

## **CHAPTER - III**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter presents a clear view about the methodology employed in order to achieve the objectives and to verify the hypotheses of the study. The research methodology refers to the decisions taken within the framework of specific determinants unique to the Research study (De Beer 1999). Research, according to the Longmans English dictionary (1979) simply means an investigation, which was undertaken in order to discover new facts and knowledge or to get additional information. By researching one tries to get answers to solve a particular problem. Methodology on the other hand is a body of methods, rules and procedures employed by those carrying out an investigation. It refers to the way information is found or the something is done. It involves all things crucial to a piece of research being carried out effectively, this includes the philosophical approaches, theoretical models, rules for creating hypotheses and operationalising concepts, rules about designing and conducting meaningful experiments and procedure to collect and analyze the data and guidelines for writing results. Therefore research Methodology is an application of scientific procedures to get answers to particular problem or puzzle (Akakandelwa, 2000).

According to Burns and Grove (2003), research design is “a blue print for conducting a study with maximum control over factors that may interfere with the validity of the findings”. Parahoo (1997) describes a research design as a “plan that describes how when and where data are to be collected and analysed”. Polit et al. (2001) defines a research design as “the researcher’s over all view for answering the research question or testing the hypothesis. According to Polit and Hungler (1995) research designs vary with regard to how much structure the researcher imposes on the research situation and how much flexibility is allowed once the study is under way. A research design refers to the planning of any research from the first to the last step (Bless and Achola 1988). It is the

programme designed to guide the researcher in data collection, data analysis and interpretation of the collected data.

### 3.2 VARIABLES

The variables included in the present investigation are:

- ❖ Social capital and
- ❖ Knowledge sharing
- ❖ Socio-emotional competence and
- ❖ Abilities of student teachers

### 3.3 OPERATIONAL DEFINITION

The following are the operational definition for the chosen independent and dependent variables central to this study which ascribes concise detailed description of a measure to a concept that eliminates ambiguity ensures comprehensible knowledge of the terminology which is the only way to ensure consistent data collection.

#### 1. Socio-emotional competence

Socio - emotional competence refers to the student teachers ability to experience, regulate and express emotions, to form to close and secure interpersonal relationships, and to explore his or her environment and learn, all in the context of family, community and culture. The components are,

- **Self Awareness** – The ability to accurately recognize one’s emotions and thoughts, their influence on behaviour includes accurately assessing one’s strength and limitations, possessing a well grounded sense of confidence and optimism.
- **Self Management** – The ability to regulate one’s emotions, thoughts and behaviours effectively in different situations. This includes managing stress, controlling impulses, motivating oneself and, working towards achieving personal and academic goals.
- **Social Awareness** - The ability to take the perspective of and empathizes with others from diverse backgrounds and cultures to understand social and ethical norms for behaviour.

- **Relationship Skills** – The ability to establish and maintain healthy and rewarding relationships with diverse individuals and groups. This includes communicating, learning, listening, acting, cooperating, resisting inappropriate social pressure, negotiating conflicts, constructivism and seeking and offering help when needed.

## 2. Abilities of student teachers

Student teachers abilities refers to the, student teachers abilities such as

- Classroom management – the ability to manage the classroom discipline
- Teaching Skills – the ability to impart knowledge
- Teaching Goals: The ultimate goal of teaching is to promote learning.

## 3. Knowledge sharing

Knowledge Sharing refers to social action involving the collective behaviour of a group of people includes the provision of task related knowledge to others as well as reception of such knowledge from others shaping interactions among a group of people. In view of learning environment, social interaction, communication flow, awareness, attitude, degrees of enjoyment in helping others and web technology factors.

## 4. Social capital

Social capital has been demonstrated to be able to motivate individuals to contribute their knowledge to social communications (Wasko and Faroj 2005). The Components are,

- **Structural Capital** – is the level of a group network which influence the knowledge sharing.
- **Cognitive Capital** – is the expertise and tenure of individuals' shared understanding involved in a group, influence on the intra-group knowledge sharing
- **Relational Capital** – encompassing individuals trust and commitment to a group make individuals treat one in a positive mode and emotionally support one another

### **3.3 MAJOR OBJECTIVES OF THE STUDY**

After considering the theoretical perspectives and review of the related literature, the following objectives were formulated.

1. To select appropriate tools to measure socio-emotional competence, Abilities of student teachers and to develop tools to measure social capital and knowledge sharing.
2. To design module based on social capital and knowledge sharing suitable for student teachers.
3. To assess the impact of the designed social capital and knowledge sharing intervention on socio-emotional competence and abilities of student teachers.
4. To investigate differences in socio-emotional competence and abilities with respect to marital status of student teachers.

