CHAPTER-II
DEVELOPMENT AND DESCRIPTION OF TOOLS

In the preceding chapter, the introduction, variables of the study, the theoretical framework, review of related literature, objectives and the hypotheses of the study were discussed. The present chapter has been devoted to the development and description of the tools required for the purpose of data collection. For the present study the following tools were used:

• Innovations-Checklist
• Innovation Awareness Test
• Change Sustenance Scale
• Professional Competence Scale
• Interview Schedule

The steps involving planning, preparation and finalization of the tools have been discussed in the following section.

• Innovations-Checklist

A checklist of innovations developed by Bagga (1982) was adapted to identify the innovations presently being practiced by the elementary schools. Section A of the checklist contains 7 items, pertaining to the general information about the school. The items were:

1. Name of the school
2. Management of the school
3. Year of establishment
4. Type of school
5. Location of the school
6. Strength of the school
7. Strength of the teaching staff

Section B of the checklist deals with introduction of innovations in the school. There were 23 innovations listed in the checklist. The innovations were institutional planning, cumulative record card, co-operative store, educational
and vocational guidance, hobby clubs, decentralized planning. Health and physical education, mid-day meals, new type tests, programme for education of gifted pupils, remedial teaching for backward pupils, parent teacher association, in-service education for teachers, staff meetings to discuss the academic problem, book bank, work experience, supervised study, internal assessment, education through TV and Radio, science clubs, science fair, better utilization of library and programmed learning.

After administering the checklist in the selected schools, it was found that out of above mentioned 23 innovations 2 namely mid-day meals and co-operative store were non existent. Hence these two were deleted and the remaining 21 innovations were retained in the final checklist. The copy of the checklist has been enclosed in the appendix no. 1

- **Innovation Awareness Test**

  In order to assess the impact of innovations on the professional practices of the teachers a need was felt to measure the awareness of the teachers under investigation about the innovations, their origin, concept and practice. A survey was made to search an appropriate tool to assess awareness among the teachers. In the event of non-availability of such a tool, the investigator decided to develop a test for the purpose. The procedure involved in developing the Innovation Awareness Test has been discussed below.

  **Theme**

  Reforms and innovations are the basis of change in the society. In the context of education, innovations play a significant role. The quality and standards of education by and large are influenced by the new discoveries and innovations resulted through continuous research. In the process of modernizing the education systems throughout the world, researches and innovations share proportionately high contribution as compared to other factors. Innovations are defined as deliberate change, novelty of practices and alteration of what exists (Miles, 1964). Fair Child’s dictionary of sociology defines ‘innovation’ as something new, a departure from prevalent practices, an adoption of a changing situation. Rogers and Shoemaker (1971) have used
innovation in the sense of an idea, practice of object perceived as new by an individual, group or institution. Several other definitions of innovations have also been discussed at length in the preceding chapter.

Irrespective of variety of ideas, concepts and ways used to define innovations, a common consent that it is something new, deliberate and efficacious change introduced in the system to improve the quality and practice, has emerged.

In the context of education and schooling, innovations are basically new curriculum, application of technology, new method of teaching, a changed pattern of examination or any new experiment related to teaching and learning, or any aspect of school system. Innovations in education are necessary to keep pace with the rapidity of changes ushering in the other fields of society. There are three different categories of innovations, with respect to decisions and initiatives, the innovations are divided under three broad categories.

- Teacher initiated innovations
- School initiated innovations
- Government initiated innovations

Teacher initiated innovations are the one which are basically the effort of individual teachers. It may be a new idea, a different method of teaching, a new way of explaining the theories, facts and concepts to the students in particular. This category of innovations do not require much coordination and collective planning. Neither it involves the complicated set of operations as in case of government initiated innovations.

The school initiated innovations are the one which are either conceived by the principal, or a group of teachers or the governing body of a particular school. In this level the decision making regarding the implementation of the innovations is slightly more complicated as it involves a set of formalized operations, a rigorous planning and co-operation from the fellow practitioners such as teachers. This is all school specific.

