## CHAPTER –III

**RESEARCH DESIGN**

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CHAPTER –III
RESEARCH DESIGN

3.1 Introduction

Research design is a plan, structure, and strategy of investigation conceived so as to obtain answers to research questions and to control variance. It includes an outline of what the investigators will do from writing the hypothesis and his operational implications to the final analysis of the data. It is the scheme, the paradigm of the operation of the variables and strategy includes the methods to be used to gather and analyse the data. Research design is invented to enable the investigators to answer research questions as validity and objectivity accurately and economically as possible. Research design sets up the framework for ‘adequate’ test of relation among variables. A design tells us what type of statistical analysis to be used. A good design often characterized by flexible, appropriate, efficient, economic and so on. Generally the design, which minimizes bias and maximizes the reliability of the data collected and analyzed, is considered a good design.

The concept of ‘ethics’ for the purpose of research is defined in terms of the researchers ardent curiosity, innovative thinking, ability to overcome wishful thinking, collection of factual information by setting aside personal values. Ethical behaviour and judgment, moral commitment towards various research activities in the field of Teacher Education. These elements tend to correct not only factual error but also mental, emotional, and volitional facilities of researcher.

In description research, descriptive researchers are collecting data in an attempt to describe behaviour and attitude as much accurately as possible. The purpose of descriptive research is description of the state affairs as it exists at present, and the researchers have no control over the variables, and the researcher can only report what has happened, the report contains frequency of shopping, preferences of peoples, or similar data. It is often of greatest value during the initial stages of an investigation. If the status of a problem is described, steps may be taken, later to find out the remedy. It helps to point
out the extent of a problem and indicate how serious and wide-spread it is based on the information, and data.

Under all major types of descriptive research, the investigator selects survey research. The purpose of survey type of research is to discover the relative incidence, distribution, and inter-relations of sociological and psychological variables. Describe the current status of a phenomenon of student-teachers in teacher education, compare and improve the status of student-teacher’s ethical behaviour and judgment. Therefore, survey research emphasizes methods and sampling designs. The Methodology of this type of research used tools such as questionnaires, to get response from the Student-Teachers respondents and designing the research very carefully. The investigator fully involved in selecting appropriate and standardized. Psychological research techniques very carefully in this chapter.

3.2 Research Method

Research method is a systematic or scientific procedure by which the investigator gathers information and draws conclusion on the basis of the collected data. In this study, normative survey method was considered as the appropriate method. The main purpose is to reveal what is the present situation. He obtained the first information regarding the prevalent conditions or current performances regarding the ethical behaviour and judgment of student-teachers in college of education-related activities. These performances were identified by the investigator by conducting a study and analysis the different dimension of the present situation further the research investigator also used qualitative method of observation in the present study.

Secondly, the investigator evaluated the desired objectives of the present study and arrived at a conception. Thirdly, he constituted the important dimension of the present enquiry regarding the ethical behaviour and judgment of student-teachers activities and thereby the goals of the present research is achieved. In the normative survey research, the investigator covered larger population by conducting a cross-sectional study and he collected adequate representative sample which covers the entire total target
population. In this study, every dimension of problem is examined and at the same time the research has made a ground for planning the future forward looking, ie how student-teachers performing ethical behaviour and judgment in teacher education-related activities and what kind of ethical behaviour and judgment is needed for performing his profession in a best way in order to promote teacher education. By considering the above ideas, the investigator preferred the normative survey method has the best suitable research method for present study.

The present study has undertaken the following stages, which are given below:

In the first stage, Ethical Behaviour and Ethical Judgment Variables are defined in an operational form to provide the objective measurement.

In the second stage, Selecting a suitable Method to study the Student-Teachers Ethical Behaviour and Ethical Judgmental activities or performance in various Colleges of Education.

In the Third stage, Appropriate research tools have been developed by the investigators by making use of the resources that are available in the locality and these tools were used for collecting data from the respondents. In order to ensure the Validity, the researcher used the unbiased questionnaires.

In the fourth stage, the investigator identified various Colleges of Education based on their nature and type for collecting data in a distributive way.

In the fifth stage, the investigator identified the needed target population for the study and collected adequate samples from the student-teachers, who are undergoing the training in various colleges of education located in Pondicherry.

The stage of sixth process of collecting data from the respondents. When the data were collecting, the following measures have been taken into consideration.

i). Identifying the response errors in the process of data collection and
Used a few measures to control them.
ii). Attempts has been made to minimize the threats of possible confounding variables that could influence the survey results. In the seventh stage, Measurements are taken to enhance the objectivity of the data. In the stage of eighth Analysis and interpreting the data with the help of relevant Statistical Techniques. In the Last, stage Presentation of the finding.

3.3 Target Population

The description of the target population is done by means of survey. Therefore, it is called as unit of analysis. Normative units may be schools, colleges, classroom, or any other agencies. In the present study, the units of analysis are the (student-teachers ethical behaviour and ethical judgment) undergoing training in various colleges of education located in and around of Pondicherry union area are included as samples in the present study.