### **3.4 HYPOTHESES**

Keeping the above objectives in view, the following hypotheses were formulated.

1. There will be no significant difference between Control and Experimental group students in the pre-test scores of
  - a. Socio-emotional competence
  - b. Abilities of student teachers
2. There will be significant difference between Control and Experimental group students in the post-test scores of
  - a. Socio-emotional competence
  - b. Abilities of student teachers

3. There will be significant difference between pre-test and post-test scores of Experimental group students in
  - a. Socio-emotional competence
  - b. Abilities of student teachers
4. There will be significant difference between pre-test and post-test scores of control group students in
  - a. Socio-emotional competence
  - b. Abilities of student teachers
5. There will be significant difference between Control and Experimental group students in the gain scores of
  - a. Socio-emotional competence
  - b. Abilities of student teachers
6. There will be significant difference between married and unmarried student teachers in the gain scores of
  - a. Socio-emotional competence
  - b. Abilities of student teachers

### **3.5 RESEARCH DESIGN**

In the present study, Quasi-Experimental Design method is employed to describe and interpret the social capital and knowledge sharing with other selected variables as Socio-emotional competence and abilities of student teachers.

**Quasi-experiment** is an empirical study used to estimate the causal impact of an intervention on its target population without random assignment. Quasi-experimental

designs typically allow the researcher to control the assignment to the treatment condition, but using some criterion other than random assignment (e.g., an eligibility cutoff mark). In some cases, the researcher may have control over assignment to treatment. In both experimental (i.e., randomized controlled trials or RCTs) and quasi-experimental designs, the programme or policy is viewed as an ‘intervention’ in which a treatment—comprising the elements of the programme/policy being evaluated – is tested for how well it achieve its objectives, as measured by a pre-specified set of indicators. A quasi-experimental design by definition lacks random assignment, however, assignment to conditions (treatment versus no treatment or comparison) is by means of self-selection or administrator / investigator selection or both of these routes.

Gr I Experimental group T<sub>1</sub> X - Treatment T<sub>2</sub> Gain = T<sub>2</sub> - T<sub>1</sub> = DE

Gr II Control group T<sup>1</sup><sub>1</sub> Y - No treatment T<sup>1</sup><sub>2</sub> Gain = T<sup>1</sup><sub>2</sub> - T<sup>1</sup><sub>1</sub> = DC

Two groups as they exist [traditional method lectures (Y = no treatment) and social capital, knowledge sharing intervention (X = treatment)] are selected and one group is taken to be the experimental group and the other as the control group. Pre-tests were administered to both the groups. The control group students received traditional method of teaching whereas, the experimental group is treated with social capital and knowledge sharing intervention. After, the treatment, post-tests are conducted. The differences in the pre-test and post-test measures are calculated separately for the two groups. The significant difference between the different measures of the two groups is computed. For examples if T<sub>2</sub> - T<sub>1</sub> = DE for the experimental group and T<sup>1</sup><sub>2</sub> - T<sup>1</sup><sub>1</sub> = DC for the control group, then we test the significance of the difference between DE and DC. If the difference is significant, then we conclude that the treatment is effective.

### ➤ **SAMPLE**

A sample can be defined as the representative of the population selected for a study whose characteristics exemplify the larger group from which they were selected.

When selecting a sampling strategy, it is necessary that it fits the purpose of the study, the resources available, the question being asked and the constraints being faced.

This holds true for sampling strategy as well as sample size. A Multistage sampling procedure was adopted for the present study.

The researcher identified the colleges of education in and around Chennai District. 600 student teachers were chosen from various college of education. The medium of instruction of these students is English. The selected students were administered the test. The test contained 152 questions based 5 point Likert scale questions. The test items were based on relationship skills, social awareness, self-awareness, self-management, classroom management, teaching skills and teaching goals for student teachers.

600 student teachers have been statistically placed under 2 groups, low and high based on their socio-emotional competence and abilities of student teachers. For the present study, the investigator has chosen students who come under low group only

It is essential to select a suitable college of education where the experiment could be conducted. The colleges of education were selected based on the cooperation from the head of the institution, regularity of student teachers and locality. Out of 600 student teachers 226 student teachers falls in the low group and 188 student teachers were in high group. Merely 84 student teachers (low group) were in N.K.T National College of Education for Women and 42 student teachers (Low group) were in Lady Willingdon institute of Advanced study of Education. These two institutions only selected for the conduct of experiment.

