CHAPTER - III
RESEARCH DESIGN OF THE STUDY

3.1 Introduction
The choice of adequate methods, tools and techniques is a decisive task. Purpose, nature and scope of the study must be taken under consideration. A cautious preparation and its proper implementation are preconditions to conduct a research successfully with high validity and reliability. There is a well-known saying that ‘Well begun is half done’. So, this chapter has massive implication as it deals with planning with respect to methodology which is the discipline of methods. A blueprint was developed and that was followed by the researcher till the successful completion of research. Thus, this chapter will provide a clear line of action with respect to research design, method, variable, sample and sampling technique, tools and use of statistical techniques.

3.2 What is a Research Design?
“Research design is a plan, structure, and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of the data” Kerlinger (as cited in Kumar, 2009, p.84).
“A traditional research design is a blueprint or detailed plan for how a research study is to be completed – operationalizing variables so they can be measured, selecting a sample of
interest to study, collecting data to be used as a basis for testing hypotheses, and analyzing the results” Thyer (as cited in Kumar, 2009, p. 84).

Thus it can be concluded that a research design has two main functions. The first related to the recognition and / or development of procedures and logistical preparations required to embark on a study, and the second emphasizes the significance of quality in these procedures to ensure their validity, reliability, objectivity and accuracy. Hence, through a research design one can:

- Conceptualize an operational plan to carry out the various procedures and tasks necessary to complete one’s study;

- Ensure that these procedures are adequate to obtain valid, objective and accurate answers to the research questions. Kerlinger calls this function the ‘Control of variance’ (as cited in Kumar, 2009, p. 84).

- Research design and methodology includes taking decisions that are premeditated; they establish the feasibility of the research, assuming that, generally, it is practicable. (According to Cohen, Manio, & Morrison, 2010, p. 81) decisions here include addressing such questions as:

  - What are the specific purposes of the research?
  - How are the general research purposes and aims operationalized into specific research questions?
  - What are the specific research questions?
  - What needs to be the focus of the research in order to answer the research questions?
3.3 Methodology

“Descriptive Survey” method was employed for the research. As present research was to describe and interpret about the status of phenomena” i.e. describing and interpreting status of the ‘Awareness, Interest and Practices of Teachers’ towards Continuous and Comprehensive Evaluation.’ “Descriptive study describes and interprets ‘What is’. It is concerned with condition or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. It is primarily concerned with the present, although it often considers past events and influences as they relate to current conditions” (Best & Khan, 2002, p.105).

The nature of research problem was comprehensive. It was neither possible with quantitative nor qualitative approaches to know the answer of all the research questions. There was a need of both the approaches. So, researcher used a combination of ‘Quantitative’ and ‘Qualitative’ approaches to deal with the present research. “Quantitative and Qualitative research should be considered as continuum rather a
mutually exclusive dichotomy. In fact, in order to answer all of the questions, some research studies need to include both qualitative methods and quantitative methods in the same study” (Best & Khan, 2002, p. 83).

3.4 Variable

“A variable is a property that takes on different values. Putting it redundantly, a variable is something that varies... A variable is a symbol to which numerals or values are attached” Kerlinger (as cited in Kumar, 2009, p. 56). Black and Champion define a variable as “rational units of analysis that can assume any one of a number of designated set of values” (as cited in Kumar, 2009, p.56).

3.4.1 Independent Variable

Independent variable is the reason responsible for bringing about modification(s) in an observable fact or situation. The independent variables under the study are: Awareness, Interest and Practices of Teachers as their effect is presumed cause on dependent variable.

3.4.2 Dependent Variable

Dependent variable is the product of the modification(s) brought about by the cause of an independent variable. The dependent variable under the study is: ‘Continuous and Comprehensive Evaluation’. It depends upon the ‘Awareness, Interest and Practices of Teachers’ for its effective implementation.
3.5 Sample of the Study and Sampling Technique

“Sampling is a process of selecting a few (a sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group” (Kumar, 2009, p.164).

“A population is defined as any group of individuals that have one or more characteristics in common that are of interest to the researcher. The population may be all the individuals of a particular type, or a more restricted part of that group” (Best & Khan, 2002, p. 13).

“A sample is a small proportion of a population selected for observation and analysis. By observing the characteristics of the sample, one can make certain inferences about the characteristics of the population from which it is drawn” (Best & Kahn, 2002, p. 13).

The population for the present research included secondary school teachers’ practicing continuous and comprehensive evaluation in CBSE affiliated schools (KV’s and Private) of Delhi region.

The sampling frame comprised of teachers’ working in KV’s and Private schools of West (B), North-West (B), South, South-West (B) and East districts of Delhi.