3.4 Sampling Procedure

In the process of sample selection, the following steps were used by the investigator.

i). Identification of total number of colleges of education selected for collecting samples from the student-teachers who are undergoing training in B.Ed. course.

ii). Preferring the simple random sampling technique

iii). No of student-teachers preferred for collecting responses.

The investigator collected the entire list of educational colleges from the Department of Education Pondicherry University, Kalapet, and Pondicherry. The investigator randomly selected few college of education in and around of Pondicherry union area and collected data from the student-teachers. The data for the present study is collected from 700 student-teachers. The distribution of the sample is given in the following table 3.1.
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the Colleges of Education</th>
<th>Nature of Colleges</th>
<th>Location of The</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Immaculate College of Education for Women. Tagore Nager, Pondicherry-605 009.</td>
<td>Women’s College</td>
<td>Urban</td>
<td>-</td>
<td>50</td>
<td>50</td>
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<tr>
<td>02</td>
<td>St. Anne’s College of Education. Kattukuppaam, Pondicherry-607 402</td>
<td>Women’s College</td>
<td>Rural</td>
<td>-</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>03</td>
<td>Vetri Venkateswara College of Education, Moolakum, Pondicherry-605 010</td>
<td>Co-ed College</td>
<td>Urban</td>
<td>33</td>
<td>46</td>
<td>79</td>
</tr>
<tr>
<td>04</td>
<td>N.T.S. College of Education, Kosapalaiyam, Pondicherry-605 013</td>
<td>Co-ed College</td>
<td>Urban</td>
<td>22</td>
<td>28</td>
<td>50</td>
</tr>
<tr>
<td>05</td>
<td>Pope John Paul II College of Education, Reddiarpolyam, Pondicherry-605 010</td>
<td>Co-ed College</td>
<td>Urban</td>
<td>15</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>06</td>
<td>Acharya College of Education. Villianure, Pondicherry-605 010</td>
<td>Co-ed College</td>
<td>Urban</td>
<td>11</td>
<td>35</td>
<td>46</td>
</tr>
<tr>
<td>07</td>
<td>Government – Co-operative College of Education. 62, Suffern Street, Pondicherry-605 001.</td>
<td>Co-ed College</td>
<td>Urban</td>
<td>18</td>
<td>32</td>
<td>50</td>
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<tr>
<td>08</td>
<td>Sri Sairam College of Education. Koodapakkam, Pondicherry-605 502.</td>
<td>Co-ed College</td>
<td>Rural</td>
<td>13</td>
<td>27</td>
<td>40</td>
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<tr>
<td>09</td>
<td>Sabari College of Education. Karamanikkam, Pondicherry-605 106</td>
<td>Co-ed College</td>
<td>Rural</td>
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<td>41</td>
</tr>
<tr>
<td>10</td>
<td>Nehru College of Education. Sedrapet, Pondicherry-605 111.</td>
<td>Co-ed College</td>
<td>Rural</td>
<td>26</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>11</td>
<td>Perunthalaiver kamarajar Government- College of Education. Karaikal-609605</td>
<td>Co-ed College</td>
<td>Urban</td>
<td>16</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td>12</td>
<td>Usha Latchumanan College of Education. Thirukkanur, Pondicherry-605 501</td>
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<td>16</td>
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<tr>
<td>13</td>
<td>T.V.R. College of Education. Mullodai, Pondicherry-607402</td>
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<td>Rural</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>14</td>
<td>Dr. AnbuPaul College of Education. Thuthipet, Pondicherry-605 502</td>
<td>Co-ed College</td>
<td>Rural</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>15</td>
<td>Vasavi College of Education. Madagadipet, Pondicherry-605 107</td>
<td>Co-ed College</td>
<td>Rural</td>
<td>11</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td>16</td>
<td>Venkateswara College of Education. Madagadipet, Pondicherry-605 107</td>
<td>Co-ed College</td>
<td>Rural</td>
<td>13</td>
<td>-</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>253</td>
<td>447</td>
<td>700</td>
</tr>
</tbody>
</table>
3.5 Research Tools and its Procedures used in the Study

The investigator preferred ‘Direct Approach’ in administering the questionnaire instead of mailed approach, in order to facilitate the objective way of data collection. At the same time, the investigator has got opportunity to clarify the question items that are given in the questionnaire and issues raised by the respondents. Further, the direct approach in administration of tool to group offered absolute satisfaction on the part of the investigator and it also enhanced the response rate at high level.

Before collecting the samples, the investigator obtained permission from the principal of the colleges of education concerned in and around of Pondicherry union area.

After getting permission from the principal, the investigator started administering the research tools to collect data from the student-teachers who are undergoing teacher training in various colleges of education located in and around of Pondicherry union area. While administering the research tool, the investigator explained the purpose of the present investigation and mode of responding the item in the research tool to the respondents.

Further the investigator assumed that the data collected from them would be kept in the most confidential way and the data would be used for the research purpose only. The investigator used ‘cordial approach’ which helped him to collect objective data and valid data from the teachers within the stipulated time.

Since the investigator belongs to Pondicherry union and studied in one of the college of education located in Pondicherry union area, it was very easy for him to collect data in time with a high level of objectivity. In this study no time limit was prescribed by the investigator to give responses to the items of the questionnaire.