**Table 3.1**

**Showing the level of socio-emotional competence and abilities of student teachers**

		Abilities of student teachers		
		Low	High	Total
<b>Socio-emotional competence</b>	<b>Low</b>	<b>126</b>	<b>288</b>	<b>414</b>
	<b>Percentage</b>	<b>21%</b>	<b>48%</b>	<b>69%</b>
	<b>High</b>	<b>24</b>	<b>162</b>	<b>186</b>
	<b>Percentage</b>	<b>4%</b>	<b>27%</b>	<b>31%</b>
<b>Total</b>	<b>Total</b>	<b>150</b>	<b>450</b>	<b>600</b>
	<b>Percentage</b>	<b>25%</b>	<b>75%</b>	<b>100%</b>

**Table 3.1 shows the number of student teachers under low and high.**

Both the colleges of education (institutions) were located in Triplicane, Chennai District, Tamilnadu. 42 students have been randomised into control and experimental group from Lady Willingdon institute of Advanced study in Education and 84 students have been randomised into control and experimental group from N.K.T. National College of Education for Women. The basic idea of choosing the student teachers who come under low group is to identify the level of socio-emotional competence and abilities they have and to design social capital and knowledge sharing module to create interest among the student teachers which can enhance their socio-emotional competence and abilities among student teachers.

**Table 3.2**

**Showing distribution of students in Experimental and Control group based on their institution**

N.K.T.N.C.E		L.W.I.A.S.E	
Experimental Group	Control Group	Experimental Group	Control Group
42	42	21	21

**Table 3.2 shows the number of students in each of the experimental and control groups based on their institution.**

Control group students are taught using traditional method which was designed to address a majority of student population. The experimental group students were taught using the social capital and knowledge sharing intervention module which caters the need of all student teachers. Social capital and knowledge sharing intervention module contains of 30 days programme. Each session indicates the following sequence.

**Table 3.3**

**Table showing the day-wise representation of Intervention programme**

S.No.	Content	Days	Background
1	Orientation Programme	3	To explain building positive relationship (i.e) rapport with ice breaking sessions.
2	Facilitating Group Dynamics	3	Social dynamics and facilitation, building trust, supporting participation, content collaboration, decision making, bonding and bridging.
3	Developmental strategies	3	Awareness about social capital and knowledge sharing, promoting self-regulation, sustain behavioural changes,

4	Establishing guidance and supportive environment	3	Identify and provide supportive strategies for socio-emotional competence and abilities of student teachers.
5	Constructing framework and Methodologies	3	Illustrates to build knowledge sharing and social capital, adaption of various methodologies.
6	Tools and services to support virtual collaboration	3	Creating awareness in social media, exchange of knowledge through social media.
7	Facilitating virtual collaboration and interaction	3	Providing online facilitation, collaboration and interaction.
8	Field-based knowledge sharing and learning methods	2	Collecting and Sharing of knowledge based information from various institutions.
9	Promoting socio-emotional competence through modified pyramid model-social capital and knowledge sharing	3	Students in low level will be enhanced by social capital and knowledge sharing.
10	Individualized intensive intervention	3	Social skills, challenging behavior, team approach, social and emotional development.
11	Social capital and knowledge sharing strategies	3	Social networks, social relationship and knowledge transformation.
12	Conclusion and feedback	1	Evaluation and getting feedback from the student teachers.