Sample comprised of 200 Trained Graduate Teachers’ (TGT) from 10 KV’s and 10 Private schools (Table 3.1)
Table 3.1 Distribution of Teachers’ across Districts and Schools

<table>
<thead>
<tr>
<th>S.No.</th>
<th>District</th>
<th>KV</th>
<th>Private Schools</th>
<th>Total Schools</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>West (B)</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>40 (10 from each school)</td>
</tr>
<tr>
<td>2.</td>
<td>North West (B)</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>40 (10 from each school)</td>
</tr>
<tr>
<td>3.</td>
<td>South</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>40 (10 from each school)</td>
</tr>
<tr>
<td>4.</td>
<td>South West (B)</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>40 (10 from each school)</td>
</tr>
<tr>
<td>5.</td>
<td>East</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>40 (10 from each school)</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td>10</td>
<td>10</td>
<td><strong>20</strong></td>
<td><strong>200</strong></td>
</tr>
</tbody>
</table>

3.5.1 Selection of the Districts

'Simple Random Sampling Technique' was used for selection of districts of Delhi. The researcher generated five random number in MS Excel with the help of a formula, the formula is = rand between (lower limit, upper limit). Delhi has twelve districts, so the formula was used as rand between (1, 12), this process returned a random number between 1 and 12. I repeated this process four times and got five random numbers. I selected five districts with serial number returned in the process of random number generation. This process discarded researcher bias. For the selection of districts with respect to KV’s, researcher purposively used “Educational District” as being used by the Directorate of Education, Delhi. Broadly there are in all 12 educational districts as against K.V. schools which are not widely distributed in all twelve districts.

3.5.2 Selection of the Schools

The researcher selected twenty schools (10 KV’s and 10 Private) in total for the above study. 'Simple Random Sampling Technique' was used for selection of Private and KV’s
schools of Delhi. In case of Private schools, list of schools in the five districts (West (B), North-West (B), South, South-West and East) was identified from http://delhi.gov.in/wps/wcm/connect/DOIT_Education/education/home/about+us/list+of+public+schools+recognised+by+doe as updated on April 2012. The list showed 1,278 schools across all the twelve affiliated to Central Board of Secondary Education (CBSE) and recognized by Directorate of Education (DOE).

The researcher generated two random number in MS Excel with the help of a formula, the formula is =rand between (lower limit, upper limit). West (B) district had 176 schools, so the formula used as rand between (1, 176), this process returned a random number between 1 and 176. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the West (B) district with serial number returned in the process of random number generation. This process discarded researcher bias.

North West (B) district had 172 schools, so the formula used as rand between (1, 172), this process returned a random number between 1 and 172. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the North West (B) district with serial number returned in the process of random number generation. This process discarded researcher bias.

South district had 120 schools, so the formula used as rand between (1, 120), this process returned a random number between 1 and 120. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the South district with serial number returned in the process of random number generation. This process discarded researcher bias.
South West (B) district had 155 schools, so the formula used as rand between (1, 155), this process returned a random number between 1 and 155. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the South West (B) district with serial number returned in the process of random number generation. This process discarded researcher bias.

East district had 138 schools, so the formula used as rand between (1, 138), this process returned a random number between 1 and 138. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the East district with serial number returned in the process of random number generation. This process discarded researcher bias.

In case of KV’s, list of schools across the districts was identified from http://delhi.gov.in/wps/wcm/connect/DOIT_Education/education/home/about+us/list+of+kvs+schoo as updated on 17th June, 2010. The list showed 42 schools across 9 districts affiliated to Central Board of Secondary Education (CBSE).

The researcher generated two random number in MS Excel with the help of a formula, the formula is =rand between (lower limit, upper limit). West (B) district had 3 schools, so the formula used as rand between (1, 3), this process returned a random number between 1 and 3. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the West (B) district with serial number returned in the process of random number generation. This process discarded researcher bias.

North West (B) district had 8 schools, so the formula used as rand between (1, 8), this process returned a random number between 1 and 8. The researcher repeated this process
one more time and got two random numbers, and two schools got selected in the North West (B) district with serial number returned in the process of random number generation. This process discarded researcher bias.

South district had 7 schools, so the formula used as rand between (1, 7), this process returned a random number between 1 and 7. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the South district with serial number returned in the process of random number generation. This process discarded researcher bias.

South West (B) district had 6 schools, so the formula used as rand between (1, 6), this process returned a random number between 1 and 6. The researcher repeated this process one more time and got two random numbers, and two schools got selected in the South West (B) district with serial number returned in the process of random number generation. This process discarded researcher bias.

The researcher would like to mention, that in the East district as only two K.V schools are there, so these two schools were chosen as the study sample.

The schools selected requested not to mention their names and to use the data collected from the respective schools only for research purpose. The researcher agreed to the same as part of research ethics.

3.5.3 Selection of the Teachers

For collecting data with respect to awareness and interest variables, data was 200 teachers, and from each district 10 teachers’ were selected through purposive sampling technique as the purpose of the researcher was to study the Awareness, Interest, and Practices of secondary teachers’ teaching class IX and X.
For classroom observation, since the sample consisted of only one English teacher from class IX out of four-five teachers’ of English approximately (depending upon the number of sections) available in the school, one teacher was selected through lottery system of random sampling technique, wherein there was equal probability of each teacher being selected. The same teacher was interviewed to bring to focus significant analysis and interpretation.

The teachers selected requested not to mention their names and to use the data collected from the respective schools only for research purpose. The researcher agreed to the same as part of research ethics.