Controlling Response Errors in Data Collection

In survey design, the response errors commonly occur and it is the greatest present obstacle for the survey researcher. Because each and every subject covered by the survey, reveals individual true value (ITV). The
individual true value is quite independent of the survey of the way the items in the questionnaires are responded. Particularly the items in the student- teachers ethical behaviour inventory reveals different opinion to each and every question items and it would be very difficult to define the individual true value (ITV). This is the concern of the researchers. In few cases, the researcher may be succeeded which depends upon the nature of the items selected in the research tool, and the way, the item is put and by whom and how precautions have taken to minimize the error of chance. In any case subject, the difference between (ITV) and the value recorded in the research tool is called individual response error (IRE). The response error may also be termed as measurement error. In the response study, the possible response errors are identified and the investigator made an attempt to control those errors. Controlling the measurement errors in the study are given below.

1) Characteristics of data Collectors

The personality and temperament of the researchers are more prone to lead to errors and the personal characteristics of the researchers and social type might influence the subjects. In this study, the investigator himself administered the questionnaire with good temperament and good rapport was established with the respondents. The researcher freely moved with the respondents with the normal behaviour.

2) Errors Arising from Respondents

The sources such as lack of knowledge and fear psychosis of the respondents are leading to omit response errors. In order to avoid these response errors, the investigator preferred well known concepts of the subjects and variables selected for the present study are not controversial and do not embrace any subject who is responding to the item of the questionnaire.

3) Supply of Background Variable

Asking the subjects to furnish the biographical particulars such as asking their names and other personal details are not at all needed for the research and such details lead to response errors. Particularly, if the respondent do not want to reveal his name, and if such biographical particulars are insisted,
the respondents in order to save himself, may not supply the value. In the present study, the investigator has not insisted to reveal such type of biographical variables.

4) Data Collection by Third Person

If the data are collected by other researchers or project fellow or the investigator seeks help from teachers, there is a possibility of getting response errors. But in this study, the data were collected only by the researcher investigator himself. Therefore, the response error is prevented in this study.

5) Interest in the Survey

The accuracy and willingness of the responses of the respondents probably and partly based on the subject matter of the survey. In the present study, Student-Teachers Ethical Behaviour and Ethical Judgmental activities are the Teaching professional related variables, which are almost interest to the student-teachers respondents. The willingness on the part of the student-teachers in responding the tools clearly reveals the primary interest shown by the student—teachers in responding the tools.

6) Error Arising from the tool (From the designated Respondents)
The accuracy of information may also depend on the respondents from whom the responses are collected. Less accuracy comes into surface when a piece of information is obtained from the different respondents regarding a particular issue. In this study, the data were only collected from the student—teachers who are undergoing training in colleges of education located in Pondicherry area.

7) Length of the Questionnaire

If the length of the questionnaire is too long, the nature and magnitude of the responses error will be more and at the same time, respondents usually tend to become less attentive and accurate after certain time. In the present study, the investigator filtered some of the items by adopting double filter approach and reduced the items for increasing more attention of the respondents on each and every item and at the same time,
respondents have got adequate time to respond to each and every item of the questionnaire according to their convenience. Therefore, no time limit was prescribed in the present study and there is no chance for getting response error based on the length of the questionnaire.

8) **Order of the Items in the questionnaire**

While constructing the question items, the investigator has taken risk to construct uniform items which has same level of indepthness and the investigator also made adequate safeguard to avoid response errors. Therefore, the order of the item will not be responsible for creating response errors.

9) **Item Structure**

Item which have number of sub items that may lead to have more responses errors, because the respondents may avoid responding to supplement item. Whereas in the present study, each item has only three responses to be answered by the respondents. In Student-Teachers Ethical behaviour activities related questionnaire, the item are given in four aspects such as related to student-teachers ethical behaviour and ethical judgment activities relationship with other i.e. School Headmaster, Teachers, guide Teachers, Parents, teacher educators and peer group Student-Teachers. Since there is no supplement item in the questionnaire there is no possibility of getting responses errors. Therefore, the threat of response error was arrested.

10) **Item Content**

In the item of questionnaire, there is no chance for inaccurate and accurate response for the question item and at the same time there is no possibility using respondents memory to respond to the each and every item. Therefore, there is no possibility of getting considerable risk of errors. All item in the questionnaire are seeking casual responses from the student-teachers and there is no possibility using their memory to give correct response.
11) **Item Wordings**

In the present study, questionnaire item are given in a non-technical form, common terms are used, unambiguous items are given and clarity in wording are present. Therefore there is no possibility of getting error while responding to the each and every item of the questionnaire. Further, the investigator ensured the perfect item through judgmental process and empirical process. The jury council procedures and item analysis procedures conducted in the present study minimized the response errors.

12) **Directions to Respondents**

While administering the research tool, the investigator gave clear directions regarding the mode of the responding to the item of the questionnaire. Further, the directions are given in the questionnaire also. Therefore, responding to the items of the questionnaire could never prove to be errors.