### 3.6 METHOD OF THE STUDY

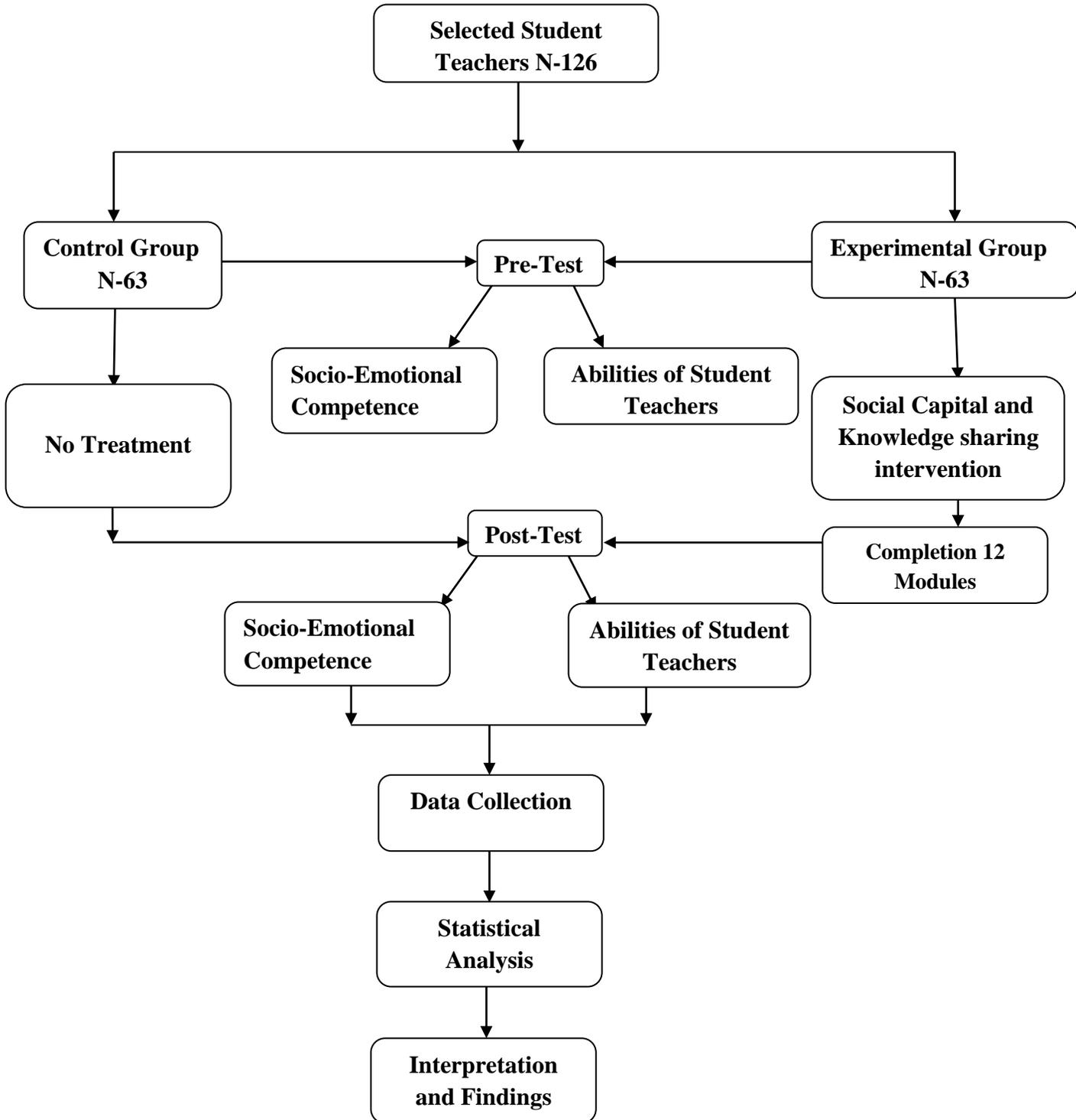


Fig. 3.1 Flow chart of various phases of study

This study is carried out in the following steps:

1. Pre-test is conducted for both Experimental and control group students in
  - Socio-Emotional competence
  - Abilities of Student teachers
2. Keeping in mind the various areas of social capital and knowledge sharing among the student teachers in Experimental group, social capital and knowledge sharing module is designed.
3. Experimental group students are exposed to an intervention programme using the social capital and knowledge sharing module designed.
4. After completion of the topics post-test is conducted for both Experimental and control group students in
  - ❖ Socio-emotional competence
  - ❖ Abilities of student teachers
5. Data is collected and analyzed.

### **3.7 DESIGNING AND DEVELOPING MODULE**

#### **❖ SOCIAL CAPITAL AND KNOWLEDGE SHARING MODULE**

The module is designed keeping in mind the student teachers natural learning strengths. Modules are presented to the student teachers in a wide variety of ways. This can make the module open and flexible enough to place student teachers in charge of their own learning and help them to understand the concepts better. This also improves student teachers educational experiences, improves instruction for diverse groups and increases student teachers' ability to work with school students.

#### **❖ SOCIAL CAPITAL AND KNOWLEDGE SHARING MODULE**

##### **Aims**

The training aims to

- Develop socio-emotional competence and abilities of student-teachers in planning and implementation
- Raise participants knowledge sharing skills and attitude.
- To make student-teachers aware of knowledge sharing and social capital plays key role in socio-emotional competence and ability of students-teachers.
- To motivate through sharing of knowledge, best practices/case study/field exposure.
- Sensitize the participants to develop knowledge sharing, skills, and attitude to effective management of socio-emotional competence and ability of students-teachers.