3.6 Tools of Data Collection

“There are two major approaches to gathering information about a situation, person, problem or phenomenon. Sometimes, information required is already available and need only be extracted. However, there are times when the information must be collected. Based upon these broad approaches to information gathering, data are categorized as:

- Secondary data
- Primary data

Information gathered using the first approach is said to be collected from secondary sources, whereas the sources used in the second approach are called primary sources. Examples of secondary sources include the use of census data to obtain information on the age-sex structure of a population; the use of hospital records to find out the morbidity and mortality patterns of a community; the use of an organization’s records to ascertain its activities; and the collection of data from sources such as articles, journals, magazines,
books and periodicals to obtain historical and other types of information. On the other hand, finding out firsthand the attitude of a community towards health services, ascertaining the health needs of a community, evaluating a social program, determining the job satisfaction of the employees of an organization, and ascertaining the quality of services provided by a worker are examples of information collected from primary sources. In summary, primary sources provide first-hand information and secondary sources provide second-hand data” (Kumar, 2009, p.118).

As the introduction of CCE at secondary level is a new conception so, none of the standardized tools related to CCE were available. So, following four tools were self-developed which are as follows:

- Awareness questionnaire for teachers
- Interest Inventory for teachers
- Checklist for observing the practices of teachers’
- Observation as a technique and recorded in the form of field notes
- Interview Schedule for teachers’

**Description of the tools used**

3.6.1 **Name of the tool**- The tool was entitled as “*Teachers’ Awareness Questionnaire towards Continuous and Comprehensive Evaluation.*”

**Operational Definition**-

**Awareness** is the information which the teachers’ have with respect to the various components of continuous and comprehensive evaluation.

**Rationale for the development** - The researcher opted for developing the tool herself as the researcher couldn’t find any studies directly concerning continuous and
comprehensive evaluation. Also the studies she could find mostly focused on grading system; teachers’ attitude perception, and awareness regarding new system of evaluation; CCE at primary level; secondary teachers’ conception of Co-Curricular Activities (CCA’s) and its impact on student’s academic achievement; understanding and use of formative assessment strategies by teachers’ which revealed that self-developed tools were being used to study the above issues related to CCE. From the above studies, information regarding the various tools was obtained in terms of whether it was standardized/ non-standardized, types of items, determining the validity and reliability, scoring procedure etc.

The question of why only questionnaire (close ended) was decided for testing teachers’ awareness was mainly due to the fact that it would not have been feasible to conduct interviews for all the two hundred teachers’ as schools declined to give the permission to conduct the same during school hours, and neither the teacher themselves could have given time for the same outside school hours.

Through questionnaire, it’s easier to collect data when the sample is large through the use of different modes (personally giving the questionnaire or through mail).

Teachers’ Awareness Questionnaire towards Continuous and Comprehensive Evaluation is a close ended questionnaire, wherein out of five options, teachers’ were required to tick mark the most appropriate option. This is meant for teachers’ teaching secondary classes of IX and X. It consists of fifty multiple choice questions covering various components of CCE. All the options are mutually exclusive.

1. Development of Tool
The supervisor, experts from various disciplines, eminent faculty of USE (University School of Education, Guru Gobind Singh Indraprastha University) provided their valuable inputs with respect to the steps followed in the construction of a tool.

The following steps were part of the process to develop the tool of Awareness questionnaire:

**STEP 1- Collection of items**

A. An extensive review of existing literature was done with respect to provide operational definition of the variable. For this, researcher explored the research studies, books, encyclopedia, journals; articles based on the said variables and tried to find out how the other researchers in foreign studies have defined it. Based on the definitions available on awareness, researcher in consultation with her supervisor operationally defined the term for the study.

B. Interviewed teachers in the form of informal interaction

For the initial collection of items with respect to continuous and comprehensive evaluation, the researcher thought it to be an appropriate way to first talk to teachers through informal interaction and welcome their views regarding CCE. The researcher visited two Government and two Private schools and randomly spoke to teachers’ on CCE, for instance how do they perceive the new evaluation system, how is it different from the older evaluation system, their views on grading system, types of assessment, scholastic and co-scholastic areas, feedback, tools and techniques of formative assessment etc. The researcher got a very frank and honest opinion about CCE, since the interaction was carried out in an informal manner. So, in this way
formulation of items could be given a concrete shape on the basis of sharing on the part of the teachers’.

C. Mail was also sent to teachers known by the researcher personally to share their views on CCE and though teachers’ took a lot of time in responding back, but again the researcher could get diversity of responses concerning CCE. They were asked to write down their own perspective concerning the recent examination reforms, how it was different from the traditional pattern of assessment, and also how it was benefitting both the teacher as well as student community.

On the basis of the analysis of existing literature, informal interaction and mail responses, 81 items were initially developed by the researcher. Five items were also taken from Teachers’ Awareness about Implementation of Continuous and Comprehensive Evaluation in Schools, paper presentation done at a National Conference at NCERT, Delhi from 21st-23rd March, 2012 by Dr. Gitanjali Mohanty and Prof. S.C Panda. Permission was granted for the same telephonically and mail was also sent in this regard.

**STEP 2- Selection of items**

A. The next step for the researcher was to find the components with respect to the variable of awareness. The researcher had a lot of brainstorming sessions with teachers and principals of various schools (Government and Private), consulted the CBSE manual for teachers, analyzed NCF-2005 and identified the components with respect to awareness of teachers’ towards continuous and comprehensive evaluation.

B. Items were framed based on the components identified.

C. Initial draft contained 81 items related to awareness questionnaire in the form of MCQ’s with 3 options. The first draft was reviewed by the supervisor as well as by the research
scholar specifically to check the duplication of items, language ambiguity, and item appropriateness in terms of variables to be researched upon.

