and abilities. These may be grouped in two major categories. First, those involving the teacher’s mental abilities and skills, his understanding of psychological and educational principles, his knowledge of general and specific subject matter to be taught and second those qualities stemming from the teacher’s personality, his interests, attitudes and beliefs, his behaviour in working relationships with pupils and other individuals.

Based on the characteristics of teachers the investigator came to know that teaching competency depends on areas like teacher’s behaviour, subject matter, teaching method, communication (rapport), discipline, lesson plan, motivation, teaching learning materials, blackboard work and illustrations, teaching learning activities, classroom management, questioning, closure of lesson and follow up work.

To assess the competency of teachers, Baird (1978) says that “Rating scales seem to be the most appropriate instruments. They can be used to make estimates of performance value in a work context” (p.20). Hence in the present study, the Investigator used a five point teaching competency rating scale with eight major dimensions.

DESCRIPTION OF DIMENSIONS AND SUB DIMENSIONS

1. Lesson Plan

Lesson plan is the framework for teaching. Preparation of a lesson plan is essential before teaching. The lesson is to be planned in such a way so that students can understand the given unit very well. Teaching activities selected, ought to be relevant to the content or subject matter. The lesson plan should be organized to achieve the learning objectives. It is to be organized logically according to content and psychologically as per the need of the pupils.
2. **Motivation**

The teacher has to explore the entry behaviour of the students by linking the new knowledge with the previous knowledge of the students. There should be proper linkage between introduction and main parts. For motivating students, appropriate devices like questioning, examples, exhibits etc., could be used.

3. **Teaching Learning Materials**

To make teaching interesting and to achieve desired objectives, teaching aids are to be used effectively. The effective use of teaching aids makes the pupil active and attentive in the classroom. The teaching aids should be relevant to the teaching unit, suitable to the pupils’ level, properly displayed and appropriately handled.

4. **Blackboard Work and Illustrations**

The writing on the black board should be clear, visible, legible and distinctive. It is an essential skill for a successful teacher. The effectiveness of presentation depends upon the proper use of the blackboard. Illustrations are to be simple, interesting and relevant to the point being explained.

5. **Teaching Learning Activities**

A teaching unit includes various types of teaching activities so that the teacher can create an appropriate learning situation. Teaching activities are to be planned and organized according to the teaching unit. Teachers and students have to involve in the activities individually and in group. Reinforcement techniques and teacher-pupil interaction are essential. Activities provided should be clear continuous and relevant to the content. Continuous evaluation should also occur.
6. Questioning

The question answer teaching strategy is to be employed to encourage students’ participation in learning. Different level questions should be structured. Questions could be answered by memory or sensory description. Questions should be grammatically correct, unambiguous, precise and relevant to the content. Questions are to be delivered with appropriate speed, proper intonation and pitch allowing pause for thinking. Questions should cover even non volunteers.

7. Class Room Management

It refers to the cognitive rapport between pupils and teacher to involve in the teaching learning process. Motivation is the leading phase of the management of learning. Management reinforces the student’s learning behaviour. The teacher should arrange special assistance to less able students.

8. Closure of Lesson

Important points of teaching should be organized. The teacher has to summarize the portions taught. Pupils are to be able to relate new knowledge with previous knowledge. The teacher could ask adequate recapitulation questions. Assignments are to be given to the students to organize their learning experience in their own way.

PREPARATION OF THE DRAFT TOOL

Based on the eight dimensions of the evaluation procedure given in the D.T.E.R.T. curriculum, the investigator tried to prepare a draft tool in the form of statements. The tool consisted of eight major dimensions namely lesson plan, motivation, teaching learning materials, blackboard work and illustrations, teaching
learning activities, questioning, classroom management and closure of lesson. Each dimension was again divided into four sub dimensions.

### TABLE 3.01

**TEACHING COMPETENCY RATING SCALE**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>No. of Sub-dimensions</th>
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<tbody>
<tr>
<td>Lesson plan</td>
<td>4</td>
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<tr>
<td>Motivation</td>
<td>4</td>
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<tr>
<td>Teaching learning materials</td>
<td>4</td>
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<tr>
<td>Blackboard work and illustrations</td>
<td>4</td>
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<tr>
<td>Teaching learning activities</td>
<td>4</td>
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<tr>
<td>Questioning</td>
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<tr>
<td>Classroom management</td>
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<tr>
<td>Closure of lesson</td>
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</tbody>
</table>

Dimensions as well as the sub-dimensions to be evaluated with five options namely, unsatisfactory, satisfactory, good, very good, excellent. The scale is of self-rating type by the teachers.

### TOOL : 1

**TEACHING COMPETENCY RATING SCALE**

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Specification</th>
<th>Unsatisfactory</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Very good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lesson plan (the observer may refer to the lesson plan)</td>
<td>i. Lesson plan preparation</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td></td>
<td></td>
<td>ii Clarity, relevance to the content</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td>iii Application of fundamental Principles</td>
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<td></td>
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<td>iv. Logical organization according to content and psychological organization as per need of the pupil</td>
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<td>2.</td>
<td><strong>Motivation</strong></td>
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<td>i. Greeting, accepting</td>
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<td>ii. Linking with past experiences</td>
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<td></td>
<td>iii. Link between introduction and main parts properly formed</td>
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<td>iv. Use of appropriate devices like questioning, examples, exhibits etc.</td>
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<td>3</td>
<td><strong>Teaching learning materials</strong></td>
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<tr>
<td></td>
<td>i. Relevant</td>
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<td></td>
<td>ii. Appropriate to the pupil’s level</td>
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<td>iii. Properly displayed</td>
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<td></td>
<td>iv. Appropriately used or handled</td>
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<td>4</td>
<td><strong>Blackboard work and illustrations</strong></td>
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<tr>
<td></td>
<td>i. Writing on the blackboard clear and visible</td>
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<td></td>
<td>ii. Letters on the blackboard were legible and distinctive</td>
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<td></td>
<td>iii. Illustrations were simple and interesting</td>
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<td></td>
<td>iv. Relevant to the point being explained</td>
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<td>5</td>
<td><strong>Teaching learning activities</strong></td>
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<td></td>
<td>i. Activities done by the teacher, student, individual and group</td>
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<td>2</td>
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<tr>
<td></td>
<td>ii Reinforcement activity</td>
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<td></td>
<td>iii. Activities clear, continuous and relevant to the content</td>
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<td></td>
<td>iv. Continuous evaluation</td>
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<td>6</td>
<td><strong>Questioning</strong></td>
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<tr>
<td></td>
<td>i. Structuring questions at different levels</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td></td>
<td>ii. Questions are grammatically correct, unambiguous, precise and relevant to the content</td>
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<td>iii. Questions delivered with appropriate speed, with proper intonation and pitch allowing pause for thinking</td>
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<td></td>
<td>iv. Questions covering even non volunteers.</td>
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### Classroom management

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<tbody>
<tr>
<td>i. Teacher-pupil Interaction</td>
<td>1</td>
<td>2</td>
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<tr>
<td>ii. Reinforces student’s learning behaviour</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>iii. Arranges special assistance to less able students</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<tr>
<td>iv. Secure classroom climate</td>
<td>1</td>
<td>2</td>
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### Closure of Lesson

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</thead>
<tbody>
<tr>
<td>i. Points to be organized</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>ii. Application of new technique</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>iii. Asking adequate recapitulation questions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>iv. Apperception and follow-up-work</td>
<td>1</td>
<td>2</td>
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</table>

**SCORING PROCEDURE**

The teaching competency scale is a five-point rating scale. In the five-point rating scale the highest point 5 is given to the category ‘excellent’. The lowest point 1 is given to the category ‘unsatisfactory’.

**VALIDATION OF THE TOOL**

Anne Anastasi (1988) comments: “The validity concerns the degree to which the test actually measures what it purports to measure” (p.28). Validity refers to the appropriateness of the interpretation of the results of a test or evaluation instrument for a given group of individuals, and not to the instrument itself. (Gronlund and Linn, 1990, p.28)³ 

According to Gronlund and Linn (1990) ”It is known that every test is constructed with a purpose, that is, to provide measure of a defined variable truthfully. Then it is said to be valid”. (p.29)
CONTENT VALIDITY

Validity is the quality of a test or tool that enables it to measure what it is supposed to measure (Best, 1993, p.30). Content validity relates to the degree to which a test, samples the content area which is to be measured.

The draft tool was given to experienced D.I.E.T. faculties for their comments and suggestions. Some items were reformulated and refined on the basis of the suggestions given by them. The tool was also given to the guide for his comments. Some modifications were made on the basis of his comments. Thus the content validity of the tool was established.

RELIABILITY

To establish reliability of the tool, the inter observer reliability method was employed. The prepared rating scale was rated by the guide teacher and the investigator. The scores obtained for both of them were correlated by product moment correlation. The value was found to be 0.600.