The innovations initiated and introduced by the government entails a highly complicated and rigorous planning as it applies to a larger clientele
beyond the boundary of a particular school or even a few schools in a locality. This kind of innovations are normally introduced in the form of making a policy which is applicable to the wider clusters under the jurisdiction of a government or as demands of a huge network. The basic difference between teacher initiated, school initiated and the government initiated innovations is that the former two are not obligatory but the later is compulsory.

However in all the three cases the role of teacher is of utmost importance. Teacher in fact by virtue of his position in society can act as the key facilitator of change. The teachers are usually the practitioner upon whom sustainability of innovations depends. Consensus, willingness, receptivity to change, interest and efforts of the teachers determines the destiny of innovations in the institutional climate. Research studies have produced ample evidences to this effect. In order to practice the innovations in the organisational set up the teachers must be well informed about their origin, nature, objectives, process of adoption and monitoring. Successful introduction ensures high rate of sustenance resulting to effective diffusion and dissemination. Hence, teachers awareness of the innovations are essential even a pre-requisite for diffusion of innovations. On the other hand a well understanding of the concepts, objectives and nature of innovations helps to improve the knowledge and skills of their own.

The innovations under study were basically initiated by the government. Mainly they were the schemes and activities introduced for improving the school practices as a part of the curriculum. While introducing them in the school system the government had fixed some specific objectives of each innovation. They were stated in various policy documents like the Report of Educational Research and Innovation Committee, National Council of Education Research and Training (NCERT), the National Education Policy (1986), Programme of Action (1992) etc. An exhaustive survey of all such documents was made to have an overview of the innovations practiced by the schools.
Each innovation was analyzed in terms of their meaning, concept, nature, operationalization and the purpose of introduction in the school system which are mentioned here under:

1. **Institutional Planning**

   A plan prepared by the principal and the teachers of the school to conduct the activities (monthly, quarterly and annually), where:
   - teachers are actively involved in the planning process.
   - the plan is prepared according to the available resources.
   - purpose of the planning is to utilize the existing resources in the most effective manner and to overcome the shortcomings of the material inputs through better planning and greater human efforts.

2. **Cumulative Record Card**

   It is a device for recording information about every pupil which is collected from different sources over a period of time, and
   - consists of report of attendance, academic marks, family related information, intelligence, aptitude, interest, health history, hobby, social and personal adjustments of every child.
   - presents a clear picture of the developmental pattern of the child.
   - strengthens teacher taught relation.
   - helps in diagnosing the problems of individual child.
   - makes easier for a new teacher to understand a child.

   Regular maintenance of the Cumulative Record Card develops systematic and organized work habit of teacher.

3. **Educational Guidance**

   A programme in which teacher help the students to overcome the problems related to study.
   - It can be individualized or groups.
   - Develops interest and motivation both among students and teachers.
   - Helps the students to discover their abilities and aptitudes to make a proper choice of subjects.
• Teachers help the students to put himself/herself in the best favourable setting.

4. **Hobby Clubs**

Hobby clubs are organized in schools to promote the interest in cultural activities.

• to develop sense of belongingness to the culture and society.
• to develop respect for traditional and social values.
• to provide opportunity to unfold the talent of both teachers and students and to promotes all round development of students.

5. **Decentralization of Administration**

Decentralization of Administration means delegating powers and responsibilities to other members of the school with a view to:

• develop independent decision making.
• empower the teachers
• make the system transparent
• develop a sense of co-operation and self-confidence etc.

6. **Health and Physical Education**

It covers games and sports activities conducted in the schools.

• It gives conceptual clarity about health, hygiene environment and its protection.
• It keeps the children physically fit and mentally sound.
• It makes the children to realize the importance of health and healthy living.
• Physio-medical tests of the children are conducted in the schools regularly.
• Immunization programme are organized.
• Eventually, co-operation among the teachers develops.

7. **New Type Tests**

New Type tests have been introduced to:

• eliminate the possibility of subjectivity.
encourages the use of technology in examination and bring objectivity of assessment.
Purpose is to increase reliability and validity of the testing system.