13) **Physical Location and Questionnaire Administration**

Physical location of administration of questionnaire may have influence upon response errors. The investigator administered the questionnaire among student-teachers who are undergoing training in college of education and at the same time, the items of the questionnaire were responded by the respondents in their respective place in a free environment and therefore, this process eliminated the bias of the respondents.

14) **Presence of Third Person**

Normally if any third person is present at the time of collecting the data, there is a possibility of getting biased data, because of the third person’s familiarity or failure to keep the confidentiality. In the present study, the investigator collected data himself, by establishing a good rapport with the student-teachers respondents and at the same time, the investigator gave assurance to the respondents that their responses will be used for research purpose only and it will also be kept confidentially. This kind of research procedure helped a lot in ensuring the accuracy of response from the student-teachers.
15) Time

The research work, if time is allotted by the investigator for responding to the Item, that may have an influence upon response errors. Further, if the respondents are preoccupied with some work and feel tired to respond, and feel mental fatigue, these problems may also create inaccuracy in the data collected from the respondents. Therefore, in the present study, the investigator avoided all the above problems and allotted free time to the respondents to respond to each and every item of the questionnaire. In this way, the response errors were minimized.

Nature of the Questionnaire Used In This Study

The investigator focused his attention towards survey questionnaire on two important aspects to get appropriate responses. They are the nature of the present study, close-ended type of questionnaire were used by the investigator, because these type of questionnaires are easy to use, score and code for analysis on a computer. The investigator to collect data from the respondents used the following questionnaires.

Student-Teachers Ethical Behaviour

A questionnaire on identification of student-teachers ethical behavioural activities and performances in various colleges of education located in Pondicherry union.

Student-Teachers Ethical Judgment

A questionnaire on identification of student teachers ethical judgment performance in teacher education located in Pondicherry union. The investigator based on the availability of the sources frames all the above questionnaires.

Reasons for Selecting the Questionnaire

Based on the following reasons, the investigator selected the questionnaire for the present study.
i. Establishing Rapport

In survey, the investigator directly met the respondent and had an opportunity to establish a rapport with the student-teachers and administers and this kind of rapport motivated the respondents to respond for the statements that are given in the questionnaire in an enthusiastic manner.

ii. Uniformity

The investigator obtained uniform responses through standardized sequence of items and standardized instruction.

iii. Mischance to reveal the purpose

In this study, the investigator had an opportunity to explain the purpose Of the present study, the respondents understood the purposes of the study and responded promptly and objectively.

iv. Comprehensive nature

In this aspect, the investigator explained the real meaning of the item That helped the respondents to have clarity about the concept.

v. Economical

The usage of questionnaire in survey research helped the investigator to save his money, time and manpower by covering a larger number of respondents within a stipulated time.

vi. Anonymity

The respondents were allowed to feel and express their views and opinions. In this aspect, questionnaire helped the researcher to collect valid data in a confidential manner and the researcher did not know from whom he has collected the responses for each and every item. The anonymity ensures frank responses and leads to objective way of collection of data.
vii. Burden on the Part of respondents

It is very clear that the questionnaire reduced the pressure on the Part of respondents and permit the researcher to get immediate and apt responses.

viii. Flexibility

Which consider questionnaires as the most flexible tools

The investigator collected the quantitative and qualitative data.

ix. Easiness

The collected responses were easily scored, tabulated, and analyzed by using different statistical techniques.

Stages Involved In Developing Questionnaires for the Present Study

The investigator developed all the questionnaires by following the different stages - Figure 3.1 illustrate the steps followed to frame questionnaire in this study. These steps were classified into three stage namely pre-pilot stage, pilot stage and post – pilot stage / final stage.

Pre-pilot Stage

The pre-pilot stage is concerned with three important activities. There are 1) Locating the sources for identifying the dimension of the variables taken for the study, 2) Identification of appropriate dimension of the variables chosen and 3) Pooling of items under each dimension.

Locating the Sources

Books, journals, encyclopaedias, survey reports, monographs published by the eminent persons in the fields of educational psychology and Educational management were the sources for locating the identification of dimension of the selected variables of student-teachers ethical behaviour and judgmental activities in educational environment of Teacher Training Colleges.
**Behavioural observation techniques by using observation schedule sheet**

It is kind of behavioural assessment technique, direct observation of behaviour gives the most accurable recording of ongoing behaviour. Observations measure behaviour that is, actually occurring. Behavioural observation has been used to measure behaviour in classroom (O Leary, Romanczyk Kass, Diety Santagrossi 1971)

**Reason for Selecting Behavioural observation technique by the investigator**

1. **Dimension of Ethical behaviour:** In this study there are 12 diemsnion of Ethical behaviour and judgement

2. **The role of ethical Behaviour:** Since the ethical behaviour and judgement, some one at high rate and some one at low rate. So the observer had no chance to miss the behaviour and could not get and confusion at all in recording the ethical behaviour and ethical judgement of the student - teachers.