TABLE 3.02

TEACHING COMPETENCY RATING SCALE - RELIABILITY

(Inter Observer Reliability)

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<tbody>
<tr>
<td>1.</td>
<td>115</td>
<td>118</td>
<td>35.</td>
<td>110</td>
<td>100</td>
<td>69.</td>
<td>106</td>
<td>105</td>
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<tr>
<td>2.</td>
<td>120</td>
<td>115</td>
<td>36.</td>
<td>82</td>
<td>88</td>
<td>70.</td>
<td>98</td>
<td>90</td>
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<td>3.</td>
<td>120</td>
<td>120</td>
<td>37.</td>
<td>90</td>
<td>90</td>
<td>71.</td>
<td>99</td>
<td>95</td>
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<td>4.</td>
<td>115</td>
<td>99</td>
<td>38.</td>
<td>98</td>
<td>98</td>
<td>72.</td>
<td>100</td>
<td>98</td>
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<td>5.</td>
<td>110</td>
<td>100</td>
<td>39.</td>
<td>100</td>
<td>110</td>
<td>73.</td>
<td>135</td>
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<td>6.</td>
<td>130</td>
<td>110</td>
<td>40.</td>
<td>125</td>
<td>120</td>
<td>74.</td>
<td>130</td>
<td>120</td>
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<td>7.</td>
<td>100</td>
<td>108</td>
<td>41.</td>
<td>120</td>
<td>115</td>
<td>75.</td>
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<td>8.</td>
<td>90</td>
<td>110</td>
<td>42.</td>
<td>119</td>
<td>110</td>
<td>76.</td>
<td>125</td>
<td>110</td>
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<td>9.</td>
<td>100</td>
<td>120</td>
<td>43.</td>
<td>117</td>
<td>102</td>
<td>77.</td>
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<tr>
<td>10.</td>
<td>120</td>
<td>118</td>
<td>44.</td>
<td>116</td>
<td>100</td>
<td>78.</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>
Incomplete statements are given below. Each statement has two sub statements. Circle the correct statement “a” or “b”.

1. A brief note should be prepared before teaching, so that
   
   a. teacher may be afraid of the inspector.
   
   b. teacher may be aware of what, how much and how it is to be taught.

2. The teacher should read the current affairs (events), because
   
   a. he/she can give the latest information to the students.
b. it will be very helpful for his/her personality development.

3. The teacher should know the aims of teaching, because
   a. he/she can help the students to achieve those aims.
   b. he/she can understand the aims of teaching.

4. Before starting teaching the teacher should examine the previous knowledge of the students, so that
   a. he/she can find out to what extent the students have understood the lesson.
   b. he/she can prevent students from shouting.

5. Teaching should be dependent on the age of students, because
   a. students of the same age group are present in a class.
   b. it is convenient for the teacher.

6. Students should be punctual in order to
   a. avoid punishment from the teacher.
   b. satisfy the school time-table.

7. Group division should be done on intelligence level in order to
   a. have skill-based teaching.
   b. cope with the student.

8. The teacher may use teaching learning materials,
   a. to draw the attention of the students.
   b. to waste time, while teaching.
9. Teaching materials handled by the teacher should be clear, attractive and visible since
   a. there is only one student in the class room.
   b. there are forty students in the class room.

10. Teaching methods are very essential to the teacher
   a. for systematic teaching.
   b. for imparting maximum details within minimum time period.

11. The teacher should have a thorough knowledge of the subject matter so that
   a. he may keep the students in his control.
   b. he may order (govern) the students.

12. It is better to teach the subject matter related to life so that
   a. subject matter may be helpful in life.
   b. it is difficult to understand the subject matter.

13. A blackboard is very essential for teaching because
   a. writings on the blackboard are very attractive.
   b. students can easily understand the subject matter.

14. The teacher’s handwriting should be beautiful so that
   a. students will imitate it.
   b. it is the mark of the student’s personality.

15. Maximum answers should be taken from the students so that
   a. students may be active in the class room.
b. students may not ask questions.

16. Questioning should be to the whole class
   a. to give chance to all the students.
   b. to remove the fear of the students.

17. Teachers should know how to manage the class room so that
   a. students may listen to the teachers.
   b. students may quarrel with each other.

18. Teachers will get feedback
   a. by evaluating two or three students.
   b. by evaluating the whole class.

19. Home-work given to the students should be related to the lesson
   a. to help them understand the lesson easily.
   b. to make homework simple or easy.

20. Home-work given to the students should be definite and free from confusion
    so that
    a. students need not waste time.
    b. students can concentrate on their work.

21. Teachers should develop the co-curricular activities of the students
   a. to develop a wholesome personality in the students.
   b. to play effectively.
22. All the students should involve themselves in mass cleaning in the school so that
   a. creating awareness among students of cleanliness is developed.
   b. unity is developed.

23. National festivals should be celebrated in the school
   a. to develop national integration.
   b. to participate in cultural programmes.

24. Home-work should be corrected daily so that
   a. students are afraid of studies.
   b. the student’s understanding skill may develop.

25. The exercise given at the end of each lesson is to
   a. give oral practice.
   b. study specific questions only.

26. Teachers should take active participation in games so that
   a. they may play well.
   b. they may develop liking for games among students.

27. Knowledge of child-psychology is essential for a teacher so that
   a. the teacher may be kind to the students.
   b. the teacher may understand the students.

28. Students should be taught in the mother tongue
   a. to help them understand the lesson easily.
   b. to develop the mother tongue.
29. Students want full freedom so that
   a. they can learn according to their interest.
   b. they can go anywhere freely.

30. The opinions of the students are to be considered so that
   a. students may prepare for future life.
   b. teachers may think less.

31. The behaviour of the teacher should be such that
   a. students are afraid of them.
   b. students may become disciplined.

32. One chooses teaching as one’s profession
   a. to earn money.
   b. to do social service.

33. The teacher should know the art of making complex lessons simple and easy to learn so that
   a. he knows the difficulties faced by the students.
   b. he is an artist.

34. The teacher should read newspapers and periodicals
   a. for getting the latest information on his subject.
   b. for he has spare money to spend.

35. Teachers fulfil the needs of the students
   a. to show affection.
36. A teacher should be a researcher so that
   a. he/she can guide his/her students in research.
   b. he/she may be known as a researcher.

37. Remedial teaching is
   a. for rectifying defects.
   b. for slow learners.

38. Examinations are conducted in schools
   a. to evaluate students.
   b. to give work load to the teacher.

39. Teacher-pupil relationship should be
   a. cordial.
   b. within certain limits.

40. Which development of students is supervised by teachers?
   a. all round development.
   b. intellectual development.

41. Skill-based lesson is
   a. necessary for the teacher.
   b. necessary for the students.

42. Teachers’ development is
   a. based on students.
b. based on politicians.

43. The teacher should render his/her service to the society
   a. to serve as a social worker.
   b. to help his/her family.

44. Teachers should be duty conscious because
   a. he/she is a model.
   b. he/she is not having any other job.

45. The teacher should always be fair and impartial since
   a. he/she is duty conscious.
   b. he/she teaches different levels of students.

46. The teacher is expected to be interested in continuous learning to
   a. improve the quality of education.
   b. have a prosperous future.

47. Students’ self-thinking is developed by
   a. story telling.
   b. sitting silently.

48. The teacher should utilize the library
   a. to know reference books.
   b. to guide students to use books.

49. In order to develop the physique of the students
   a. medical check-up is arranged in schools.
b. well planned physical education is given in schools.

50. The skill of evaluation is essential for the teacher so that

a. the teacher may know her effectiveness.

b. the teacher may evaluate effectively.

51. Guidance and counseling are given to the students

a. by the teacher.

b. by a doctor.

52. The teacher should be in the class

a. as a friend.

b. as a superior.

53. Who sets an example of good behaviour?

a. a politician.

b. a teacher.

54. A teacher should have mental health

a. to safeguard the mental health of students.

b. to be more content.

55. The reason for a teacher’s work load is

a. doing other work in addition to teaching.

b. student’s home work.

56. The requisite for keeping students’ attention is

a. seating in classrooms.
b. school things.

PREPARATION OF THE DRAFT TOOL

Based on the dimensions of Teaching Competency (T.A.T.B.) the investigator tried to prepare a draft tool in the form of statements. Statements covering professional information which will reflect the proper aptitude towards teaching were prepared.

ESTABLISHING VALIDITY

It is known that every test is constructed with a purpose, that is, to provide measure of a defined variable. Then it is said that the test is valid.

CONTENT VALIDITY

The draft tool was given to experienced Teacher Educators for their comments and suggestions. Some items were reformulated and refined on the basis of the suggestions given by them. The tool was also given to the guide for his comments. Some modifications were done in the statements on the basis of his comments. Thus the content validity of the tool was established.