8. Programme for Gifted Children
This is the programme for identifying the gifted and high achieving students.
- It helps in nourishing their creativity and talents.
- It provides enriched learning experience
- Challenging and extra assignments are given to such students.
Teacher requires extra preparation for dealing with such children

9. Remedial Teaching
This is a programme for the educationally backward students, where:
- extra classes are arranged for them.
- teacher makes personal effort to identity such children and guides them to overcome the learning difficulties.
- special attention is given by the teacher.
- parents are given continuous feedback.

10. Parent-Teacher Association
Parent-Teacher Association provide a meeting place for teacher and parents in the School Premises, where:
- parents are given continuous feedback about their children.
- community participation is received.
It helps in strengthening the school and community linkage.

11. In-service Education
In-service education of the teachers is the training or education of the teachers received after joining the profession. Refresher courses, seminars, workshops etc. are the medium of in-service education.
- It refreshes the knowledge and skills of the teachers.
- It develops their personality making them dynamic and up to date.
- It provides awareness about the latest developments in their field.
• It helps in acquiring new knowledge and skills.
• It improves their classroom practices with new methods of teaching.

12. **Staff Meetings**
A meeting conducted in the school at the initiative of the principal in which teachers are involved, where:
• their opinions and views on various matters are shared.
• They get opportunity to discuss the problems encountered on the classroom practices.
• corporate responsibility develops.
• they think and plan the activities.

13. **Book Banks**
The schools maintain book banks where:
• books are purchased from a outgoing students and either sold to the poor students on responsible prices or issued on loan basis with nominal charges.
• proper record of the books are kept.
• accounts are maintained
• teachers are made in change of book banks.
It is an important step in the direction of equalizing educational opportunities.

14. **Work Experience**
The objective of work experience is to develop respect among the children for annual work, where:
• children are taken to factories, farms and other productive situations to get practical experience.
• children are acquainted about technology and skill related activities.
• work experience develops healthy attitude towards work.
• it promotes civic insights.
15. Supervised Study
Supervised study is conducted to reduce the academic burden of the children, and help them to solve the problems related to their study.

- it develops independent study habit.
- it helps the teacher to observe the children while they study independently.
- It reduces the burden of homework.

16. Internal Assessment
Continuous and periodical assessment conducted by the Schools in terms of weekly and fortnightly tests.

- it inculcates habits or regular class-work.
- it encourages the child for regular study.
- it encourages sense of hard work and concentration.

17. Education through Radio and TV
- makes learning easier and interesting
- acquaints the children with technology
- helps clarifying concepts and theories.
- gives a good exposure of language, pronunciation and intonation.
- improves instruction process

18. Science Clubs
Science clubs are formulated for an enriched learning experience, where:

- students gets opportunity to know and understand the science in everyday life.
- experiments are conducted regularly in the laboratory of the School.
- teacher-taught relation improves.
- maintain liason with scientific developments in other parts of the world.
- inculcates scientific temper and develops interest for science.
19. Science Fairs
Science Fairs are organized every year in the school that prepare their students to participate.
- It encourages creativity among the children
- It develops awareness about the inventions and discoveries
Models developed by the students are displayed for exhibition in the science fairs

20. Utilization of Library
Library is the best source of knowledge
- It develops regular study habit among students
- Teachers accompany students to library and encourage them to be book friendly.
- It is useful for both teachers and students

21. Programmed Learning
- Programmed learning is an effective method of self-instruction.
- It may be utilized for remedial instruction.
- It results in better understanding and retention.

Planning of the Test
After analyzing the innovations in light of their meaning, objectives, nature and form of practice, it was decided to form questions spread over all the 21 innovations with varying emphasis in accordance with their importance and gravity. It was also decided to frame multiple choice type of items uniformly with four options. The duration of test was planned to be not more than a school period.