   In this study the frequency method is used by the investigator, because it is easy the conseptualaise. The investigator merely counts the number of times the behaviours occur and record the response in a block of time. This method is more use to count the number of off task behaviour in a class period.
Fig 3.1: Flow Chart on Developing the Research Tools

Start

Collection of Literature Survey in the field of Teacher Education, Educational Technology, Educational Management and Educational Psychology

Identifying the differences in the dimension Of Student-Teachers Ethical Behaviour and Their Judgmental activities, which are performed In Teacher Training Colleges.

Pre-Pilot Stage

Pooling the items

Item Selection Process

Pilot Study

Conducting pilot study after preparing the Questionnaire, which is suitable to the Respondents

Item are filtered by Seeking opinion from the Experts and Educationist

Post Pilot Stage

Selection of Reliable and Valid Items

Establishing the Reliability and Validity Measures

Questionnaire is ready for Administration

Stop
Identification of Appropriate Dimensions

Ethical Behaviour


Nature of ethical issues,

First: ethical issues concern questions of right and wrong, our Nature of Duties, Obligations, rights, and responsibilities. Ethics

Second: ethical claims cannot be true or false.

Third: ethical claims should be distinguished from values, what We like or what we believe to be good.

Ethical Judgment

The study of Nash (1991) intimates teachers moral and ethical decision-making and Character / Structure of individuals ethical decision-making. Howe, (1986) exhibited teachers characteristics. MEB, 1990; MEB, 1997, Naciye Aksoy (1999); teaching profession include teachers decision-making, it’s requires a special professional efficiency. Hilary Haping Yung (1997) Role conception and ethical behaviour and ethical judgmental behaviour of student-teachers, the ideal professional role conception as they progressed through the training programme. Darcia Narvaez, University of Minnesota Design Team Authors (2001) ethical Judgment skills Fit with Virtues. JAND. Ketfian (1997), two dimension of ethical decision-making Professionally ideal ethical decision-making and realistically likely decision-making could helpful in operationalising the variables of Ethical Judgmental Behaviour in to three categories that are:

The research area of Edgar (1983) and his classification of human relations was Universally accepted by researchers and the same was considered for Student-Teacher’s Ethical Behaviour and Ethical Judgment.

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Pooling of Items

Once the dimension were identified, the next step was pooling of items in each category of ethical behaviour and ethical judgment. The following source was consulted in pooling the items:

1) Consultation with the expects in the fields of educational psychology.
2) Consultation with teacher educators who are working in College of Education in Pondicherry union.
3) The available literature in the areas of educational management and educational psychology.

Criteria for Item Selection

Before selecting the items, the investigator must thoroughly know his aims and ask appropriate questions with suitable phrases. Therefore, the investigator considered the following aspects:

i) Usage of language
ii) Careful phrasing of the item to have clarity
iii) Précised nature of item
iv) Item should fulfil the objectives of the study.

While pooling of the item for well-structured questionnaire,

In the present study, the investigator considered all the precautionary measures and those measures are given below.

i) Avoided the misinterpretation of technical terms
ii) Avoided double negatives
iii) Avoided the inadequate alternatives
iv) Avoided ambiguous and vague statements
v) Avoided double barrelled items
vi) Avoided unwanted assumptions
vii) Avoided the unsuitable items of respondents
viii) Prevented the incomplete response to the items of the respondents
ix) Avoided the items indicated the past and

x) Avoided complex sentences

Thus, items were pooled under each dimension of student-teacher’s ethical behaviour and ethical judgment performance in teacher education. Then the investigator moved to the next stage namely pilot stage.

Pilot Stage

In the pilot stage, the investigator examined each item of the questionnaire. Particularly extreme items are checked by the investigator, because the extreme items are either beyond the intellectual level of the respondents or below their intellectual level. Therefore, the investigator consulted the experts and Educationist and sought opinion from their and filtered the Items of the Questionnaire and some of the main aim of using individual items may be eliminated or modified in order to make suitability to the intellectual level of the respondents.

The Investigator actually pooled the Item in the research tool on Student-Teachers Ethical behaviour is 80 Items. After the filtration done by the investigator based on the experts opinion is 50 Items.

In the Questionnaires on Student-Teachers Ethical Judgment the investigator pooled the Items is 97. After the modification and filtering of the Items selected based on the expert’s opinion is 50.

In the final stage, both Questionnaire having $50+50 = 100$ Items were used for collecting data from the respondents.
Table 3.2: Distribution of the dimension and items of the Indicators in Inventory on Ethical Behaviour and Judgment.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Indicators/ Dimension of Ethical Behaviour and Judgment</th>
<th>Items No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Honour</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Self-Respect</td>
<td>2,4</td>
</tr>
<tr>
<td>3</td>
<td>Compassion</td>
<td>3,5,6</td>
</tr>
<tr>
<td>4</td>
<td>Responsibility</td>
<td>7,8,10</td>
</tr>
<tr>
<td>5</td>
<td>Honesty</td>
<td>9,26,27,28,29,30,31</td>
</tr>
<tr>
<td>6</td>
<td>Integrity</td>
<td>11,12,13,14,15</td>
</tr>
<tr>
<td>7</td>
<td>Tolerance</td>
<td>16,17,18,19,20,21,22</td>
</tr>
<tr>
<td>8</td>
<td>Service</td>
<td>23,24,25</td>
</tr>
<tr>
<td>9</td>
<td>Fairness</td>
<td>32,33,34</td>
</tr>
<tr>
<td>10</td>
<td>Dignity</td>
<td>35,36,37,38,39,40,41,42,43,44</td>
</tr>
<tr>
<td>11</td>
<td>Diversity</td>
<td>45,46,47</td>
</tr>
<tr>
<td>12</td>
<td>Equity</td>
<td>48,49,50</td>
</tr>
</tbody>
</table>