D. After reviewing the statement it was found out that 10 items were rejected in awareness questionnaire due to lack of clarity, doubling of items, use of language, and inappropriate items vis-a-vis operational definition of the variables. Also, when it was pilot tested on 50 teachers’, they had expressed their concern for few items. It was decided in consultation with the supervisor on the basis of the suggestions from the experts to increase the number of options from 3 to 5 in case of Awareness questionnaire to minimize the guess work and enhance thinking on the part of the teachers.

E. After that first draft of awareness questionnaire was given to 12 experts. These experts were from the field of Psychology, Measurement and Evaluation, Ex-Interim Director of Center for Assessment Evaluation and Research (CAER) and language experts.

F. The experts reviewed the tools on the basis of the operational definition, objectives, doubling of the items, item ambiguity, item appropriateness as well as the options. On the basis of the feedback and suggestions provided by the majority of the experts, 21 items were rejected in the awareness questionnaire. It was considered to be a comprehensive tool to find out the awareness of the teachers.

**STEP 3- Finalization of tool**

The selected items 50 (fifty in number) were arranged in components as per the suggestions of the twelve experts:

1. Awareness of teachers on what is CCE and purpose of CCE
2. Characteristics of CCE
3. Benefits of CCE
4. Types of assessment
5. Aspects of CCE(term, diagnostic, remedial, grading scale, CGPA)
6. Co-scholastic area
7. Tools and techniques
8. Organization of assessment

On the basis of the raw scores obtained, percentile norms were determined in the table below leading to the interpretation in terms of the level of awareness possessed by the teachers:

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>P96 and above</td>
<td>40 above</td>
<td>Very high awareness</td>
</tr>
<tr>
<td>P79-P95</td>
<td>35-39</td>
<td>High Awareness</td>
</tr>
<tr>
<td>P11-P78</td>
<td>12-35</td>
<td>Average Awareness</td>
</tr>
<tr>
<td>P5-P10</td>
<td>9.05-11</td>
<td>Low Awareness</td>
</tr>
<tr>
<td>P4 and below</td>
<td>9 and less than 9</td>
<td>Very Low Awareness</td>
</tr>
</tbody>
</table>

**STEP 4-Tool Effectiveness (Reliability and validity)**

**Validity** of the tool was determined by twelve experts in relation to content validity.

**Reliability** The Cronbach reliability co-efficient on the overall scale measured 0.77.

**TEACHERS’ INTEREST INVENTORY**

3.6.2 Name of the tool- The tool was self-developed entitled as “Teachers’ Interest Inventory towards Continuous and Comprehensive Evaluation.”
Operational definition-

**Interest** implies the liking of teachers’ towards various components of continuous and comprehensive evaluation.

Rationale for the development- The researcher opted for developing the tool by herself since the researcher couldn’t find any studies directly concerning continuous and comprehensive evaluation. Also, the studies the researcher could find mostly focused on grading system; teachers’ attitude, perception, and awareness regarding new system of evaluation; CCE at primary level; secondary teachers’ conception of CCA’s and its impact on student’s academic achievement; understanding and use of formative assessment strategies by teachers’. Also, the researcher couldn’t find any study related to probing teachers’ interest towards various components of CCE.

The question of why only Interest Inventory was decided to gauge teachers’ likes towards various components of continuous and comprehensive evaluation, as it was suggested by the supervisor along with experts that an Inventory is preferable as a technique used for collecting information from the respondents. It usually includes a large number of questions so that the respondents can reveal their interests, personality, values, habits, etc. Further, it is also used as a tool to gauge and establish an individual’s personal distinctiveness, such as adjustment in relation to pertinent situations, or propensity towards introversion or extroversion; may be set for self-rating or rating by others. It is a simple self-reporting tool to congregate respondent’s interest.

Teachers’ Interest Inventory for CCE was a five-point directional categorical devise. The choices were from strongly like, like, uncertain, dislike, and strongly dislike with assigned scores ranging from 5, 4, 3, 2, and 1. In the Inventory, out of five categories,
teachers’ were required to tick mark the category of their choice and there was no right or wrong answer. This was meant for teachers’ teaching secondary classes of IX and X. It had forty three items covering various components of CCE. All the items were mutually exclusive.

**Development of the tool**

The supervisor, experts from various disciplines, eminent faculty of USE (University School of Education, Guru Gobind Singh Indraprastha University) provided their valuable inputs with respect to the steps followed in the construction of a tool.

An extensive research was conducted with respect to operational definition of the variable. For this, researcher explored the research studies, books, encyclopedia, journals; articles based on the said variable and tried to find out how the other researchers in foreign studies have defined it. Based on the definitions available on interest, researcher in consultation with her supervisor operationally defined the term for the study.

The following steps were followed to develop the tool of Interest Inventory:

**Step 1: Collection of items**

1. Reviewed the existing literature related to standardized vocational interest inventories, wherein, items were studied and tool was described in detail. The items were mentioned pertaining to the specific area of research. The different items in relation to various studies generated ideas for the researcher in terms of how it is first important to think about the components of the area to be researched.