ITEM VALIDITY

For finding the truthfulness of test items and the interconnectedness of different items in the same tool, item validity was calculated, as it is very essential for selecting items for the final tool. The tool containing 56 items was administered to 100 D.T.Ed. students in Kanyakumari District. The responses were evaluated using the key, and the answer scripts were arranged in the ascending order of the scores. The 27% of the sample scoring the higher scores and the 27% of the sample scoring the lower scores were selected and named as upper and lower groups respectively. The number of right responses for each of the 56 items in the lower and upper groups was tabulated. Then $\gamma$ was calculated by correlating the individual item score and the corresponding
components score. The correlation coefficient at 5% level of significance is 0.5 to 0.9, when the degree of freedom is 25 (Best, 1989). So, the items having 'γ' value between 0.5 and 0.9 were selected.

**TABLE 3.03**

\textbf{'γ' VALUE FOR THE ITEMS IN THE DRAFT TOOL}

<table>
<thead>
<tr>
<th>Item No</th>
<th>‘γ'Value</th>
<th>Item No</th>
<th>‘γ'Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.105</td>
<td>29</td>
<td>0.048</td>
</tr>
<tr>
<td>2</td>
<td>0.934 *</td>
<td>30</td>
<td>0.159</td>
</tr>
<tr>
<td>3</td>
<td>0.577 *</td>
<td>31</td>
<td>0.180</td>
</tr>
<tr>
<td>4</td>
<td>0.983 *</td>
<td>32</td>
<td>0.904 *</td>
</tr>
<tr>
<td>5</td>
<td>0.797 *</td>
<td>33</td>
<td>0.919 *</td>
</tr>
<tr>
<td>6</td>
<td>0.846 *</td>
<td>34</td>
<td>-0.016</td>
</tr>
<tr>
<td>7</td>
<td>0.823 *</td>
<td>35</td>
<td>-0.051</td>
</tr>
<tr>
<td>8</td>
<td>0.047</td>
<td>36</td>
<td>0.005</td>
</tr>
<tr>
<td>9</td>
<td>0.256</td>
<td>37</td>
<td>0.921 *</td>
</tr>
<tr>
<td>10</td>
<td>0.854 *</td>
<td>38</td>
<td>-0.072</td>
</tr>
<tr>
<td>11</td>
<td>-0.016</td>
<td>39</td>
<td>0.947 *</td>
</tr>
<tr>
<td>12</td>
<td>0.893 *</td>
<td>40</td>
<td>0.030</td>
</tr>
<tr>
<td>13</td>
<td>0.836 *</td>
<td>41</td>
<td>0.940 *</td>
</tr>
<tr>
<td>14</td>
<td>0.926 *</td>
<td>42</td>
<td>0.007</td>
</tr>
<tr>
<td>15</td>
<td>-0.006</td>
<td>43</td>
<td>0.171</td>
</tr>
<tr>
<td>16</td>
<td>-0.029</td>
<td>44</td>
<td>0.047</td>
</tr>
<tr>
<td>17</td>
<td>0.013</td>
<td>45</td>
<td>-0.028</td>
</tr>
<tr>
<td>18</td>
<td>0.851 *</td>
<td>46</td>
<td>0.817 *</td>
</tr>
<tr>
<td>19</td>
<td>0.062</td>
<td>47</td>
<td>0.074</td>
</tr>
<tr>
<td>20</td>
<td>0.878 *</td>
<td>48</td>
<td>0.877 *</td>
</tr>
<tr>
<td>21</td>
<td>0.062</td>
<td>49</td>
<td>-0.005</td>
</tr>
<tr>
<td>22</td>
<td>0.890 *</td>
<td>50</td>
<td>-0.035</td>
</tr>
<tr>
<td>23</td>
<td>0.058</td>
<td>51</td>
<td>0.084</td>
</tr>
<tr>
<td>24</td>
<td>0.138</td>
<td>52</td>
<td>0.067</td>
</tr>
<tr>
<td>25</td>
<td>0.981 *</td>
<td>53</td>
<td>0.042</td>
</tr>
</tbody>
</table>
RELIABILITY OF THE TOOL

Reliability is the degree of consistency that the instrument or procedure demonstrates. Whatever it is measuring, it does so consistently. Reliability is a necessary, but not sufficient condition for validity. That is, a test may be reliable and still not be valid (Best, 1989).

To establish reliability of the tool, the test-retest method and the split-half method were employed. The prepared tool was administered twice in an interval of two weeks to 100 D.T.Ed. students in Kanyakumari district of Tamil Nadu. The scores obtained in the two tests were correlated by product moment correlation and the split-half method. The value was found to be 0.504 and 0.507 respectively.

SCORING PROCEDURE

Positive and negative statements reflecting aptitude towards teaching (Professional information) were prepared. A positive statement was given value ‘1’ and a negative statement was given value ‘0’.

TOOL : 3

KUNDU INTROVERSION - EXTROVERSION INVENTORY

Block-A

Directions

For each of the items 1 to 11, you will find 4 possible answers, only one of which you will have to choose, the one that suits best in your case. Pick out the number
of your chosen answer and put a tick (√) mark in the appropriate box of the answer sheet against the corresponding question number.

1. Which one of the following four jobs would you like best as your profession?
   1) Laboratory research worker
   2) Political leader
   3) Military officer
   4) Officer in a factory or office

2. Which one of the following four types of pictures (Cinema) would you enjoy most?
   1) Picture of a battle
   2) Picture of a comedy
   3) Picture of a grim tragedy
   4) Picture of natural devastation

3. To which one of the following four types of persons do a majority of your friends belong?
   1) Persons who love to spend money very much
   2) Persons who love to spend money but adjust it according to their earning.
   3) Persons who love to save money but do spend where social prestige is involved.
   4) Persons who love to save money very much.

4. Which one of the following four types of work do you like most?
   1) Completely repetitive work
   2) Moderately repetitive work
   3) Slightly repetitive work
   4) Completely non- repetitive work

5. Which one of the following four types of persons do you like most to have with you in a social gathering?
   1) Those who would initiate the spirit of laughing and talking in the function.
2) Those who would not initiate but join others in laughing and talking to make the function lively.

3) Those who would laugh and talk only to keep friendly terms with others.

4) Those who would always prefer to be silent and observe others’ activities.

6. Which one of the following four types of persons do you like most to have as your friends?

   1) Persons who will never do anything without planning.
   2) Persons who will do planning on most of the occasions.
   3) Persons who will never like to plan before doing a thing.
   4) Persons who will do planning only on rare occasions.

7. Which one of the following four types of persons do you like most to have as your friends?

   1) Those who usually feel happy.
   2) Those who feel happy most of the time.
   3) Those who feel happy occasionally.
   4) Those who do not feel happy usually.

8. What will you do during a disturbing mass demonstration on a political issue?

   1) Go and take active part.
   2) Observe the situation without taking any active part.
   3) Enquire about the situation out of curiosity from a distance.
   4) Avoid the situation altogether.

9. How would you like to have a strong opponent and contest with him?

   1) Always prefer to have a strong opponent and contest with him.
   2) Sometimes prefer to have a strong opponent and contest with him.
   3) Usually prefer not to have a strong opponent and like to withdraw.
4) Practically do not prefer to have strong opponent and always like to withdraw.

10. To what extent does lack of careful planning make you feel disturbed?
   
   1) To a great extent
   2) To some extent
   3) To a little extent
   4) To practically no extent.

11. Which one of the following four types of work would you like most to do?
   
   1) Work which involves too much of delicacies (consideration).
   2) Work which involves delicacies but not too much of them.
   3) Work which preferably does not involve delicacies.
   4) Work which involves no delicacy at all.

**Block-B**

**Directions**

For each of the items 12 to 28, put a tick (√) mark in the proper box in the answer sheet against the corresponding item number, in the following manner:

If you like the activity to a great extent, put a tick (√) in box 1.

If you dislike the activity to a great extent, put a tick (√) in box 2.

If you like the activity to some extent, put a tick (√) in box 3.

If you dislike the activity to some extent, put a tick (√) in box 4.

If you are more or less indifferent towards the activity, put a tick (√) in box 5.

12 Always thinking about yourself.

13 Thinking much before accepting a new issue or an idea.

14 Starting a conversion with a stranger.

15 Sticking to a task in spite of your failures.
Standing others’ criticism calmly.
Being cautious while making decisions.
Having always a planned life.
Always keeping confidence in others.
Taking a leading part in social functions.
Liking the idea of having a limited number of friends and associates.
Always taking particular care of personal property (watches, clothes etc.)
Always approaching others to make friendship with them.
Always being cautious about possible misfortunes.
Preferring to think alone about a problem till it is solved.
Always liking to plan about future work.
Changing your work from one type to another.
Analyzing your thoughts and motives.