The items were sequentially arranged as per the order of innovations mentioned in the table given below. The number of items on each innovations are given in the following table.
Table 2.1
First Draft of Innovation Awareness Test

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Innovations</th>
<th>No. of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Instructional planning</td>
<td>04</td>
</tr>
<tr>
<td>2.</td>
<td>Cumulative record card</td>
<td>04</td>
</tr>
<tr>
<td>3.</td>
<td>Educational guidance</td>
<td>02</td>
</tr>
<tr>
<td>4.</td>
<td>Hobby club</td>
<td>03</td>
</tr>
<tr>
<td>5.</td>
<td>Decentralized administration</td>
<td>03</td>
</tr>
<tr>
<td>6.</td>
<td>Health and physical education</td>
<td>03</td>
</tr>
<tr>
<td>7.</td>
<td>New type test</td>
<td>04</td>
</tr>
<tr>
<td>8.</td>
<td>Programme for gifted pupils</td>
<td>03</td>
</tr>
<tr>
<td>9.</td>
<td>Remedial teaching for educationally backward pupils</td>
<td>04</td>
</tr>
<tr>
<td>10.</td>
<td>Parent-teacher association</td>
<td>04</td>
</tr>
<tr>
<td>11.</td>
<td>In service education</td>
<td>04</td>
</tr>
<tr>
<td>12.</td>
<td>Staff meeting</td>
<td>02</td>
</tr>
<tr>
<td>13.</td>
<td>Book bank</td>
<td>03</td>
</tr>
<tr>
<td>14.</td>
<td>Work experience</td>
<td>03</td>
</tr>
<tr>
<td>15.</td>
<td>Supervised study</td>
<td>02</td>
</tr>
<tr>
<td>16.</td>
<td>Internal Assessment</td>
<td>01</td>
</tr>
<tr>
<td>17.</td>
<td>Education through TV and Radio</td>
<td>02</td>
</tr>
<tr>
<td>18.</td>
<td>Science club</td>
<td>02</td>
</tr>
<tr>
<td>19.</td>
<td>Science fair</td>
<td>02</td>
</tr>
<tr>
<td>20.</td>
<td>Better utilization library</td>
<td>02</td>
</tr>
<tr>
<td>21.</td>
<td>Programmed learning</td>
<td>03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

Construction of Items

As guided by the decisions under planning, the items were generated covering all possible dimensions of the innovations. Items were basically in the
form of statements followed by four options out of which the one was correct. Care was taken to generate options of equal difficulty level.

Five copies of the test were prepared and they were distributed to five experts. A letter requesting to evaluate the test in the light of following terms of reference, was written.

1. Coverage of content
2. Relationship of the theme with the options.
3. Structure of the items
4. Clarity of language

The copies of the test were collected and a discussion about the suitability of items was held with each one of them separately. A decision was taken to drop the items which were rejected by all the five experts. The items viz. 2, 3, 6, 7, 9, 10, 13, 16, 19, 21, 22, 24, 27, 28, 31, 33, 34, 35, 38, 39, 40, 41, 44, 45, 47, 51, 54, 56, 57, 58 were rejected by all the five experts. Hence they were dropped. The items viz 3, 19 and 31 were modified as they were found lacking clarity in language communication. Similarly the items viz. 8, 42, 50, 59 and 60 were improved as the structure of these items were not appropriate. Thirty items out of 60 were dropped. The final test was retyped with remaining 30 items. The test thus was ready for a try out. The distribution of the surviving items has been presented below:

**Table 2.2**

**Final Draft of Innovation Awareness Test**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Innovations</th>
<th>No. of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Instructional planning</td>
<td>02</td>
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<tr>
<td>2.</td>
<td>Cumulative record card</td>
<td>02</td>
</tr>
<tr>
<td>3.</td>
<td>Educational guidance</td>
<td>01</td>
</tr>
<tr>
<td>4.</td>
<td>Hobby club</td>
<td>02</td>
</tr>
<tr>
<td>5.</td>
<td>Decentralized administration</td>
<td>02</td>
</tr>
<tr>
<td>6.</td>
<td>Health and physical education</td>
<td>01</td>
</tr>
<tr>
<td>7.</td>
<td>New type test</td>
<td>01</td>
</tr>
<tr>
<td>No.</td>
<td>Activity</td>
<td>Count</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>8.</td>
<td>Programme for gifted pupils</td>
<td>01</td>
</tr>
<tr>
<td>9.</td>
<td>Remedial teaching for educationally backward pupils</td>
<td>02</td>
</tr>
<tr>
<td>10.</td>
<td>Parent-teacher association</td>
<td>02</td>
</tr>
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<td>11.</td>
<td>In service education</td>
<td>01</td>
</tr>
<tr>
<td>12.</td>
<td>Staff meeting</td>
<td>01</td>
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<td>13.</td>
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<td>Better utilization library</td>
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<tr>
<td>21.</td>
<td>Programmed learning</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