**Training objectives:**

The training is designed to achieve the objectives.

At the end of the training trainee will be able to:

- ❖ Describe the importance of knowledge sharing and social capital
- ❖ Explain the innovation and technologies available in the market and bale to choose suitable technology.
- ❖ Design the plan foe socio-emotional competence and abilities of student-teachers.
- ❖ Discuss the practices in promoting socio-emotional competence through adopted pyramid model.
- ❖ Explain the steps involved in field implementation of the knowledge sharing and social capital in various institutions.

**Training Modules:**

Module: 01: Training Programme

Module: 02: Facilitating Group Dynamics

Module: 03: Developmental Strategies

Module: 04: Establishing Guidance and Supportive Environment

Module: 05: Constructing Framework and Methodologies

Module: 06: Tools and Services to Support Virtual Collaboration

Module: 07: Facilitating Virtual Collaboration and Interaction

Module: 08: Field-Based Knowledge Sharing and Learning Methods

Module: 09: Promoting SEC through modified pyramid model

Module: 10: Individualized Intensive Intervention

Module: 11: Social Capital and Knowledge Sharing Strategies

Module: 12: Conclusion

**Methodology:**

- Lecture cum discussion
- Group discussion and activities
- Field visit
- Case studies
- Film shows

**3.8 TOOLS USED**

The tools chosen were found to be suitable, workable, reliable and valid. According to David Colton, Robert W. Covert (2007), “Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure”. According to Kothari (2009), “Validity refers to the ability of an instrument to measure what the researcher intend it to measure”. Reliability speaks to the consistency of researcher’s measurement, Kothari (2009). The need for construction arose as it is found that there were no suitable tests available for the assessment of the variables that is appropriate to the sample studied.

The variables chosen for the present study necessitated both construction and selection of relevant tools. The appropriate tools constructed are Socio-emotional competence and Abilities of student teachers. The investigator constructed the tools for the variables namely Socio-emotional competence, Abilities of student teachers, social capital

and knowledge sharing which were found to be suitable for the present sample. The tools constructed are standardized by the investigator through pilot study. The selected tools are described in detail.

### **3.9 DESCRIPTION, ADMINISTRATION AND SCORING OF THE TOOLS**

#### **Tool 1: Socio-emotional competence**

The socio-emotional competence tool consists of 89 statements. The items are representative of the various competency techniques and adequate discriminating power. It is a five point scale having five categories of responses- strongly agree, agree, neutral, disagree and strongly disagree.

**Table 3.4**

#### **Dimensions of socio-emotional competence**

<b>Sl.No</b>	<b>Dimensions of Socio-Emotional Competence</b>	<b>No. of Statements</b>
<b>1</b>	<b>Relationship skills</b>	<b>20</b>
<b>2</b>	<b>Social Awareness</b>	<b>25</b>
<b>3</b>	<b>Self-Awareness</b>	<b>24</b>
<b>4</b>	<b>Self-Management</b>	<b>20</b>
<b>Total</b>		<b>89</b>

**Table 3.5 - Item number codes for sorting statements for socio-emotional competence**

<b>Sl.No</b>	<b>Dimensions of Socio-Emotional Competence</b>	<b>Item Number codes</b>
<b>1</b>	<b>Relationship skills</b>	<b>1-20</b>
<b>2</b>	<b>Social Awareness</b>	<b>21-45</b>
<b>3</b>	<b>Self-Awareness</b>	<b>46-69</b>
<b>4</b>	<b>Self-Management</b>	<b>70-89</b>
<b>Total</b>		<b>89</b>

#### **Administration of Tool**

The student teachers are seated in a quiet room and kept away from distractions of the neighboring classrooms while filling up the scale. Instruct them to read each statement in the scale and clarify their doubts. Request them to read the statements and consider how it best suits them and tick (✓) the first response that comes to their mind for each statement.

Inform them that any 'one' of the response options (strongly agree, Agree, Neutral, Disagree, Strongly disagree) needs to be ticked. Request student teachers to tick for every statement and not omit any statements.

Encourage student teachers to fill up the scale continuously without pausing and thinking for too long. Clarify doubts of student teachers regarding any statement while they are filling the scale. Inform student teachers that there are no right or wrong answers and no specific time limit to complete the scale. Ensure that all student teachers return their inventory and have answered all the statements.