2. Interviewed teachers in the form of informal interaction

For the initial collection of items with respect to continuous and comprehensive evaluation, the researcher thought it to be an appropriate way to first talk to teachers
through informal interaction and welcome their views regarding CCE. The researcher visited two Government and two Private schools and randomly spoke to teachers’ on CCE, for instance how do they perceive the new evaluation system, how was it different from the older evaluation system, their liking towards various components of CCE. The researcher got a very frank and honest opinion about CCE, since the interaction was carried out in an informal manner. So, in this way formulation of items could be given a concrete shape on the basis of sharing on the part of the teachers.

3. Mail was sent to teachers known by the researcher personally to share their views on CCE and though teachers’ took a lot of time in responding back, but again the researcher could get diversity of responses concerning CCE. They were asked to write down their own thought concerning their personal likes towards various components of CCE, and also how it was benefitting both the teacher as well as student community.

On the basis of the analysis of existing literature, informal interaction and mail responses, 80 items were initially developed by the researcher.

**STEP 2-Selection of the Items**

The next step for the researcher was to find the components with respect to the variable of interest. The researcher had a lot of brainstorming sessions with teachers and principals of various schools (Government and Private), consulted the CBSE manual for teachers and identified the components with respect to interest of teachers’ towards continuous and comprehensive evaluation.

The first draft was reviewed by the supervisor as well as by the research scholar specifically to check the duplication of items, language ambiguity, and item appropriateness in terms of variables to be researched upon. After reviewing the
It was found out that 15 items were rejected in the interest inventory due to lack of clarity, doubling of items, grammatical error and inappropriate items vis-a-vis operational definition of the variables. After that first draft of the interest inventory was given to twelve experts. These experts were from the field of Psychology, Evaluation, Educationists, and Ex-Interim Director of CAER and language experts. The experts reviewed the tools on the basis of the operational definition, objectives, doubling of the items, item ambiguity, item appropriateness, along with the objectives and research questions as well as the options to judge the correctness and suitability of the items. On the basis of the feedback and suggestions provided by the majority of the experts, 9 items were rejected in the interest inventory as the items were found irrelevant vis-a-vis the operational definition. Final 56 items were there in the first try-out for the interest inventory. Try-out was done to ensure that out of these 56 items, any of the item which teachers feel not appropriate or finding any item difficult to understand will be deleted. During the first try-out, the tool was given to a sample of 60 teachers of government and public schools. This was given to five experts to check the validity of the items. Responses were analyzed and t-ratio was applied between high and low group so that final set of items are selected for final administration. The final number of items stands to 43 items for the interest inventory. 13 items got rejected.

**Step 3: Finalization of tool**

The selected items 43 (forty three in number) were arranged in components as per the suggestions of the twelve experts:

1. Aims of CCE
2. Teaching–learning process
3. Co-scholastic area

4. Grading system

5. Formative assessment

6. Summative assessment

7. Diagnostic evaluation and remedial measures

8. Feedback

9. Tools and techniques

10. Descriptive indicators

11. Record maintenance

On the basis of the raw scores obtained, norms were determined as in the table below leading to the interpretation in terms of the level of interest possessed by the teachers:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Scores</th>
<th>Levels of Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>More than 223</td>
<td>Very high Interest</td>
</tr>
<tr>
<td>2.</td>
<td>208-223</td>
<td>High Interest</td>
</tr>
<tr>
<td>3.</td>
<td>190-207</td>
<td>Above average Interest</td>
</tr>
<tr>
<td>4.</td>
<td>158-190</td>
<td>Average Interest</td>
</tr>
<tr>
<td>5.</td>
<td>157-142</td>
<td>Below average Interest</td>
</tr>
<tr>
<td>6.</td>
<td>141-125</td>
<td>Low Interest</td>
</tr>
<tr>
<td>7.</td>
<td>Less than 125</td>
<td>Very Low Interest</td>
</tr>
</tbody>
</table>

**Tool Effectiveness (Validity and Reliability)**

**Validity** of the tool was determined by the twelve experts in relation to content validity.
After a gap of 15 days, again the interest inventory was provided to the same sixty teachers’. Test- Retest Reliability method of reliability was determined for sixty teachers’ and the value stood at .906.

Table 3.4 Test-Retest Reliability of Interest Inventory

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Test-retest Correlation</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0.906</td>
<td>.01</td>
</tr>
</tbody>
</table>

CHECKLIST FOR OBSERVATION

3.6.3 Name of the tool - The tool was entitled as “Checklist for observing the formative assessment practices of English teachers.”

So, operationally, practices in the present study imply the procedure employed to conduct formative assessment by English teachers’ in the manner prescribed as per the guidelines given by the CBSE in teachers’ manual.

Rationale for the development- The researcher opted for developing the tool by herself since at the time of deciding the area of her research work, and when the researcher’s topic got finally registered, she couldn’t find any studies directly concerning continuous and comprehensive evaluation. Also the studies she could find mostly focused on grading system; teachers’ attitude, perception, and awareness regarding new system of evaluation; CCE at primary level; secondary teachers’ conception of CCA’s and its impact on student’s academic achievement; understanding and use of formative assessment strategies by teachers’. From the above studies, information regarding the tool, reliability and validity, types of items etc was obtained.
The question of why only checklist was decided was to observe the practices of English Language teachers’ (Class IX) in implementing CCE. For Checklist, the researcher came across various standardized observation scales and checklist in existing literature, along with observation scale, self-review form, CBSE manual for class IX and X, teachers’ manual on formative assessment (Class IX) available on the CBSE website. Through checklist the researcher would first get an idea of whether the practice is prevalent or not keeping in mind the components for observing their practices. It was suggested by the supervisor and experts to use checklist as against questionnaire or interview to observe the actual practice which will not be foreseen through the latter.