**Block-C**

**Directions**

In each of the items 29 to 42, you will find a question asking your preference over one of the two types of activities given therein. To indicate your answer for each of these items, put a tick (✓) mark in the proper box in the answer sheet, against the corresponding item number, in the following manner:

- If you agree with the preference given, put a tick (✓) in box 1.
- If you disagree with the preference given, put a tick (✓) in box 2.
- If you do not have any positive preference for either of the activities, put a tick (✓) in box 3.

While doing a work, do you pay more attention to details than to important aspects only?
30 Do you prefer more to work alone than in groups?
31 Do you find more interest in spending time with books than with people?
32 Do you want to derive knowledge more through books than through practical experience?
33 Do you usually avoid trouble rather than face it?
34 Do you prefer indoor games to outdoor games?
35 Do you like more to live in a lonely place rather than in a lively one?
36 Do you like more to take part in an argument than to remain silent?
37 Do you prefer more to leave a social gathering earlier rather than spend much time in it?
38 Do you feel that you present a case better through writing than through speaking?
39 In your routine actions of the day (walking, dressing, talking, etc.) do you like to finish them quickly rather than do them after careful consideration?
40 Do you easily remember your daily expenses in specific details rather than forget them mostly?
41 Do you prefer to take up the responsibility of directing others in doing a work rather than have somebody else to direct you?
42 Do you prefer to work on the last moment rather than start it earlier?

**Block-D**

**Directions**

For each of the items 43 to 56, you will find a statement representing some of your feeling or activity. On the answer sheet against the corresponding item number for these items, put a tick (✓) mark in the appropriate box, in the following manner:

- If it is true for you in most of the cases, put a tick (✓) in box 1.
- If it is not true for you in most of the cases, put a tick (✗) in box 2.
If it is true for you in some of the cases, put a tick (√) in box 3.

43 Checking and rechecking of letters before mailing.
44 Sitting alone for a long time without being tired.
45 Concealing your activities from others.
46 Feeling disturbed to a great extent after doing something wrong.
47 Calling persons who cross streets to avoid meeting you.
48 Making it a point to be outspoken while speaking.
49 Feeling hurt at others’ aggressive behavior.
50 Voluntarily giving explanations to what you have done.
51 Hesitating to ask for loans from others.
52 Delivering a written report.
53 Feeling disturbed when people watch at your activities.
54 Feeling it difficult to start a conversation with strangers.
55 Analyzing the feelings and motives of others.
56 Remaining alone during emotional stress.

Block-E

Directions

In each of the items 57 to 70, you will find questions on some of your activities. Read each item carefully and then put a tick (√) mark in the answer sheet, against the corresponding item number, in the following manner:

If it is applicable in your case, put a tick (√) in the box marked ‘Y’.

If it is not applicable in your case, put a tick (√) in the box marked ‘N’.

57 Are you always conscientious in your activities?
58 Can you tolerate a slight abnormality in health?
59 Can you work better when you get incentives through others’ praise?
60 Do you dislike writing about yourself even to very close friends?
61 Do you daydream very frequently?
62 Do you usually think about yourself?
63 Do you like to talk much at social gatherings?
64 Do you prefer to work alone rather than do the task with others?
65 Do you hesitate to make friendship with opposite sex?
66 Can you easily work against opposition?
67 Do you prefer to take the role of introducing others in a social gathering?
68 Are you usually cautious when you start a conversation with others?
69 Do you consider yourself to be greatly sentimental?
70 Do you usually control your temper?

The Inventory

The purpose of the inventory is to obtain reliable measures of introversion-extroversion dimensions of adult behavior or to use it for diagnosis, selection and career guidance. It is developed according to the Indian socio-cultural pattern. The inventory consists of 70 items with uneven number of response choices divided into 5 blocks. The number of items in each block and the corresponding number of response choices have been shown in Table 3.04

TABLE 3.04

NUMBER OF ITEMS AND RESPONSE CHOICES IN DIFFERENT BLOCKS

<table>
<thead>
<tr>
<th>Block</th>
<th>No. of items</th>
<th>No of response choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>E</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>
In order to minimize faking effect and also to reduce the nature and number of slanted responses, non-aggressive types of items have been included in the inventory. The mode of response in each block is different and directions for indicating answers for different blocks are given in test booklet.

With a view to checking the subjects who have a tendency to respond to the middle most category, from a pattern of systematic presentation, the arrangement of the response choices from 1 to 5 or 1 to 4 or 1 to 3 is not made according to the increasing or decreasing degree of extroversion. To avoid suspicions as to the real purpose of the inventory, the abbreviated name, K.I.E.I. (Kundu Introversion-Extraversion Inventory) has been given to it.

The rationale behind dividing the items into five blocks lies with the assumption that specific behaviour which indicates introversion or extroversion dimension of personality pattern may be approached for appraisal from manifold directions. Since these types of self-reporting inventories are often susceptible to impression management in the form of stereotyped response tendency, it is wise, in our situation, to change the mode of response, particularly since the number of items are large. So far as the contents of the items are concerned, the under noted features may be noticed in the different blocks.

Block A : Response choices are mostly some objective situations or activities.

Block B : Mostly introspective items.

Block C : Selection of one activity over the other but the activities are mostly of objective nature regarding oneself.

Block D : Mostly objective activities regarding oneself.

Block E : Mostly introspective forced choice items.
VALIDITY

Validity coefficients, in terms of the block-total correlation, are given in table 3.4. The inventory is also validated against the introversion-extroversion score of Eysenck Personality Inventory (E.P.I.). In E.P.I. the increasing order of score corresponds to the increased degree of extroversion. But in the K.I.E.I. the order is reverse, i.e. the decreasing order of score corresponds to the degree of extroversion. Therefore, the coefficient of correlation between K.I.E.I. score and the score of E.P.I. is expected to be negative to ensure the validity of K.I.E.I. The obtained coefficient of correlation, presented in Table 3.05 is negative but it is shown without any sign.

TABLE 3.05

VALIDITY COEFFICIENTS

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Coefficient of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block A</td>
<td>.41</td>
</tr>
<tr>
<td>Block B</td>
<td>.77</td>
</tr>
<tr>
<td>Block C</td>
<td>.42</td>
</tr>
<tr>
<td>Block D</td>
<td>.55</td>
</tr>
<tr>
<td>Block E</td>
<td>.49</td>
</tr>
<tr>
<td>E.P.I.</td>
<td>.47</td>
</tr>
</tbody>
</table>

RELIABILITY

The reliability coefficients are presented in Table 3.06. Block reliabilities as well as total test reliability have been determined by the split-half method applying the Spearman Brown formula. In addition to that, reliability has also been computed by Cronbach’s taking each block as a separate sub test.
### Table 3.06

<table>
<thead>
<tr>
<th>Block</th>
<th>Reliability Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1^{st}$ half vs $2^{nd}$ half</td>
</tr>
<tr>
<td>A</td>
<td>0.64</td>
</tr>
<tr>
<td>B</td>
<td>0.82</td>
</tr>
<tr>
<td>C</td>
<td>0.60</td>
</tr>
<tr>
<td>D</td>
<td>0.66</td>
</tr>
<tr>
<td>E</td>
<td>0.89</td>
</tr>
<tr>
<td>Whole test</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Whole test by Cronbach’s $\alpha$ 0.73

**Scoring**

The scoring key is prepared on the basis of judgement given by psychiatrists, psychoanalysts and psychologists. The general order of scoring is such that a high score indicates introversion i.e., a negative response is indicative of introversion. But some of the items have been framed in such a way that negative response in these items would indicate extroversion. Classification of items from this point of view is shown in Table 3.07.

### Table 3.07

**Classification of Items**

<table>
<thead>
<tr>
<th>Block</th>
<th>Negative answers showing introversion. Item Serial No.</th>
<th>Positive answers showing introversion. Item Serial No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1,4,6,10 and 11</td>
<td>2,3,5,7, 8 and 9</td>
</tr>
<tr>
<td>B</td>
<td>12,13,15,17,18,21,22,24,25,26 and 28</td>
<td>14,16,19,20,23 and 27</td>
</tr>
<tr>
<td>C</td>
<td>29,30,31,32,33,34,35,37,38,39 and 40</td>
<td>36,41 and 42</td>
</tr>
<tr>
<td>D</td>
<td>43,44,45,46,49,50,51,52,53,54,55 and 56</td>
<td>47 and 48</td>
</tr>
<tr>
<td>E</td>
<td>57,59,60,61,62,64,65,68 and 69</td>
<td>58,63,66,67 and 70</td>
</tr>
</tbody>
</table>
The different categories of responses are given different weights depending upon the degree of introversion-extroversion they measure. In table 3.08 the general principle of scoring is presented.