### **Scoring Procedure**

The student teachers were asked to go through each statement and give response by putting tick mark under any one of the options given and respond freely and frankly, not leave any statement unanswered. There are four alternative to choose like 'strongly disagree-5', 'disagree-4', 'neutral-3', 'agree-2' to 'strongly agree-1'. The minimum and maximum score of a subject to this questionnaire may be 89 and 445 respectively.

### **Tool 2: Description of the tool – Abilities of Student Teachers**

Abilities of student teachers scale consists of 63 items in the form of 5 point Likert scale questions. Each question carries five choices and the student teachers are requested to tick any one. The questions cover the topics covered about classroom management, teaching goals and teaching skills.

### **Administration of Tool**

The student teachers are requested to be seated in a quiet room and kept away from distractions of the neighbouring classrooms while filling up the scale. Instruct them to read each statement in the scale and clarify their doubts. Request them to read the statements and consider how it best suits them and tick (✓) the first response that comes to their mind for each statement.

Inform them that any ‘one’ of the response options (Strongly agree, agree, neutral, disagree, and strongly disagree) needs to be ticked for the dimension of classroom management. Request student teachers to tick for every statement and not omit any statements.

One of the main goals of teacher education is to help student teachers figure out who they are and how they can render their service to their community. Great teachers help the students understand the social responsibilities of their field and the social impact of their choices. The responses for teaching goals are (Strongly agree, agree, neutral, disagree, and strongly disagree)

**Table 3.6**

**Dimensions of abilities of student teachers**

<b>Sl.No</b>	<b>Dimensions of Abilities of student teachers</b>	<b>No. of Statements</b>
<b>1</b>	<b>Classroom Management</b>	<b>20</b>
<b>2</b>	<b>Teaching Skills</b>	<b>23</b>
<b>3</b>	<b>Teaching Goal</b>	<b>20</b>
<b>Total</b>		<b>63</b>

**Table 3.7**

**Item number codes for sorting statements for abilities of student teachers**

<b>Sl.No</b>	<b>Dimensions of Abilities of student teachers</b>	<b>Item Number codes</b>
<b>1</b>	<b>Classroom Management</b>	<b>1-20</b>
<b>2</b>	<b>Teaching Skills</b>	<b>21-43</b>
<b>3</b>	<b>Teaching Goal</b>	<b>44-63</b>
<b>Total</b>		<b>63</b>

Realizing dearth in the availability of a suitable and appropriate thinking skills test required for the study the investigator decided to construct a thinking skills test for student

teachers. The responses for teaching skills are (essential, very important, options important, unimportant and not applicable).

Encourage student teachers to fill up the scale continuously without pausing and thinking for too long. Clarify doubts of student teachers regarding any statement while they are filling the inventory. Inform student teachers that there are no right or wrong answers and no specific time limit to complete the scale. Ensure that all student teachers return their inventory and have answered all the statements.

### **Scoring Procedure**

The descriptive answers of the students were converted into quantitative data by giving arbitrary weights. A score of 5, 4, 3, 2 and 1 was given respectively for always, most often, frequently, sometimes and never, for all the items of classroom management, teaching goals and teaching skills respectively. There are no negative items. The minimum and maximum score of a subject to this questionnaire may be 63 and 315 respectively.

### **Tool 3: Description of the tool –Social Capital**

#### **Administration of tool**

The subjects are seated comfortably in a well lit room, free of external distractions. The questionnaire is given to the subjects. Inform student teachers that these questions are to help them learn more about how student teachers of their age feel about different things. Inform them that there are no right or wrong answers and it is important that they answer the way they feel and not how somebody else thinks they should feel. Ask them to indicate how true each item was for them by placing a tick (✓) mark in the respective column against each statement. Ensure that they do not omit any question.

**Table 3.8**

**Dimensions of Social capital**

<b>Sl.No</b>	<b>Dimensions of Social Capital</b>	<b>No. of Statements</b>
<b>1</b>	<b>Cognitive Capital</b>	<b>21</b>
<b>2</b>	<b>Structural Capital</b>	<b>29</b>
<b>3</b>	<b>Relational Capital</b>	<b>34</b>
<b>Total</b>		<b>84</b>

**Table 3.9**

**Item number codes for sorting statements for Social Capital**

<b>Sl.No</b>	<b>Dimensions of Social Capital</b>	<b>Item Number codes</b>
<b>1</b>	<b>Cognitive Capital</b>	<b>1-21</b>
<b>2</b>	<b>Structural Capital</b>	<b>22-52</b>
<b>3</b>	<b>Relational Capital</b>	<b>53-84</b>
<b>Total</b>		<b>84</b>

**Scoring procedure**

The social capital scale of student teachers measures three dimensions namely cognitive capital, structural capital and relational capital. The cognitive capital consists of 21 items, structural capital consists of 29 items and relational capital consists of 34 items, thus totally 84 items were presented. The student teachers were asked to go through each statement and give response by putting tick mark under any one of the options given and respond freely and frankly, not leave any statement unanswered. There are four alternative to choose like 'strongly disagree-5', 'disagree-4', 'neutral-3', 'agree-2' to 'strongly agree-1'. The minimum score of social capital is 84 and the maximum score is 420.