Checklist for observing the practices of English teachers’ was an open ended tool to be used by the investigator while doing classroom observation. It contained 18 items with several options against which the researcher has to mark yes or no. There was also the option of ‘any other’ apart from the already mentioned options. This tool was meant for observing class IX teachers’ while teaching English in the classroom to study what procedure was followed by the teachers’ in implementing CCE. All the items were mutually exclusive.

1. **Development of the tool**

Checklist for observing the practices of English language teachers’

**Step 1: Collection of items**

1. Reviewed the existing literature related to various standardized observation scales, checklists and other material (CBSE teachers’ manual on formative assessment, manual on CCE, by SCERT), etc. uploaded on CBSE website were studied and understanding was developed with respect to identification of the components and the respective items.
2. Interviewed teachers in the form of informal interaction

For the initial collection of items with respect to practices of English language teachers’ in implementing continuous and comprehensive evaluation, the researcher thought it to be an appropriate way to first talk to teachers through informal interaction and welcome their views regarding CCE in terms of how do they implement CCE in relation to tools and techniques used by them, development of language skills, assessment of sub-skills, maintenance of records etc. The researcher visited two Government and two Private schools and randomly spoke to teachers’ on CCE in relation to the above aspects. The researcher got a very frank and honest opinion about CCE, since the interaction was carried out in an informal manner. So, in this way formulation of items could be given a concrete shape on the basis of sharing on the part of the teachers’.

3. Mail was sent to teachers known by the researcher personally to share their views on CCE and though teachers’ took a lot of time in responding back, but again the researcher could get diversity of responses concerning practices adopted by them in implementing CCE. Also how it was benefitting both the teacher as well as student community.

On the basis of the analysis of existing literature, informal interaction and mail responses, initially forty (40) items were formulated to observe the formative assessment practices.

**Step 2 : Selection of Items**

An extensive research was conducted with respect to providing operational definition of the variable. For this, researcher explored the research studies, books, encyclopedia, journals; articles based on the said variable and tried to find out how the other researchers in foreign studies have defined it. Based on the definitions available on practices,
researcher in consultation with her supervisor operationally defined the term for the study. These 40 items were discussed with my supervisor and a language expert. After reviewing the items it was found out that CCE is very vast and would be an arduous task to observe for all subject teachers’. It was decided in consultation with the supervisor to focus only on the formative assessment practices of English teachers’ of class IX the since the researcher herself has expertise and experience in English language teaching. After that, first draft of Checklist with the help from the self-review form that is available on the CBSE website, six items were adapted as per the requirement of the study. Also from (SCERT, 2012, pp.18-19) sub-skills related to reading skills were referred. Sub-skills related to listening and speaking were referred from the CBSE web link of http://alappuzhasahodaya.org/wp-content/themes/vantage/downloads/cbsecirculars/27_ASL_for_Teacher_s_%20Book.pdf For sub-skills related to writing skill, researcher referred Miguelbenga8 kinds of varied skills involved in writing. This was given to almost experts from the field of Psychology, Evaluation, Educationists, Ex-Interim Director of CAER and two language experts. The experts reviewed the tools on the basis of the operational definition, objectives, doubling of the items, item ambiguity, item appropriateness, along with the objectives and research questions as well as the options to judge the correctness and suitability of the items. On the basis of the feedback and suggestions provided by the majority of the experts, few options needed clarity and it was suggested to keep it open ended as it was not necessary that a teacher might use the same as mentioned in the option. Only content validity was determined. Out of 40 items, 20 items were rejected keeping in mind the feasibility of the
study. Pilot testing was also done by the researcher on 4 teachers’ belonging to KV, and private schools. Again some clarifications were needed since researcher was not able to observe aptly in response to two items. This was discussed with supervisor and other experts in relation to which researcher was advised to reject two items making the total number of items 18.

**Step 3: Finalization of tool**

The selected items 18 (eighteen in number) were arranged in components as per the suggestions of the experts:

1. Activities for Language skills assessment
2. Assessment of sub-skills under language skills
3. Criteria/parameters for assessing language skills
4. Tools for formative assessment
5. Different forms of record for formative assessment
6. Feedback of formative assessment
7. Assessment of gifted and slow learners’
8. Program of remediation and enrichment

In addition to the above checklist, observation as a technique was also used by the researcher and the same was recorded in the form of narrative with the help of field notes. The researcher observed one English language teacher from each school at least three to four times to see the actual practices conducted by the teachers in implementing CCE.

**Tool Effectiveness (Validity and Reliability)**

**Validity** of the tool was determined by the experts in relation to content validity.
Reliability- Since, the researcher herself did all the observations so no intra-observable reliability was needed. This was also done to make sure that no matter to what extent the teachers might be aware and interested, but do they practice CCE also with the similar spirit or not?

INTERVIEW SCHEDULE FOR THE TEACHERS'

3.6.4 Name of the tool- The tool was entitled as “Interview schedule for identifying and studying the problems faced by teachers’ in implementing CCE”.

In the study, the researcher studied the problems as perceived by the teachers in implementing CCE. Since problems could be of diverse nature, researcher classified them as: a) Physical b) psychological c) pedagogical and d) administrative/managerial.