**TABLE 3.08**

**GENERAL PRINCIPLE OF SCORING**

<table>
<thead>
<tr>
<th>Block</th>
<th>Statements indicating introversion for positive responses</th>
<th>Statements indicating extroversion for positive responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Order of response</td>
<td>Order of score</td>
</tr>
<tr>
<td>A</td>
<td>1-2-3-4</td>
<td>4-3-2-1</td>
</tr>
<tr>
<td>B</td>
<td>1-3-5-4-2</td>
<td>5-4-3-2-1</td>
</tr>
<tr>
<td>C</td>
<td>1-3-2</td>
<td>3-2-1</td>
</tr>
<tr>
<td>D</td>
<td>1-3-2</td>
<td>3-2-1</td>
</tr>
<tr>
<td>E</td>
<td>Yes-No</td>
<td>2-1</td>
</tr>
</tbody>
</table>

**How to score**

The scoring procedure is simple and may be summarized in the following steps.

No scoring key is necessary as the design of the answer sheet has been made with a view to facilitating quick scoring without consulting any key or using any stencil.

Count the tick (✓) marks in each row in each block and enter the figure under the column T against the respective row.

Multiply these totals (Ts) in the following order:

Block A:
- First row total $\times 1$
- Second row total $\times 2$
- Third row total $\times 3$
- Fourth row total $\times 4$
Block B:  First row total   ×1
Second row total   ×2
Third row total   ×3
Fourth row total   ×4
Fifth row total   ×5

Block C  
}  First row total   ×1

Block D  Second row total   ×2
Third row total   ×3

Block E:  First row total   ×1
Second row total   ×2

1. Enter all the products under the column S against the respective row.

2. Find $\sum S$ in each block to obtain the block score and add together all the block scorers to obtain the total introversion-extroversion score.

3. If block scores are not required, all the entries in the column S may be added together to get the total introversion-extroversion score at a time.

4. Find out the value of C from the Table 3.8 and for a ready reference the position of the individual tested may be recorded in the scale given at the bottom of the answersheet and marked as C.

5. Check: Since none of the items are to be omitted in this inventory, a check may be done for omission and wrong counting by adding Ts in different blocks separately. T in each should be as follows:
$\Sigma T$ in Block A=11

$\Sigma T$ in Block B=17

$\Sigma T$ in Block C=14

$\Sigma T$ in Block D=14

$\Sigma T$ in Block E=14

**Meaning of the scores**

Raw scores of the K.I.E.I. have been transformed into C-scale values, the range of each scale-point may be found in Table 3.09. Just like the raw scores, low C-scale values indicate extroversion.

**TABLE 3.09**

RANGE OF RAW SCORES AGAINST CORRESPONDING C-SCALE POINTS

<table>
<thead>
<tr>
<th>C-scale point</th>
<th>Raw score range</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>75 and below</td>
<td>Extremely Extrovert</td>
</tr>
<tr>
<td>1</td>
<td>76-89</td>
<td>Grossly Extrovert</td>
</tr>
<tr>
<td>2</td>
<td>90-112</td>
<td>Moderately Extrovert</td>
</tr>
<tr>
<td>3</td>
<td>113-130</td>
<td>Slightly Extrovert</td>
</tr>
<tr>
<td>4</td>
<td>131-144</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>145-157</td>
<td>Ambivert</td>
</tr>
<tr>
<td>6</td>
<td>158-171</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>172-185</td>
<td>Slightly Introvert</td>
</tr>
<tr>
<td>8</td>
<td>186-199</td>
<td>Moderately Introvert</td>
</tr>
<tr>
<td>9</td>
<td>200-228</td>
<td>Grossly Introvert</td>
</tr>
<tr>
<td>10</td>
<td>229 and above</td>
<td>Extremely Introvert</td>
</tr>
</tbody>
</table>

C scores are distributed over eleven interval score points (assuming normal distribution) from 0 through 10 with the population mean fixed at 5 and standard deviation at 2. For this inventory, any individual within the limit 4-6 may be considered neither extrovert nor introvert. Any individual within the limit 0-3 may be
considered extrovert and any individual within the limit 7-10 may be considered introvert.

**TOOL : 4**

**SELF-CONCEPT INVENTORY**

**Tick your response correctly**

1. Do your friends come to you for advice? Obtain R.S.

   Always  Usually  Sometimes  Usually not  Never
   (   )   (   )   (   )   (   )   (   )

2. What do you think about your appearance?
   V. beautiful  Beautiful  Satisfactory  Not Satisfactory  Ugly
   (   )   (   )   (   )   (   )   (   )

3. How do you find yourself if doing physical work?
   Very strong  Strong  Average  Delicate  Very delicate
   (   )   (   )   (   )   (   )   (   )

4. How do you find your temperament?
   Always  Cheerful  Normal  Sometimes  Always cheerful
   unhappy  unhappy
   (   )   (   )   (   )   (   )   (   )

5. How do you like school studies?
   Very good  Good  Average  Not good  Not good at all
   (   )   (   )   (   )   (   )   (   )

6. Do you believe in religious customs and traditions?
   Very much  Usually  Normally  Sometimes  Never
   (   )   (   )   (   )   (   )   (   )

7. Do you involve yourself in criticizing others?
   Always  Mostly  Generally  Not usually  Never
   (   )   (   )   (   )   (   )   (   )

8. Do you express your ideas frankly in the presence of others?
   Always  Mostly  Normally  Sometimes  Never
   (   )   (   )   (   )   (   )   (   )
9. How do you like your complexion? Obtained R.S.

V. beautiful Beautiful Normal Not so beautiful Ugly
( ) ( ) ( ) ( ) ( )

10. Do you consider yourself a cheerful person?

Always Mostly Normally No Never
( ) ( ) ( ) ( ) ( )

11. Do you behave abnormally also?

Always Mostly Sometimes Seldom Never
( ) ( ) ( ) ( ) ( )

12. Do you consider yourself an experienced person?

Highly Usually Average Less Without any experience
( ) ( ) ( ) ( ) ( )

13. Do you think highly of your teachers?

Always Mostly Normally Usually not Never
( ) ( ) ( ) ( ) ( )

14. Do you think yourself a cool-tempered man?

V. much Usually Average Sometimes disturbed Much disturbed
( ) ( ) ( ) ( ) ( )

15. Are you regular in doing your home-work/ assignments?

Always Mostly Normally Sometimes Never
( ) ( ) ( ) ( ) ( )

16. Do you insult others?

Never Not often Usually Mostly Always
( ) ( ) ( ) ( ) ( )

17. Do you have difficulty in understanding anything when the teacher explains lessons in the class?

Never Usually Generally Often feel Usually feel difficulty difficulty
( ) ( ) ( ) ( ) ( )

18. Do you think that if you get an opportunity, you can discover something new?

Definitely Most Probably Doubtful Not at all probably
( ) ( ) ( ) ( ) ( )
19. Do you feel irritated if somebody finds fault with your work? Obtained R.S
   Never  Usually not  Sometimes  Usually  Always
   (      )      (      )      (      )      (      )      (      ) [    ]

20. How do you find your personality?
   Most  Attractive  Normal  Unattractive  Totally unattractive
   attractive    unattractive
   (      )      (      )      (      )      (      )      (      ) [    ]

21. How do you like the company of others?
   Always  Mostly  Usually  Sometimes  Never
good    good    good    dislike    like
   (      )      (      )      (      )      (      )      (      ) [    ]

22. How much are you satisfied with your weight?
   Fully satisfied  Usually satisfied  Not so satisfied  Unsatisfied
   (      )      (      )      (      )      (      ) [    ]

23. Do you feel irritated while you face petty difficulties?
   Never  Mostly not  Generally  Sometimes  Always
   (      )      (      )      (      )      (      ) [    ]

24. Are you a coward by nature?
   Not at all  Not much  Normal  Usually  Very much
   (      )      (      )      (      )      (      ) [    ]

25. Are you satisfied with the present position of your studies in class?
   Completely satisfied  Somewhat satisfied  Average  Somewhat dissatisfied  Totally dissatisfied
   (      )      (      )      (      )      (      ) [    ]

26. How do you like school examinations?
   Like  Mostly  Generally  Seldom  Never
   very much    like    like    like    like
   (      )      (      )      (      )      (      ) [    ]

27. Like  Mostly  Generally  Seldom  Never
   Very good  Good  Normal  Not good  Unsatisfactory
   (      )      (      )      (      )      (      ) [    ]
29. Are you curious to know the end while reading a novel or seeing a movie? Obtained R.S.