## **Tool: 4 Description of knowledge Sharing**

### **Administration of the tool**

The multi-dimensional knowledge sharing questionnaire consisted of 56 items in the form of statements. There are no positive and negative items. Categories are well mixed to reduce the halo effect, logical error and double barreled statements are avoided. Each statement has four alternative responses such as strongly disagree, disagree, neutral, agree and strongly agree. The knowledge sharing scale measures seven dimensions namely Learning environment to support knowledge sharing, Social interaction, Communication flow, Knowledge sharing awareness , Attitude towards knowledge sharing, Degree of enjoyment in helping others , ICT/WEB 2.0 technology factor. The learning environment to support knowledge sharing consists of 8 items, Social interaction consist of 4 items, Communication flow consist of 3 items, Knowledge sharing awareness consist of 3 items, Attitude towards knowledge sharing consist of 9 items, Degree of enjoyment in helping others consist of 4 items and ICT/WEB 2.0 technology factor consists of 24 items, thus totally 56 items were presented.

**Table 3.10**

### **Dimensions of Knowledge Sharing**

<b>Sl.No</b>	<b>Dimensions of Knowledge Sharing</b>	<b>No. of Statements</b>
<b>1</b>	Learning environment to support knowledge sharing	<b>8</b>
<b>2</b>	Social interaction	<b>4</b>
<b>3</b>	Communication flow	<b>3</b>
<b>4</b>	Knowledge sharing awareness	<b>3</b>
<b>5</b>	Attitude towards knowledge sharing	<b>9</b>
<b>6</b>	Degree of enjoyment in helping others	<b>4</b>
<b>7</b>	ICT/WEB 2.0 TECHNOLOGY FACTOR	<b>24</b>
<b>Total</b>		<b>56</b>

**Table 3.11**

**Item number codes for sorting statements for Knowledge Sharing**

<b>Sl.No</b>	<b>Dimensions of Knowledge Sharing</b>	<b>Item Number codes</b>
<b>1</b>	Learning environment to support knowledge sharing	1-8
<b>2</b>	Social interaction	9-12
<b>3</b>	Communication flow	13-15
<b>4</b>	Knowledge sharing awareness	16-18
<b>5</b>	Attitude towards knowledge sharing	19-27
<b>6</b>	Degree of enjoyment in helping others	28-31
<b>7</b>	ICT/WEB 2.0 TECHNOLOGY FACTOR	32-56
<b>Total</b>		<b>56</b>

**Scoring Procedure**

The knowledge sharing scale consists of 56 items. The maximum possible score is 280 and the minimum score is 56. The student teachers were asked to go through each statement and give response by putting tick mark under any one of the options given and respond freely and frankly, not leave any statement unanswered. There are five alternative to choose like ‘strongly disagree-5’, ‘disagree-4’, ‘neutral-3’, ‘agree-2’ to ‘strongly agree-1’. The minimum score of social capital is 56 and the maximum score is 280.

Scoring pattern for each knowledge sharing area: 1-93 is good, 94-186 is average, 187-280 is low.

**3.10 PILOT STUDY**

In education and social sciences research, investigators use instruments in the form of scale or questionnaires to measure constructs or characteristics of an individual, in quantitative and qualitative studies.

The pilot study was conducted in order to ascertain the reliability, validity and objectivity of the tools for the present study. The reliability of the measuring instruments used by the researcher is understood in the contexts: stability, equivalence and internal consistency. For this purpose a sample of 100 student teachers were selected to test the suitability of the tools, decide on the order of presentation of the tools, estimate the time taken to complete each tool, familiarize the researcher with the administration of the tool, establish the reliability and validity of the tools and to streamline the instructions that need to be given to the students teachers for each test.

The data was collected from student teachers from college of education. With the prior permission of the concerned college principal, teacher educators and the student teachers have been briefed about the purpose of the study. The teacher educators and student teachers have been co-operative enough throughout the data collection.