i) Scoring Procedure of Ethical Behaviour Questionnaire

A four point liker type of scaling procedure was adopted for the scoring of student-teachers’ ethical behaviour questionnaire. The response of “Unethical” gets the weight-age of one. The response of “Not Knowing” gets the weight-age of two. The response of “Ethical Response” gets the weight-age of three and fourth response of “Not Related Responses” gets the weight-age of zero. Based on the above gradation of scores, various points of scaling decides, excepts the following questions numbering of 03, 08,13,18,23,28,33,38,43,and 48. These Items are Negative items. For the above question numbers, the response of “Unethical” gets the weight-age of three and the response of “Ethical” gets the weight-age of one, the remaining reminds the same.

ii) Scoring Procedure of Ethical Judgment

In measuring aspects of the response of the respondents, the scoring procedure on student-teachers ethical judgment questionnaire is based on three alternatives. (a) One of the alternative focuses on Professionally Idealistic ethical judgmental behaviour which carries three marks because in teacher education teaching is the highest as well as the Noble profession in the world so, the student-teachers should have true value based performance which develops right behaviour on the part of the Teachers and the same should be used in all situations. Therefore, the investigator has given the maximum score.
for the positive answer. (b) The second alternative focuses on Realistic ethical judgmental behaviour which carries two marks because this type of real situation focuses on ethical judgment which is based on the natural factor of Student-Teachers. (c) The third alternative focuses on Unethical judgmental behaviour which carries one mark because it is not related to ethical judgmental activities in teacher education, therefore, it is preferred as a third alternative. So this is the scoring procedure of the student-teachers ethical judgmental behaviour, expect for Question numbering 5, 10, 15, 20, 25, 30, 35, 40, 45 and 50. These numbers are considered as negative Items. Place value of ‘a’ is 1, and ‘c’ is 3 for questions numbering 5, 10, 15, and 20, likewise, for Q.No 25, 30, and 35, ‘b’ takes the value of 3 and ‘c’ takes the value of 2 and for Q.No. 40, 45, and 50, ‘a’ takes the value of 2 and ‘b’ takes the value of 1, rest of the numbers remains the same criterion value i.e. ‘a’ takes the value of 3, ‘b’ takes the value of 2, and ‘c’ takes the value of 1.

**Behaviour recording sheet from the classroom observation system**

In the behaviour recording sheet the particular such as the name of the student-teachers sex, age, nature, place and types of college, educational qualification, teaching experience, marital and religious status, communal status, and the 12 dimensions of ethical behaviour and judgment and their columns are given. If student teachers performance any one of the ethical behaviour and judgment activity. The investigator should mark a tally mark against. The column of the dimension in which student teachers performed in ethical behaviour and judgment. After completing the class, i.e. 45 minutes, the investigator counting the tally marks and identify harmony times the student teachers used the ethical behaviour and ethical judgement activity in the classroom. Then the tally marks are converted in to scores and then the scores are converted into the percentages and used for analysis.

**Post Pilot stage**

**3.6 Reliability and Validity of Tools**

In any survey research, the quality of the research instrument is essential to draw valid information from respondents. In this section, the investigator used two measures of validation by applying appropriate statistical techniques in order to improve the degree of validity and
reliability. The detailed procedure and mode of calculation for the above validation measures of the present study are discussed below.

Reliability of tools

In finding out the reliability co-efficient of the internal consistency of tools of student-teachers ethical behaviour and ethical judgment, the investigator preferred Split- Half Method and Rational Equivalence Methods. In the present study, 50 samples were selected in a random way.

i) Spilt- Half Method

This method was used by the investigator in identifying the reliability co-efficient for the research tool of student- teachers ethical behaviour and ethical judgment. This method is preferred by the investigator as one of the best method for calculating reliability, because it is a single shot approach leading to no place for errors due to repetition and laps of time and it is more convenient in saving time and expense. While using this method, the investigator offered scores for each item of 100 samples. The scores of the each and every sample was divided into halves, only for the purpose of scoring. The division of scores was made on the basis of selecting odd items and even items, because it is a sensible procedure generally used for splitting the item into two halves. The two different sets of scores of odd and even item were totalled for each samples and the two sets of total scores of each sample of 100 individuals respondents were taken for computing correlation co-efficient value. After getting the correlation co-efficient value, the investigator does not apply to the full length test which is the actual instrument prepared for use. Therefore, the investigator used Spearman Brown Prophecy Formula to estimate the reliability co-efficient of the full length test from the self correlation of the half tests.