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Normally</th>
<th>No</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>(      )</td>
<td>(      )</td>
<td>(      )</td>
<td>(   )</td>
<td>(      )</td>
</tr>
</tbody>
</table>

30. How do you find your health?

<table>
<thead>
<tr>
<th>Very good</th>
<th>Good</th>
<th>Average</th>
<th>Weak</th>
<th>Feeble</th>
</tr>
</thead>
<tbody>
<tr>
<td>(         )</td>
<td>(     )</td>
<td>(     )</td>
<td>(     )</td>
<td>(     )</td>
</tr>
</tbody>
</table>

31. How is your attendance in the class?

<table>
<thead>
<tr>
<th>Always present</th>
<th>Usually present</th>
<th>Average</th>
<th>Generally absent</th>
<th>Usually absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(           )</td>
<td>(              )</td>
<td>(      )</td>
<td>(      )</td>
<td>(      )</td>
</tr>
</tbody>
</table>

32. Are you satisfied with your height?

<table>
<thead>
<tr>
<th>Fully satisfied</th>
<th>Satisfied</th>
<th>Normal</th>
<th>Somewhat dissatisfied</th>
<th>Fully dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>(             )</td>
<td>(         )</td>
<td>(     )</td>
<td>(         )</td>
<td>(     )</td>
</tr>
</tbody>
</table>

33. Do you try to get the first position in the class tests?

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Generally</th>
<th>Often not</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>(      )</td>
<td>(      )</td>
<td>(      )</td>
<td>(      )</td>
<td>(    )</td>
</tr>
</tbody>
</table>

34. Do you consider the merits and demerits of a task before doing it?

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Generally</th>
<th>Usually not</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>(      )</td>
<td>(      )</td>
<td>(      )</td>
<td>(      )</td>
<td>(    )</td>
</tr>
</tbody>
</table>

35. Where do you place yourself regarding speaking the truth?

<table>
<thead>
<tr>
<th>Always speak the truth</th>
<th>Usually speak the truth</th>
<th>Generally speak the truth</th>
<th>Usually hesitate to speak</th>
<th>Always have to resort to falsehood</th>
</tr>
</thead>
<tbody>
<tr>
<td>(                    )</td>
<td>(                      )</td>
<td>(                        )</td>
<td>(                        )</td>
<td>(        )</td>
</tr>
</tbody>
</table>

36. Where do you place yourself regarding obeying public rules e.g. rules pertaining to public places like road, park, railway station etc.?

<table>
<thead>
<tr>
<th>Always obey rules</th>
<th>Usually obey rules</th>
<th>Generally obey rules</th>
<th>Usually do not obey rules</th>
<th>Never care for rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>(                  )</td>
<td>(                  )</td>
<td>(                  )</td>
<td>(                        )</td>
<td>(                )</td>
</tr>
</tbody>
</table>

37. Are you more intelligent than your colleagues?

<table>
<thead>
<tr>
<th>Certainly</th>
<th>Usually</th>
<th>Generally</th>
<th>More or less</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>(         )</td>
<td>(      )</td>
<td>(      )</td>
<td>(            )</td>
<td>(        )</td>
</tr>
</tbody>
</table>
38. Do you take part in organizing it when your classmates go to picnic etc.? Obtained R.S.

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Generally</th>
<th>Usually not</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

39. Do you solve yourself the difficulties and problems of your studies?

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Generally</th>
<th>Usually can’t</th>
<th>Always seek the help of others</th>
</tr>
</thead>
<tbody>
<tr>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

40. How much do you attend to the artistic aspect of the photograph while seeing or shooting one?

<table>
<thead>
<tr>
<th>Give very much</th>
<th>Give much</th>
<th>Give average</th>
<th>Give some</th>
<th>Do not give any attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

41. What will you do if you are doing some important work and your friends ask you to accompany them for a walk?

- Will start immediately ( )
- Will go after thinking for sometime ( )
- Will keep silent ( )
- Will not go after thinking for sometime ( )
- Will refuse at once ( ) [ ]

42. While taking the examination you are not able to answer a question and a book on the same subject is lying near you; will you take the help of the book?

- Will never do such a thing ( )
- Do not have the courage to do though I want to ( )
- Generally do not do this ( )
- Will use the book if I get an opportunity ( )
- Will immediately use the book ( ) [ ]

43. If you get an opportunity to drink water in the house of the so called low caste persons, what will you do?

- Shall take water ( )
- Will take water after some consideration ( )
- Will care for cleanliness ( )
- Will take water but will tell nobody ( )
- Will not take water ( ) [ ]

44. Do you hesitate to mix with persons of the opposite sex?

- Do not hesitate at all ( )
Sometimes hesitate ( )
Generally do not hesitate ( )
Usually hesitate ( )
Always hesitate ( )

45. You are standing in the bus queue for a long time; when bus comes, the conductor takes some passengers and stops at your turn because there is no space in the bus; what will you do in this circumstance?
Will wait for the next bus ( )
Will request the conductor ( )
Will run and try to board the bus ( )
Will push the other passengers and try to board the bus ( )
Will shout ( )

46. What will you do if you come to know of immoral character of your friend?
Will completely break the friendship ( )
Will lessen the friendship ( )
Will continue the friendship but try to make him understand ( )
Will continue the friendship as it was ( )
Will strengthen the friendship ( )

You have to do four tasks (a) you have to call the doctor to attend to your sick brother (b) you have to do the preparation for going out the next day (c) you have to read a novel (d) your friend is going away, you have to go and see him. What will you do in the first place?
Will call the doctor to attend to the sick brother ( )
Will prepare for going out ( )
Will read the novel ( )
Will go to see the friend ( )
Will not do any of the above mentioned tasks ( )

47. Your friend gives you one thousand rupees to keep and when you count the cash it is eleven hundred; what will you do?
Will return one hundred rupees to the friend at once ( )
Will tell the friend at once ( )
Will return 1100 rupees at the time of while returning ( )
If the friend does not come to know, I will retain one hundred rupees if possible ( )
Retain one hundred rupees ( )
48. Do you like to do the work you are engaged in keeping in mind the wishes of others? Obtained R.S.

   Always do the work keeping in mind the wishes of others (   )
   Usually do the work keeping in mind the wishes of others (   )
   Generally do the work keeping in mind the wishes of others (   )
   Sometimes do not care for the wishes of others (   )
   Always do according to my own will (   ) [   ]

In order to measure the self-concept, the Self-concept Inventory by Dr. Raj Kumar Saraswat (1984) was administered to them.

This inventory provides six separate dimensions of self-concept. They are i) Physical, ii) Social, iii) Intellectual, iv) Moral, v) Educational and vi) Temperamental. The individual scores for these six dimensions can be computed and when added they give the total score. In the present study, only the total score has been considered for dividing the students into two groups, one with a relatively low self-concept and the other with a relatively high self-concept. The total score ranges from 48 to 240 and a score of 144 and above is taken to indicate a relatively high self-concept and a score less than 144 is taken to indicate a relatively low self-concept.

For each dimension of the self-concept there are eight items and totally there are 48 items in the Inventory. Each item is provided with five alternatives and the responses are in the test booklet itself.

The operational definitions for the six dimensions as given in the manual are as follows.

i Physical : Items revealing the individual’s view of his/her body, health, physical appearance and strength.
ii Social : Items exposing the individual’s sense of worth in social interactions/situations.
iii Intellectual : Items revealing the individual’s awareness of his/her intelligence and capacity of problem solving and judgment.
iv Moral : Items revealing the individual’s estimation of his/her moral worth, sense of right or wrong.

v Educational : Items exposing the individual’s view of oneself in relation to school, teachers and extra curricular activities.

vi Temperamental : Items revealing the individual’s awareness of his/her prevailing emotional state or predominance of a particular kind of emotional reaction.

The following is the scoring procedure. The respondent is provided with five alternatives for each item and these range from the most acceptable to the least acceptable description of one’s self-concept. The alternatives or responses are arranged in such a way that the scoring system for all the items will remain the same i.e. 5,4,3,2 and 1 for the five responses in that order whether the items are favourable or unfavourable. If a respondent puts the tick-mark for the first alternative, a score of ‘5’ is given for that item. If it is the second alternative, a score of ‘4’ is given. Similarly a score of ‘3’ is given if the third response is ticked, a score of ‘2’ is given if the fourth response is ticked and a score of ‘1’ is given if the fifth response is ticked. The summated score of all the forty eight items is the total self-concept score of the individual.

Table 3.10 indicates item numbers included in different self-concept dimensions.