Rationale for the development-The researcher opted for developing the tool by herself since at the time of deciding the area of her research work, and when the researcher’s topic got finally registered; she couldn’t find any studies directly concerning continuous and comprehensive evaluation. Also the studies she could find mostly focused on grading system; teachers’ attitude, perception, and awareness regarding new system of evaluation; CCE at primary level; secondary teachers’ conception of CCA’s and its impact on student’s academic achievement; understanding and use of formative assessment strategies by teachers’. From the above studies, information regarding the tool, reliability and validity, types of items etc. was obtained.

The question of why only interviewing as a technique was decided, was to identify the constraints faced by the teachers’ in implementing CCE. For the interview schedule, the researcher came across various self-developed structured open-ended interview schedule occurring in various Ph.D thesis, review of related literature, implications for teachers’
mentioned in teachers’ manual on formative assessment (Class IX) available on the CBSE website. Through interviewing, the researcher asked predetermined set of questions, using the same wording and order of questions as specified in the interview schedule. The interview schedule consisted of written list of questions mainly open-ended for person-to-person interaction (either face-to-face, by telephone or by other electronic media). The interview is one of the most fitting approaches for accumulating in-depth information through inquiry. It would help in complementing information obtained from responses with those gained from observation of non-verbal reactions, providing consistent information, which will make certain comparability of data and would require less interviewing skills than does unstructured interviewing.

Interview schedule for identifying and studying the constraints perceived by the teachers’ while implementing CCE was an open ended tool to be used by the investigator post classroom observation. It contained 12 items pertaining to different categories of constraints such as physical, psychological, pedagogical administrative/managerial and miscellaneous. This tool was meant for class IX teachers’ who were observed for practices, in order to understand respondents’ perspectives in implementing CCE, their concerns, their suggestions as expressed in their own words.

**Development of the tool**

**Step 1: Collection of Items**

1. Reviewed the existing literature related to various self–developed structured interview along with other material (CBSE teachers’ manual on formative assessment, Manual on CCE, by SCERT) etc. uploaded on CBSE website were studied and understanding was developed with respect to identification of the respective items.
2. Interviewed teachers in the form of informal interaction

For the initial collection of items with respect to the problems faced by teachers’ in implementing continuous and comprehensive evaluation, the researcher thought it to be an appropriate way to first talk to teachers through informal interaction and welcome their views regarding CCE in terms of how do they implement CCE in relation to tools and techniques used by them, maintenance of records, provision of descriptive feedback, organization of assessment etc. The researcher visited two Government and two Private schools and randomly spoke to teachers’ on CCE in relation to the above aspects. The researcher got a very frank and honest opinion about CCE, since the interaction was carried out in an informal manner. So, in this way formulation of items was given a concrete shape on the basis of sharing on the part of the teachers’.

2. Mail was also sent to teachers known by the researcher personally to share their views on CCE and though teachers’ took a lot of time in responding back, but again the researcher could get diversity of responses concerning practices adopted by them in implementing CCE along with briefly describing the problems, and also how it was posing as a challenge for both the teacher as well as student community.

On the basis of the analysis of existing literature, informal interaction and responses received through mail, initially twenty one items were formulated in relation to the problems perceived by the teachers’ in implementing CCE.

**Step 2 : Selection of items**

An extensive research was conducted with respect to provide operational definition of the variable. For this, researcher explored the research studies, books, encyclopedia, journals;
articles based on the said variable and tried to find out how the other researchers in foreign studies have defined it.

These 21 questions were discussed with the supervisor and two language experts. After reviewing the questions, it was found out that initially questions had been framed not giving due consideration to the categories of problems. It was decided in consultation with the supervisor to first work out the categories of problems and then put at least 2-3 questions under each category. After that first draft of interview schedule was given to twelve experts. These experts were from the field of Psychology, Evaluation, Educationists, Ex-Interim Director of CAER and two language experts. The experts reviewed the tools on the basis of the operational definition, objectives, doubling of the items, item ambiguity, item appropriateness, along with the objectives and research questions. On the basis of the feedback and suggestions provided by the majority of the experts, few questions needed clarity and few had to be deleted due to overlapping meaning. Content validity was determined. Out of 21 questions, 5 items were rejected.

Pilot testing was also done by the researcher on 4 teachers’ belonging to K.V, and private schools. Again some clarifications were needed since most teachers’ brought up mostly the same points of discussion in few questions. This was discussed with supervisor and other experts in relation to which researcher was advised to reject four of them, making the total number of questions to twelve.

**Step 3: Finalization of tool**

The selected items 12 (twelve in number) were arranged in accordance with the categories in a sequence as per the suggestions of the experts. The five categories of problems were:
1. Physical
2. Psychological
3. Pedagogical
4. Administrative/managerial
5. Miscellaneous

**Tool Effectiveness (Validity and Reliability)**

**Validity** of the tool was determined by the experts in relation to content validity.

**Reliability** - For determining reliability, questions were restated in slightly different form at a later time in the interview. The researcher obtained almost similar responses for the same.

**3.7 Plan and Procedure of Data Collection**

While the process for finalizing the tools was going on, the researcher took permission from the KVS, Delhi region dated 18th September, 2012 and also from the Private schools as per their convenience for the smooth conduct of the study. The investigator took permission from University School of Education, GGSIP University for both categories of schools.