**Try out**

Required number of photocopies of the test were prepared. Instructions were typed on its cover page. It was mentioned that the test was designed to assess the awareness of teacher on the innovations practiced in the school system. It was also mentioned that the test contains 30 multiple choice items each having four options. One of the four options was the correct which the respondents were supposed to identify and put a tick (\(\checkmark\)) mark on the alphabet showing the serial number of that particular option mentioned in the separate answer sheet attached with the test. The respondents were requested not to omit any of the items in the sequence. The draft of the test was finally prepared.

Principals of the schools were contacted and necessary permission was sought to administer the draft of the test on the teachers teaching the elementary classes. The test was administered on 30 teachers of various schools of Chandigarh. The teachers were requested not to consult each other while
Reliability

Reliability refers to the consistency of test results. Nunnally (1982) observes that reliability concerns the extent to which measurement are repeatable i.e. when different persons make the measurements on different occasions, with supposedly alternative instruments for measuring the same thing. In other words, measurement are intended to have a stable or consistent result over a variety of conditions in which essentially the same results should be obtained.

It was not feasible to use methods like Test-Retest or equivalent form method. Hence options were ruled out. In the Test-Retest method, if the same tool is administered in a close interval, the chance of retention is much more. In order to avoid such situations split-half method was found suitable for the purpose. Thus for determining the reliability of the innovation awareness test, split-half method of reliability was employed.

The items of the test were divided into two categories such as odd and even and were scored accordingly. The reliability co-efficient of the full test was computed by using the Spearman-Brown formula, for double the size of the test. The reliability of the coefficient of the test was found to be .86.

Validity

Cronbach and Meehl (1955) suggest that when a test used to describe the degree to which an individual manifests an abstract psychological trait or ability, the construct validity is the relevant concern. Psychological constructs are observable, postulated variables that have evolved either informally or from psychological theory. Intelligence, anxiety, mechanical aptitude, critical thinking, ego strength, dominance and achievement motivations are examples of commonly used constructs (quoted in Stanley and Hopkins 1978).

The tool under discussion was developed to assess the awareness level of the teachers on the practiced innovations. Awareness is basically an abstract and psychological phenomena. Oxford English Dictionary defines ‘awareness’
as a ‘state of being aware or consciousness’. It is related to the cognitive level. Hence the construct validity was found to be appropriate for the assessing the validity of the test. For the purpose determining the construct validity the content of the item was seen vis a vis the theme of the Innovation practiced. On close examination, it was found that there was high degree of correspondence between the two.

- **Change Sustenance Scale**

In order to identify the sustained change resulted through the innovations a schedule was developed by the investigator. The detail procedure involved in developing the sustained change inquiry schedule has been discussed here under.

**Theme**

Change is defined as ‘alteration of the prevailing situation’ or departure from the existing situation (Miles, 1964). Changes occur due to variety of reasons. Some changes are fictitious and some are real. Sometime changes come automatically and sometimes a need is felt and change is called for. However, the process of change results in to many alterations in the system where it occurs. It disturbs the equilibrium of the system. If the interference of change is positive, useful and beneficial for the system, organisation or even for an individual then the change becomes acceptable, sustain for longer period of time and gets institutionalized. It is called as sustained change.

Over past few decades, many changes have crept into our school system. Some of them are initiated and introduced by either the school themselves or by the authority controlling them. Innovations have a major roll in bringing change to the school system. In order to improve the quality of instruction a number of innovations have been introduced in school system by the government. Many of them have been sustained producing desirable results in serving the purpose for which they were introduced.