#### ❖ **Reliability and Validity**

##### **Tool 1: Socio-emotional competence**

In order to test the validity of the evaluation tool which is used for this study, the researcher tested the scale to 100 respondents. These respondents as well as their answers were not part of the actual study process and were only used for testing purposes. After the questions have been answered, the researcher asked the respondents for any suggestions or any necessary corrections to improve the instrument further. There were no suggestions given by the respondents and they found the tool to be easy to understand. The magnitude of the Cronbach alpha estimates was appropriate for the proof of the reliability (Henson, 2001). Therefore, to fulfill the requirement of the reliability in this study, Cronbach Alpha is adopted to secure reasonable items coefficients. The internal consistency coefficient (Cronbach's Alpha) of the socio-emotional competence scale was 0.83. Reliability of a construct helps to assess the goodness of the measure and indicates accuracy in measurement (Sekaran 2003, Alan Bryman & Duncan Gramer 2011, Robert L. Miller et.al 2002, Andy field 2011). The validity of socio-emotional competence scale was 0.911.

### **Tool: 2 Abilities of Student Teachers**

The magnitude of the Cronbach alpha estimates was appropriate for the proof of the reliability (Henson, 2001). Therefore, to fulfill the requirement of the reliability in this study, Cronbach's Alpha is adopted to secure reasonable items coefficients. The internal consistency coefficient (Cronbach's Alpha) of the abilities of student teachers scale was 0.88.

The content validity was established by carefully examining each item of the tool against the purpose by the panel of educationists, educational psychologists, psychologists and teacher educators. Their suggestions have been taken into account to enhance the contents and quality of the statements. The validity of abilities of student teachers scale was 0.93. The intrinsic validity of the tool was established by taking the square root of the corresponding reliability coefficient. Hence, this tool possesses high intrinsic validity.

### **Tool: 3 Social Capital**

The magnitude of the Cronbach's alpha estimates was appropriate for the proof of the reliability (Henson, 2001). Therefore, to fulfill the requirement of the reliability in this study, Cronbach's Alpha is adopted to secure reasonable items coefficients. The internal consistency coefficient (Cronbach's Alpha) of the social capital scale was 0.88.

The content validity was established by carefully examining each item of the tool against the purpose by the panel of educationists, educational psychologists, psychologists and teacher educators. Their suggestions have been taken into account to enhance the contents and quality of the statements. The validity of social capital scale was 0.93. The intrinsic validity of the tool was established by taking the square root of the corresponding reliability coefficient. Hence, this tool possesses high intrinsic validity.

### **Tool: 4 Knowledge Sharing**

The magnitude of the Cronbach's alpha estimates was appropriate for the proof of the reliability (Henson, 2001). Therefore, to fulfill the requirement of the reliability in this study, Cronbach's Alpha is adopted to secure reasonable items coefficients. The internal consistency coefficient (Cronbach's Alpha) of knowledge sharing scale was 0.66. Hence, this tool possesses high intrinsic validity. The validity of knowledge sharing scale was 0.93.

**Table 3.12**

**Table showing reliability and validity of select variables**

<b>Variables</b>	<b>Reliability</b>	<b>Validity</b>
<b>Socio-emotional competence</b>	0.83.	0.911.
<b>Abilities of Student teachers</b>	0.88	0.93
<b>Social capital</b>	0.88	0.93
<b>Knowledge Sharing</b>	0.66	0.81

### **3.11 MAIN STUDY**

The investigator proceeded with the main study after establishing the workability of the tools using tests of reliability and validity. The main study was conducted with the matching group of students who were not used for the pilot study.

The procedure consisted of a systematic selection of students exercising all controls. The subjects thus selected were administered all the tools. The data thus collected were subjected to suitable statistical analyses for verification of the hypotheses.

### **3.12 STATISTICAL TECHNIQUES USED**

**1. 't' test** is applied to compare the data collected from Experimental and Control groups.

A t-test is an analysis of two groups through the use of statistical examination; a t-test with two groups is commonly used with small sample sizes, testing the difference between the samples when the variances of two normal distributions are not known. A t-test is any statistical hypothesis test in which the test statistic follows a Student's t-distribution under the null hypothesis. It is used to determine if two sets of data are significantly different from each other.

### **3.13 CONCLUSION**

Thus the methodology for the present investigation gives a clear view. The results of the analyses are classified and presented in the following chapters with appropriate interpretations and specific discussions with probable attributes as explanation of the results.