ii) Rational Equivalence Method

In this method of reliability, the essential point is focused on inter-correlations of items and correlation of item within the test as a whole. In the present study, the investigator preferred a more popular formulae, i.e. Kuder- Rechardson Formula (20), the approximation to KR20 formula is given below.
Table 3.3 Reliability Co-efficient of Student-Teachers Ethical Behaviour and Judgment

<table>
<thead>
<tr>
<th>SI. No</th>
<th>Tools</th>
<th>Methods</th>
<th>Calculation</th>
<th>Reliability Co-efficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student-Teachers Ethical Behaviour Questionnaire</td>
<td>Split-Half Method Rational equivalence Method</td>
<td>2x.9798 1+.9798 50x202.74^2-375.82 x50-375.82 202.74^2 (50-1)</td>
<td>= .9898</td>
</tr>
<tr>
<td>2</td>
<td>Questionnaire on Student-Teachers Ethical Judgment</td>
<td>Split-Half Method Rational equivalence Method</td>
<td>2x.9676 1+.9676 50x11594.9824-319.41x(50-319.41) 11594.9824x49</td>
<td>= .9835</td>
</tr>
</tbody>
</table>

The above reliability co-efficient indicate that the student-teachers ethical behaviour and judgment questionnaire are found to be reliable for the present study.

Validity of the Research Questionnaire

Content validity

Content validity may be referred as rational or logical validity. Content analysis will be more meaningful, if it ensures the validity of the tool by the plan and procedure of test construction. For ensuring the content validity, two major standards should be taken into consideration (Nunnally, 1978); they are i) Representative collection of items, ii) Sensible method of construction of tool. In this study, the investigator followed the two major standards in the process of developing the research tools. In the light of the plan and procedure adopted in developing the tool of student-teachers ethical behaviour and ethical judgmental questionnaires, it can confidently by said that tools have sufficient content validity.
Face Validity or Faith Validity

This kind of validity measure is used to identify the reasonableness of what researcher thinks in his mind to measure through questionnaires. The relevance of the test items to specific situations such as age, teaching experience, location of the training colleges, educational qualification, marital status etc, is also a matter of concern. However, single numerical index of the face validity cannot be calculated. If the judgment of face validity has utilitarian value in helping the researcher to decide whether the items of the questionnaire are relevant to some specific situation, the researchers and the respondents may have high level of motivation which is important for the testing condition. In the present study, the research questionnaire developed by the investigator aimed at measuring what he has through in his mind. Therefore, it is decided that the tools possess face validity.

Intrinsic Validity or Index of Reliability

Since it is directly and closely related to reliability the same condition that affects reliability will also affect intrinsic validity. In a simply way. Intrinsic validity reveals how well they obtained scores measure, the test’s true score components. The intrinsic validity is indicated by the square root of the proportion of true variance or square root of its reliability. The value of intrinsic validity is given in table 3.4.

Construct Validity

Construct validity is determined by investigating the psychological qualities, traits, factors measured by a test. Test constructors who build tests to measure the student-teacher ethical behaviour and ethical judgmental behaviour based on the factors such as unethical behaviour and unethical judgmental activities have demonstrated that the traits studied can be reduced to statistical elements called factors. Construct validity can be logical as well as statistical. In that study, it is hypothesized that differences in student-teachers ethical behaviour are related to a construct called student-teachers ethical judgmental behaviour, other things being equal.
Student-teachers ethical behaviour inventory is made and administered by the investigator and the inventory scores are correlated with other evidences of student-teachers ethical judgmental behaviour. The construct validity scores are given in the table 3.4.

Table 3.4 : Intrinsic and Construct Validity Co-efficient of Student-Teachers Ethical Behaviour and Ethical Judgment Questionnaire

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Tools</th>
<th>Reliability co-efficient</th>
<th>Intrinsic Validity Co-efficient</th>
<th>Construct Validity Co-efficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Questionnaire on identification of Student-Teachers Ethical Behaviour</td>
<td>Split-Half Method .98 Rational Equivalent Method .95</td>
<td>.99 .97</td>
<td>.80 .96</td>
</tr>
<tr>
<td>2</td>
<td>Questionnaire on identification of Student-Teachers Ethical Judgment</td>
<td>Split-Half Method .98 Rational Equivalent Method .86</td>
<td>.99 .93</td>
<td>.96 .89</td>
</tr>
</tbody>
</table>

From the above table, it is found that, all computed Correlation Coefficient are highly valid Hence, it is concluded that all the instruments developed for the present study is highly valid.

Threats to Internal Validity and Their Control

In survey method, there are many threats to internal validity. In the present study, efforts were taken by the investigator to control the threats. The threats and measures taken to control them are discussed below.

1) Selection of Subjects

In the survey research, the selection of subjects may affect the result. In the Present study, the investigator selected the student-teachers who are undergoing training programme in various colleges of education in and around of Pondicherry union area. The investigator selected the colleges of
education and collected responses from all the student-teachers and sufficient number of samples are collected from the student-teachers. Therefore, the selected sample for the present study is fair and adequate.