Some of the innovations have been abolished after their initial trial. A few innovations have even failed to reach at the institutional level. The institutional climate, perception, willingness and acceptance of the practitioners
are the potential factors for sustenance of the changes resulted through the innovations. If the institutional climate is conducive, and the practitioners are motivated to accept and use the innovations then the possibility of sustenance of change is more. Even sometimes the nature of innovation of change also determines its success and failure. However in any case the sustenance of the change is essential if at all a positive result is expected from it.

Planning

In the present investigation, the innovation which were intended to be studied were basically government initiated innovations which were introduced with the objectives of bringing a qualitative improvement in the school system. In order to assess the sustained changes resulted out of the innovations their objectives, nature and the way they are practiced in the schools were analyzed by the investigator. The activities conducted in the process of practicing each innovation were identified which have been discussed at a length in the description of the Innovation Awareness test.

It was planned to prepare a list of all the activities which will be further used to generate items for the schedule. The schedule was decided to be prepared on the statement form. Every statement was to be rated on a three point scale columns namely, Regular use, Occasional use and Seldom use. The purpose was to enquiry about the activities which were regularly being used by the teachers. The number of activities under each innovation have been mentioned in the following table.

**Table No. 2.3**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Innovation</th>
<th>No. of Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Instructional planning</td>
<td>08</td>
</tr>
<tr>
<td>2.</td>
<td>Cumulative record card</td>
<td>04</td>
</tr>
<tr>
<td>3.</td>
<td>Educational guidance</td>
<td>03</td>
</tr>
<tr>
<td>4.</td>
<td>Hobby club</td>
<td>06</td>
</tr>
</tbody>
</table>
As mentioned in the table above, in total there were 80 activities in the scale. The activities were placed in the left side of the Schedule. Against each activity three points namely Regular use (RU), Occasional Use (OU) and Seldom Use (SU) were mentioned. Through the instruction on the cover page typed, the respondents were requested to put a tick mark (✓) in the space given against each activity.

**Finalization**

Five copies of the scale were made and were distributed to 5 experts to comment on the same. The experts were requested to evaluate the scale with respect to clarity of language and relationship of the activities with the innovations.
The copies of the scale were collected from the experts and discussion was held with them about the items. The item viz. 5, 6, 11, 12, 27 and 74, were rejected on the grounds of overlapping contents. Hence they were dropped. The item such as 7, 9, 13, 14, 15, 17, 25, 43, 65 and 68 were improved as the experts found them with lack of clarity in language. Finally, 74 items were retained. A copy of the scale has been attached in appendix III. The items of the scale were examined again for their thematic relationship with the construct of Innovation and at places where connections identified were loose, and indirect, the items were reframed to make the item content visibly related to the theme of the innovations. The changes visualized as a result of prolonged practices of Innovation were the central concerns. And the scale was reviewed for its association with the central concerns. Thus, its validity was determined on the basis of its close relationship with the theme of the test and content of the items.

- **Professional Competence Scale**

In order to assess the professional competence of teachers, there was a need of an appropriate tool. In the event of its non-availability, the investigator himself developed a rating scale for the purpose. The plan and procedure for developing the rating scale has been discussed below.

**Theme**

Teachers status as a professional is well recognized in the society. Since time immemorial the teachers are accorded high respect and their contribution in societal development has a special significance. They are the role models for students. In Indian context, where all the systems are deeply rooted with its traditional cultural ethos, the teachers positions is next to ‘God’. They are symbolized as social role models, the persons of high moral character, creator, conservator and transmitter of knowledge. In the modern times the teachers role and responsibilities have undergone a substantial change which has affected the teaching learning process and even the professional practice of the teachers in diversified ways. Change has been witnessed in teachers’
relationship with students and society at large in the institutional process, and in several other aspects.

Inspite of this, the teachers image as a guide, a person of values, and character, and creator and disseminator of knowledge is maintained. He is expected to perform a multi functional role as per the requirement of his profession.