**TABLE 3.10**

**SELF-CONCEPT DIMENSIONS ALONG WITH THEIR ITEM NUMBERS**

<table>
<thead>
<tr>
<th>Self-concept</th>
<th>Code No</th>
<th>Item numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>A</td>
<td>2,3,9,20,22,27,29,31</td>
</tr>
<tr>
<td>Social</td>
<td>B</td>
<td>1,8,21,37,40,43,46,48</td>
</tr>
<tr>
<td>Temperamental</td>
<td>C</td>
<td>4,10,14,16,19,23,24,28</td>
</tr>
<tr>
<td>Educational</td>
<td>D</td>
<td>5,13,15,17,25,26,30,32</td>
</tr>
<tr>
<td>Moral</td>
<td>E</td>
<td>6,34,35,41,42,44,45,47</td>
</tr>
<tr>
<td>Intellectual</td>
<td>F</td>
<td>7,11,12,18,33,36,38,39</td>
</tr>
</tbody>
</table>
VALIDITY

As many as twenty five psychologists were requested to validate the items and those items with not less than 80% agreement between them were retained. Thus it has high content validity, as well as construct validity (Saraswat, 1984)

RELIABILITY

The reliability was found to be 0.91 by test-retest method (Saraswat, 1984). It was found to be 0.89 by the same method in this study. Thus it has high reliability.

TABLE 3.11

TEST-RETEST RELIABILITY OF THE SELF-CONCEPT INVENTORY

<table>
<thead>
<tr>
<th>Code No</th>
<th>Self-concept</th>
<th>No. of Items</th>
<th>Reliability coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Physical</td>
<td>8</td>
<td>0.77</td>
</tr>
<tr>
<td>B</td>
<td>Social</td>
<td>8</td>
<td>0.83</td>
</tr>
<tr>
<td>C</td>
<td>Temperamental</td>
<td>8</td>
<td>0.79</td>
</tr>
<tr>
<td>D</td>
<td>Educational</td>
<td>8</td>
<td>0.88</td>
</tr>
<tr>
<td>E</td>
<td>Moral</td>
<td>8</td>
<td>0.67</td>
</tr>
<tr>
<td>F</td>
<td>Intellectual</td>
<td>8</td>
<td>0.79</td>
</tr>
<tr>
<td>Total self-concept</td>
<td>48</td>
<td><strong>0.91</strong></td>
<td></td>
</tr>
</tbody>
</table>

RELIABILITY COEFFICIENTS OF THE STANDARDIZED TOOLS

For establishing the reliability of the tools, such as Kundu Introversion-Extroversion Inventory and Self-concept, the test-retest method was employed. The tools were administered to a group of 100 students and the responses were got. Then the investigator again gave the same tools to the same set of students after a gap of two weeks. The correlation coefficient values were found to be 0.667 and 0.766 respectively.
TABLE 3.12

INTERPRETATION AND CLASSIFICATION OF RAW SCORES FOR ALL DIMENSIONS

<table>
<thead>
<tr>
<th>Self-concept</th>
<th>Interpretation (category)</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 to 40</td>
<td>High self-concept</td>
</tr>
<tr>
<td>25 to 32</td>
<td>Above average self-concept</td>
</tr>
<tr>
<td>17 to 24</td>
<td>Average self-concept</td>
</tr>
<tr>
<td>9 to 16</td>
<td>Below average self-concept</td>
</tr>
<tr>
<td>Upto 8</td>
<td>Low self-concept</td>
</tr>
</tbody>
</table>

TABLE 3.13

INTERPRETATION AND CLASSIFICATION OF RAW SCORES FOR TOTAL SELF-CONCEPT

<table>
<thead>
<tr>
<th>Raw scores</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>193 to 240</td>
<td>High self-concept</td>
</tr>
<tr>
<td>145 to 192</td>
<td>Above average self-concept</td>
</tr>
<tr>
<td>97 to 144</td>
<td>Average self-concept</td>
</tr>
<tr>
<td>49 to 96</td>
<td>Below average self-concept</td>
</tr>
<tr>
<td>1 to 48</td>
<td>Low self-concept</td>
</tr>
</tbody>
</table>

PART B

METHODOLOGY

3.03 INTRODUCTION

Methodology is the science of methods or principles of procedure. It is the science of proper modes and orders of procedure. It includes the description of the methods or techniques adopted and the tools and the techniques the researcher has used for collecting, organizing and analyzing data.
According to Mouly (1963), “Methodology is the aspect of revealing the procedure of the technique involved in the study and analysis of the problem” (p.28). For the study of any problem, the investigator has to collect data which has to be organized and analyzed and new conclusions have to be arrived at by employing appropriate methods, tools and techniques. The success of any research depends largely on the suitability of the method and the tools and the techniques used for the collection of data.

3.04 STATEMENT OF THE PROBLEM

TEACHING COMPETENCY OF D.T.Ed. STUDENTS IN RELATION TO CERTAIN PERSONALITY FACTORS

3.05 EXPLANATION OF KEY TERMS

Teaching Competency

Teaching competency means possessing a set of performances on which the teacher can draw as situations vary. The complexity of the teaching situations suggests that a teacher must continually adopt performances to situations.

D.T.Ed. Students

D.T.Ed. students are those doing Diploma in Teacher Education i.e. Two year elementary teacher training programme.

Personality factors

They are factors which are responsible for making an individual quite distinguishable in personality traits.
3.06 OBJECTIVES OF THE STUDY

SECTION – I

1) To study the teaching competency and its dimensions of D.T.Ed. students.

2) To study the teaching aptitude of D.T.Ed. students.

3) To study the personality type of D.T.Ed. students.

4) To study the self-concept and its dimensions of D.T.Ed. students.

5) To study the teaching competency and its dimensions of D.T.Ed. students in terms of the background factors - (a) sex (b) age (c) religion (d) community (e) locality (f) type of institute (g) nature of institute (h) +2 group (i) +2 marks (j) year of study (k) batch of study (l) residence and (m) mode of admission.

6) To study the teaching aptitude of D.T.Ed. students in terms of the background factors.

7) To study the personality type of D.T.Ed. students in terms of the background factors.

8) To study the self-concept and its dimensions of D.T.Ed. students in terms of the background factors - (a) sex (b) age (c) religion (d) community (e) locality (f) type of institute (g) nature of institute (h) +2 group (i) +2 marks (j) year of study (k) batch of study (l) residence and (m) mode of admission.

SECTION II

9) To find out the significant difference, if any, in teaching competency and its dimensions of D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.
10) To find out the significant difference, if any, in the teaching aptitude of D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

11) To find out the significant difference, if any, in the personality types of D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

12) To find out the significant difference, if any, in self-concept and its dimensions of D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

SECTION III

13) To find out the significant difference, if any, in teaching competency and its dimensions among D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.

14) To find out the significant difference, if any, in the teaching aptitude of D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.

15) To find out the significant difference, if any, in the personality type of D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.
16) To find out the significant difference, if any, in self-concept and its dimensions among D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.

SECTION IV

17) To find out whether there is any significant relationship between teaching aptitude and teaching competency in D.T.Ed. students.

18) To find out whether there is any significant relationship between teaching competency and personality type in D.T.Ed. students.

19) To find out whether there is any significant relationship between teaching competency and self-concept in D.T.Ed. students.

20) To find out whether there is any significant relationship between teaching aptitude and personality type in D.T.Ed. students.

21) To find out whether there is any significant relationship between teaching aptitude and self-concept in D.T.Ed. students.

22) To find out whether there is any significant relationship between personality type and self-concept in D.T.Ed. students.

23) To find out whether there is any significant relationship between teaching competency and teaching aptitude in D.T.Ed. students in terms of the background factors.

24) To find out whether there is any significant relationship between teaching competency and personality type in D.T.Ed. students in terms of the background factors.
25) To find out whether there is any significant relationship between teaching competency and self-concept in D.T.Ed. students in terms of the background factors.

26) To find out whether there is any significant relationship between teaching aptitude and personality type in D.T.Ed. students in terms of the background factors.

27) To find out whether there is any significant relationship between teaching aptitude and self-concept in D.T.Ed. students in terms of the background factors.

28) To find out whether there is any significant relationship between personality type and self-concept in D.T.Ed. students in terms of the background factors.

29) To find out whether there is any significant influence of teaching aptitude, personality type and self-concept on the teaching competency of D.T.Ed. students.

30) To find out whether there is any significant influence of teaching aptitude, personality type and self-concept on the teaching competency of male D.T.Ed. students.

31) To find out whether there is any significant influence of teaching aptitude, personality type and self-concept on the teaching competency of female D.T.Ed. students.

32) To find out whether there is any significant influence of teaching aptitude, personality type and self-concept on the teaching competency of rural D.T.Ed. students.
33) To find out whether there is any significant influence of teaching aptitude, personality type and self-concept on the teaching competency of urban D.T.Ed. students.

3.07 HYPOTHESES

SECTION I

1) Teaching competency and its dimensions in D.T.Ed. students are moderate.

2) Teaching aptitude in D.T.Ed. students is average.

3) Most of the D.T.Ed. students are ambivert.