2) Mortality Threats

Mortality threats occur when the loss of subjects in a comparing group. This threat is considered as most difficulty on among all the threats to internal validity to control. While collecting data, one has left in the middle of the collection and hence there was no necessity to replace the loss of subjects or have control over generalizability and bias.

3) Location Threat

The investigator collected data from the student-teachers in their locality and there was no problem in administering the research tool and there was no intervention which affects the result and responses of the investigation.

4) Instrumentation

The way of using instruments or search tools may also constitute a threat to the study. The instrumentation effects include unstable instrumentation, instrument decay, data collections bias and the characteristics of data collectors are responsible for the present threat. These threats are discussed below.

Unstable Instrumentation

The unstable instrumentation may constitute threats to the internal validity of the investigation. In the present study, the stability of the instrument was established in a systematic way. The tools were developed in a vigorous way. Reliability and validity were established by using appropriate method to standardize the research instrument that were used in the present study.

Instrument Decay

Instrument decay occur when the uniform scoring procedures are not maintained while scoring and the investigator experience mental fatigue also. In the present study, uniform procedure was used in scoring the items of each questionnaire. The investigator structured the questionnaire in such a way to facilitate easy interpretation of results and the investigator never experienced mental fatigue while scoring.
Characteristics of the Data Collector

If different persons are involved in data collection process that may affect the study. This threat was controlled by the investigator by involving himself in the process of data collection and scoring of the respondents’ response.

Bias of the Data Collectors

Due to lack of training, planning and ignorance, the data collectors may unconsciously distort the data. But in this study, this kind of problems did not arise, because the investigator himself visited all the selected colleges of education and collected data for the present study and there is no necessity to train any person to collect data and to have sufficient information which never distort the result of the present study.

History Threats

Normally maturation threat affects the result of the study when it is conducted a number of years due to various factors with the passing of times. In this study, the maturation threat did not affect because the study is surveyed in nature and the data collected from respondents are on only one time basis within a short span of time.

Attitude of Subjects

This threat is mainly based on ‘Hawthorne effect’ that is the way the Subjects view the study and their participation affects the internal validity. In this study, there was no special attention given to any group of student-teachers while administering the tool and the investigator has taken special care to prevent the novelty of the administration of questionnaire.

Implementation Threat

Implementation threat occurs when the two or more implementers of different abilities or personalities were involved in the process of data collection. But this threat did not affect the study, because the investigator was only person who implemented the questionnaire for the present study.

3.7 Data Analysis and Techniques

The data were collected by the investigator by using the reliable and valid tools. After collecting the data, the investigator did the work of editing, classifying, tabulating and recording the data in order to ensure perfect
interpretation of data. The entire collected data were analysed by making use of the statistical packages for social science through computer.

The data analysis was done perfectly by using the following conditions.

i) **Accuracy**

In this study, attempts were made to ensure internal and external validity of the study. During the data collection process, possible response errors were identified and controlled situational errors were also identified and controlled. Accuracy each and every stage of research was ensured in order to get consistency in finding true conclusion.

ii) **Sufficient Data**

When size of the data is increased, the accuracy of the result will enhance and at the same time sufficient data or adequate data helped the researcher to get better analysis and interpretation of data.

iii) **Proper Method of Tabulation and Classification**

The data tabulated by making use of the different methods of tabulation such simple and complex tabulation. The collected data were analysis in a different manner such as descriptive, correlation and differential ex.

iv) **Homogeneous Group of Data**

In the present study, homogeneous of the data were arrived based on the Standardized procedures and uniformity in scoring procedure. If homogeneous group of data were not obtained by the researcher, the result of the study may be affected and the representation will be at low level.

The following statistical procedures were used to analysis and interpret the data by using the software of SPSS-15 version for the present study.

i) **Percentage** Overall, Mean Parentage scores are calculated for student-teacher’s Ethical behaviour and Ethical judgment.

ii) **Mean and SD** Scores were computed by the investigator for Identifying the ethical performance of student-teachers ethical behaviour and ethical judgment.

iii) **Pearson product moment correlation technique** (r-value) to Find out the correlation between the variables of student-teachers ethical behaviour and ethical judgment
iv) ‘T’ test (Test of Significance) to find out the significant of
Difference between the different groups of demographic variables in
connection with different variables of the present study and their dimensions.

v) F-Test to find out the significant difference between more than two
Variables in the groups

3.8 Delimitation of the Study
1. The Study was confined to the area of in and around Pondicherry union
territory.
2. The Study was conducted only for the Student-Teachers who are
undergoing training in 16 colleges of education.
3. The Student-Teachers ethical activities and social responsibility alone
were incorporative in the items and the same are identified the ethical
behaviour and ethical Judgment.
4. The Survey Method alone were considered and questionnaire alone
were considered as a Research Tool to collect data from the
student-teachers.
5. Student-Teacher ethical behaviour are identified only in two aspect 1)
Realistic aspect and 2) Idealistic aspect.

Conclusion
In this chapter, the items selected for the present study, construction
and validation of research tools, sampling technique, data collected and data
analysis procedures were perfectly used by the investigator. In this chapter,
the research boundary is also clearly indicated by the investigator. The next
chapter deals with the analysis and interpretation of data.