After consultation with the supervisor, the *first phase* of data collection started after 13th of November, 2012 and continued till mid of February 2013. Before this process, researcher had identified ten K.V schools and ten Private schools, Delhi region covering five districts namely: West, North-West, South, South-West and East Delhi region. For the selection of districts, researcher purposively used “Educational District” as being used by Directorate of Education, Delhi. Broadly there in all 12 educational districts. A
personal visit to all the twenty schools was made by the researcher wherein, the permission from the Principals was officially taken and the purpose of the data collection was also explained. From each school, ten teachers’ at secondary level teaching different subjects depending upon the number of sections available in the schools were identified and personally contacted as per their convenience and availability by handing over both the awareness questionnaire as well as the interest inventory to fill up the same. It was also kept in mind by the researcher to hand over the interest inventory to the same teachers who were handed the awareness tool. It took the researcher nearly four months for the distribution and collection of the awareness questionnaire and Interest inventory.

Data collection was divided into phases:

Phase 1: This phase started in August, 2012, wherein permission was sought from University school of education to collect data from Government and Private schools. Unfortunately, permission was not granted by Government schools, so the researcher tried for Central Government KV schools and ultimately got the permission from the Deputy Commissioner. The researcher personally visited all the twenty schools (10 K.V’s and 10 Private) with the letters regarding granting permission in the districts of West (B), North West (B), South, South-West, and East. It took the researcher around 10 days to seek the permission from the schools by explaining the purpose of the study, and the ethical concerns were also shared with the principals of the school. It took the researcher around 15 days to get the approval from the Principals regarding data collection. In the month of November 2012, the researcher first approached the KV schools with the awareness questionnaire and interest inventory and personally met 10 teachers of each school. The researcher first explained the purpose of both the tools, read
the instructions clearly and then distributed the same. Few teachers’ filled in the questionnaire and inventory face to face while, few told to collect on the day as per their convenience. It took around 25 (twenty five) days to collect back the awareness and interest inventory. Exactly after a gap of 15 days, the researcher again distributed the interest inventory to around sixty teachers’ to determine the test-retest reliability. After collecting from the K.V schools, researcher approached the private schools and distributed the questionnaire and interest inventory to the teachers’. Some teachers’ filled in the questionnaire and inventory face-to-face while, the other teachers’ mentioned the specific day and date to collect the same. By the end of March 2013, researcher collected the data with respect to both awareness questionnaire and interest inventory. During the visit to schools, researcher also did an informal interaction with teachers’ to know what kind of problems they faced during implementing CCE. On an average, there were around 3-4 visits done in every school.

**Phase II:** In the first phase, which started in August 2012, taking permissions from schools and in November 2012, wherein the researcher visited the schools and continued till March 2013, data was collected majorly with respect to awareness and interest variables. In the month of April, again a visit was made by the researcher to all the twenty schools and meeting the Principal in person to take their permission for classroom observation of one English teacher teaching the IX class. The second phase started in the second week of April 2013 during formative assessment I and II. The researcher observed one English teacher of class IX at least three times which made the total up to 60 lessons. The duration of each class was 30 minutes in K.V schools and 35 minutes in private schools. The researcher observed the class with the help of checklist and did the
classroom observation and recorded in the form of field notes for both quantitative and qualitative analysis. On an average, there were around 2-3 visits in every school. The observation continued till August 2013. During this phase, the researcher also took permission for conducting interviews of the same teachers’. The researcher had already prepared the first draft of the interview schedule, so first it was pilot tested on total five teachers’ to get their feedback on the same. After getting the valuable inputs from teachers’ as well as experts, as per their convenient day and time, researcher conducted the interview. The researcher interviewed one English language teacher of class IX which started in July 2013 and continued till first week of September 2013. When teacher couldn’t give time to the researcher in school, interview was conducted telephonically. While asking questions, researcher would just listen to the teacher first, and after it got over, researcher would prepare short notes of the same. Later on, these notes were worked upon in elaboration keeping the brief notes in focus. On an average, there were around 1-2 visits done in every school.

3.8 Statistical Techniques and Package

For proper analysis and interpretation of data, study included both qualitative and quantitative data analysis methods. “Quantitative data analysis has no greater or lesser importance than qualitative analysis. Quantitative data analysis is a powerful research form, emanating in part from the positivist tradition” (Cohen, Manion& Morrison, 2010, p.501). “Qualitative data analysis on the other hand involves organizing, accounting for and explaining the data; in short, making sense of data in terms of the participants’ definition of the situation, noting patterns, themes, categories and regularities” (Cohen,
Manion & Morrison, 2010, p.461). A Simple statistical technique like frequency percentage analysis was employed for awareness, interest inventory, and checklist. For classroom observation, recording was done through narrative which was analyzed qualitatively. Interview was analyzed by first identifying the common themes under which different responses of the teachers’ were recorded which was followed by percentage frequency analysis. SPSS package was used mainly to find out the test-retest reliability of Interest inventory.

3.9 Overview

This chapter has thoroughly looked at the research methodology that was used to collect and process the data. Research design has been explained with much elaboration wherein, blueprint was developed and that was followed by the researcher till the successful completion of research. Thus, the chapter delineates a clear line of action with respect to methodology, variables, sample, sampling technique, tools and use of statistical techniques.