Planning

After a careful perusal of literature on the subject, it was decided to develop a self rating scale for the teachers in which the teachers will be given an opportunity to rate themselves with respect to their competencies on various aspects of professionalism. Professional competency is a highly complicated phenomena though dealing with all the three domains namely cognitive, affective and psychomotor or conative of a teacher. Measuring such a phenomena through not impossible but considerably difficult. It encompasses a number of activities with variety of forms under its fold. In essence, to get a comprehensive picture of professional competency of the teachers a systematic and thorough analysis of the characteristics and functions of teaching profession is required. Keeping this factor in view a rating scale was thought to be suitable for the purpose.

For a systematic collection of data through observation, rating scales are the devices often used for recording the information in an organized manner. Guilfold (1979) observes that rating is a term applied to have expression of opinions or judgements regarding some situation, object or character. Rating techniques enable the quantification of such judgements. Rating scales are used in the evaluation of individuals, their reactions, and products as well as in the psychological evaluation of stimuli. The great ease with which the rating scales can be administered gives an unusual appeal.

In general, a rating scale, is composed of three components:

- the subjects or phenomena to be rated – ratee.
- the continuum along which they will be rated-scale.
the judges who will do the rating rater.

At the initial phase a Survey of literature on the concept of a profession, nature and status of teaching as a profession and the role and functions of a teacher as a leading professional was conducted. All such literatures were thoroughly analyzed and the characteristics of a profession and the teachers role was analyzed in order to draw clear picture on the professional competency. The characteristics and other aspects have been discussed at length under the heading of profession: the concept in the preceding chapter. After preparing a comprehensive list of characteristics an operational framework of activities of a teacher in the light of characteristics of a profession was developed. Broadly the teachers function, role and professional practices were categorized under four categories, namely knowledge and teaching competence, belongingness with students, social sensitivity and professional practices which, are discussed below.

A. Knowledge and Teaching Competence

Teaching is the prime concern of a teachers. The first and foremost requirement of a teacher is to be equipped with specialized knowledge and expertise to accomplish the task of teaching. The teacher explores the source of knowledge and acquires it through intensive study, exchanging and sharing views with colleagues attending in service training programmes like seminar, workshop, refresher programmes, which provides a very useful platform to acquire new knowledge and skill. Enhancing knowledge in one’s own field requires personalized efforts. Alongwith knowledge of the subject, the teacher in order to transact the curricular business needs good communication and language facilities. A teacher has to be an effective communicator which is essential for effective and quality instruction.

B. Belongingness with students

Teacher is a role model for the student. His ideas, values, manners etiquettes, style of interaction etc, are usually imitated by the students. All these factors are well associated with the personality development of the students. On the other hand it is a prerequisite on the part of a teacher to know and
understand the students, their developmental pattern, attitude, aptitude, interest and the overall behaviour. These help him to create a favourable condition for learning. To achieve this task teachers sense of belongingness with the students is essential. It leads to better interaction with students resulting to effective and interesting learning experiences.

C. Social Sensitivity

Education is considered as a social process and the teacher is a social being. Every society expects its members to have a close bond with its member. In the social process the teacher has the most vital role. He/she must have sense of belongingness and respect for the society, culture and traditions. The altruistic nature of the teaching profession expects the teacher to render the selfless social service which has always been emphasized in a traditional society like ours. Being identified with the society, keeping pace with the change process, participating in social and cultural related activities are some the vital social responsibility of the teachers.

D. Professional Practices

Professional practices include adherence of a standard code of ethics, responsiveness and commitment to the profession. Every profession has a set of ethics to be adhered by its member while practice. The teacher as a member of the profession is expected to perform his duties and responsibility within the ethical parameters of the profession.

After fixing the dimensions of the professional role of teachers a list of operational aspects associated with each dimension was prepared which has been mentioned in the following table.