4) Self-concept and its dimensions in D.T.Ed. students are average.

5) Teaching competency and its dimensions in D.T.Ed. students in terms of (a) sex (b) age (c) religion (d) community (e) locality (f) type of institute (g) nature of institute (h) +2 group (i) +2 marks (j) year of study (k) batch of study (l) residence and (m) mode of admission are moderate.

6) Teaching aptitude of the D.T.Ed. students in terms of the background factors is average.

7) Most of the D.T.Ed. students are ambivert in terms of the background factors.

8) Self-concept and its dimensions in D.T.Ed. students in terms of (a) sex (b) age (c) religion (d) community (e) locality (f) type of institute (g) nature of institute (h) +2 group (i) +2 marks (j) year of study (k) batch of study (l) residence and (m) mode of admission are average.

SECTION II

9) There is no significant difference in teaching competency and its dimensions in D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type
of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

10) There is no significant difference in the teaching aptitude of D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

11) There is no significant difference in the personality type of D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

12) There is no significant difference in self-concept and its dimensions in D.T.Ed. students in terms of the background factors - (a) sex (b) locality (c) type of institute (d) year of study (f) batch of study (f) residence and (g) mode of admission.

**SECTION III**

13) There is no significant difference in teaching competency and its dimension among D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.

14) There is no significant difference in teaching aptitude among D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.

15) There is no significant difference in personality type among D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.
16) There is no significant difference in self-concept and its dimensions among D.T.Ed. students in terms of the background factors - (a) age (b) religion (c) community (d) nature of institute (e) +2 group and (f) +2 marks.

SECTION IV

17) There is no significant relationship between teaching competency and teaching aptitude in D.T.Ed. students.

18) There is no significant relationship between teaching competency and personality type in D.T.Ed. students.

19) There is no significant relationship between teaching competency and self-concept in D.T.Ed. students.

20) There is no significant relationship between teaching aptitude and personality type in D.T.Ed. students.

21) There is no significant relationship between teaching aptitude and self-concept in D.T.Ed. students.

22) There is no significant relationship between personality type and self-concept in D.T.Ed. students.

23) There is no significant relationship between teaching competency and teaching aptitude in D.T.Ed. students in terms of the background factors.

24) There is no significant relationship between teaching competency and personality type in D.T.Ed. students in terms of the background factors.

25) There is no significant relationship between teaching competency and self-concept in D.T.Ed. students in terms of the background factors.
26) There is no significant relationship between teaching aptitude and personality type in D.T.Ed. students in terms of the background factors.

27) There is no significant relationship between teaching aptitude and self-concept in D.T.Ed. students in terms of the background factors.

28) There is no significant relationship between personality type and self-concept in D.T.Ed. students in terms of the background factors.

29) There is no significant influence of teaching aptitude, personality type and self-concept on the teaching competency of D.T.Ed. students.

30) There is no significant influence of teaching aptitude, personality type and self-concept on the teaching competency of male D.T.Ed. students.

31) There is no significant influence of teaching aptitude, personality type and self-concept on the teaching competency of female D.T.Ed. students.

32) There is no significant influence of teaching aptitude, personality type and self-concept on the teaching competency of rural D.T.Ed. students.

33) There is no significant influence of teaching aptitude, personality type and self-concept on the teaching competency of urban D.T.Ed. students.

3.08 METHOD SELECTED FOR THE STUDY

The method adopted for the present study was determined by considering the nature of the problem, the kind of data required for its solution and the objectives of the study. The purpose of the study is to find out the level of Teaching Competency, Teaching Aptitude, Personality Types and Self-Concept of the D.T.Ed. students in Kanyakumari, Tirunelveli and Tuticorin Districts. They can be gathered by employing
the survey method to achieve the purpose of the study. So, the investigator adopted the survey method for the study.

3.09 POPULATION

The population for the investigation comprises the D.T.Ed. students studying in the D.I.E.T.’s and T.T.I.’s of Kanyakumari, Tirunelveli and Tuticorin districts of Tamil Nadu.

3.10 SAMPLE SELECTED

The investigator selected a sample of 300 D.T.Ed. students studying in Kanyakumari, Tirunelveli and Tuticorin districts of Tamil Nadu by the stratified random sampling technique.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the Institute</th>
<th>District</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C.S.I.V.V. Teacher Training Institute, Irenepuram</td>
<td>Kanyakumari</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>D.V.D. Teacher Training Institute, Kottar</td>
<td>Kanyakumari</td>
<td>55</td>
</tr>
<tr>
<td>3</td>
<td>D.I.E.T, Theroor</td>
<td>Kanyakumari</td>
<td>46</td>
</tr>
<tr>
<td>4</td>
<td>Ooliyasthanam Teacher Training Institute, Tirunelveli</td>
<td>Tirunelveli</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>D.I.E.T, Munanjipatti</td>
<td>Tirunelveli</td>
<td>52</td>
</tr>
<tr>
<td>6</td>
<td>Baba Teacher Training Institute, Kayathar, Tuticorin</td>
<td>Tuticorin</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>300</strong></td>
</tr>
<tr>
<td>Sl.No.</td>
<td>Background Variables</td>
<td>Categories</td>
<td>No. of Respondents</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>1</td>
<td>Sex</td>
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<tr>
<td></td>
<td></td>
<td>Female</td>
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<tr>
<td>2</td>
<td>Age</td>
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<td></td>
<td></td>
<td>21-30</td>
<td>81</td>
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<tr>
<td></td>
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<td>31-40</td>
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<td>3</td>
<td>Religion</td>
<td>Hindu</td>
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<td>Community</td>
<td>FC</td>
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<td>BC/MBC</td>
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<td>SC/ST</td>
<td>54</td>
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<tr>
<td>5</td>
<td>Locality</td>
<td>Rural</td>
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<td>Urban</td>
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<td>6</td>
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<td></td>
<td>Private</td>
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<td>Girls’</td>
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<td></td>
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<td>Co-Ed</td>
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<td>8</td>
<td>+2 group of study</td>
<td>Science</td>
<td>159</td>
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<td></td>
<td></td>
<td>Arts</td>
<td>75</td>
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<tr>
<td></td>
<td></td>
<td>Vocational</td>
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</tr>
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<td>Below 800</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Between 800-999</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 and Above</td>
<td>102</td>
</tr>
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<td>10</td>
<td>Year of study</td>
<td>I Year</td>
<td>218</td>
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<td></td>
<td></td>
<td>II Year</td>
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</tr>
<tr>
<td>11</td>
<td>Batch of study</td>
<td>Fresh</td>
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<tr>
<td></td>
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<td>Special</td>
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<td>12</td>
<td>Residence</td>
<td>Hosteler</td>
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<td></td>
<td>Day-scholar</td>
<td>159</td>
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<tr>
<td>13</td>
<td>Mode of admission</td>
<td>Government quota</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Management quota</td>
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</tr>
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</table>
3.11 TOOLS USED IN THE PRESENT STUDY

The investigator used four tools to collect data which are given in the following table:

**TABLE 3.16**

TOOLS USED TO COLLECT DATA

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Research Tools</th>
<th>Prepared by</th>
<th>No. of items</th>
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<tbody>
<tr>
<td>1</td>
<td>Teaching Competency Rating Scale</td>
<td>Dr. G. Porgio and P.M. Kala Vincila</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Teaching Aptitude Test</td>
<td>Dr. G. Porgio and P.M. Kala Vincila</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Kundu Introversion - Extroversion Inventory</td>
<td>Dr. Ramnathu Kundu</td>
<td>70</td>
</tr>
<tr>
<td>4</td>
<td>Self-concept Inventory</td>
<td>Dr. Raja Kumar Saraswat</td>
<td>48</td>
</tr>
</tbody>
</table>

3.12 ADMINISTRATION OF THE TOOLS AND COLLECTION OF DATA

For administration of the tools, the investigator visited 6 institutes as per the schedule fixed. Permission for observing the teaching of the teacher trainees and administering the tools was obtained from the Principals of the Institutes.

Before administering the tools, the investigator explained the purpose of her study. Teaching competency was evaluated by the teaching competency rating scale. The respondents were given a copy of the tools and the investigator explained the directions clearly. The response sheets were collected from the respondents after marking the responses. The analysis has been made depending on the facts supplied by them.
3.13 STATISTICAL TECHNIQUES USED

1. Percentage Analysis
2. ‘t’ test
3. ANOVA
4. Product moment correlation
5. Inter correlation analysis
6. Multiple correlation analysis

3.14 LIMITATIONS

1. The study is restricted only to the three districts of Kanyakumari, Tirunelveli and Tuticorin of Tamil Nadu
2. The teaching competency of only D.T.Ed. students studying in D.I.E.T.s and T.T.I.s is studied.