Table 2.4
First Draft of Professional competence

<table>
<thead>
<tr>
<th>Categories</th>
<th>S. No.</th>
<th>Operational Components</th>
<th>No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>Knowledge and Teaching competence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.</td>
<td>Teaching competence</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>Knowledge of the subject</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Communication ability</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Efforts to enhance knowledge in the concerned field</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Continuous up dating on teaching methods</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Maintaining discipline in classroom</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong></td>
<td><strong>Belongingness with students</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Understanding student behaviour</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>General awareness</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sense of belongingness to society</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Participation in job related activities</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Participating social and cultural activities</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Independent decision making</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Adhering code of conduct</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Keeping pace with the changes in society</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>C</strong></td>
<td><strong>Social Sensitivity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Modernization in thinking</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Using technologies in personalities</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Self study habit</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Awareness about the latest development</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Considering himself/herself as a responsible member of society</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong></td>
<td><strong>Professional Practices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Observing values and professional ethics</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Internalizing values in personal life</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Sharing responsibility and leadership</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Commitment to profession</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Construction of the Rating Scale**

Each item was written in attribute form followed by a continuum of 10 points ranging from 1 to 10. The items were placed under respective sections.
viz A. knowledge and teaching competence, B. Belongingness with the students, C. Social sensitivity and D. Professional practices.

The total number of items in each dimension have been given in the following table.

**Table 2.4.1**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>No of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Knowledge and teaching competence</td>
<td>06</td>
</tr>
<tr>
<td>B Belongingness with students</td>
<td>08</td>
</tr>
<tr>
<td>C Social sensitivity</td>
<td>05</td>
</tr>
<tr>
<td>D Professional practices</td>
<td>04</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>

In total there were 31 items covering all the four dimensions. In order to counteract the various problems like the error of liniency, halo effect, logical error, proximity errors etc. it was decided that the rating scale be rated by five experts. Accordingly five copies of the rating scale were made and were distributed to the experts. A consensus has emerged among the experts to reject the item no 16, which was opined to have no contextual relevance. Hence, it was dropped. The items such as 1, 11, 12 and 14 were improved for their language deficiency. As per the suggestions of the experts the structure and language of the items viz 1.2.8 14.18 and 20 were improved. The rating scale was retyped with 30 items. Instructions explaining the purpose of the scale and procedure was mentioned in its cover page. The respondents were requested to weigh themselves and put a tick (✓) mark on the point of each continuum which most appropriate represent them. The rating scale was ready for try out.

**Try Out**

Required number of copies of the rating scale were prepared. The principals of various schools of Chandigarh were contacted and permission for administering the scale was sought. After getting the permission, the rating
scale was administered on 20 teachers teaching the elementary classes. During the administration, necessary precautions were taken and it was ensured that the teachers do not consult with each other while rating the scale. The filled in scales were collected and were processed.

Reliability

A method suggested by Ebel (1951) specifically to measure the reliability of ratings \((n = 20)\) was used to compute the reliability co-efficient of the rating scale under reference. Thus, the reliability coefficient of the scale was found to be .82, indicating a close agreement of ratings among the teachers.

- The Interview Schedule

The present day research has realized the limitations of quantitative research and has found it desirable to supplement the findings with descriptive methods. The advocates of descriptive research methods justify that the quantitative methods are not sufficient for comprehending social issues which are subjective in nature. Descriptive methods are mostly popularly used in the social science research. These are flexible and provide greater freedom to the subject to express their feelings, perceptions, judgments etc. which can not be quantified. Interview is one of the effective ways for obtaining information for descriptive analysis. The interview is a process of communication or interaction in which the subject or interviewer gives the required information verbally in a face-to-face situation (Koul, 1992).

Interviews can be used for several purposes and with varied forms depending upon the situation. It can be conducted with an individual or in a group. Normally there two types of interviews namely structured and unstructured. In the structured interviews the interviewer frames questions before-hand. The type, form and order of questions are pre-decided. It was more in formal in nature. In unstructured interview although the researcher decides the questions to be asked before hand by and large he/she has the freedom in modifying adding, changing the order of the questions.
Unstructured interviews also provide greater freedom to the interview in giving the information in made details.

In the present investigation the quantitative analysis of the data was supported by descriptive analysis. For the purpose the investigator interviewed three teachers each from the sampled schools. It was decided to conduct unstructured interviews. The teachers were interviewed on following four broad themes.

- Practice of innovations
- Changes in school climate
- Procedural changes
- Professional development

Every possible effort was made to make the interviews more informal. Hence no specific questions were prepared. The views, statements were recorded for descriptive analysis.