

C H A P T E R - I I

M E T H O D O L O G Y



CHAPTER II

METHODOLOGY

2.0.0. INTRODUCTION

Practice-teaching programme plays a vital role in preparing effective teachers. The success of this programme is mainly based on objective observations and feedback given to pupil-teachers. The feedback, in the form of comments, helps pupil-teachers in improving their classroom performance in terms of their achievement marks. In order to know the effect of feedback given to pupil-teachers by their observers upon their classroom performance, the present study was conducted. The study employed descriptive and correlational survey method. The details regarding the sample, tools used for data collection, procedure adopted for data collection and statistical techniques used for analysing the data are given in this chapter.

2.1.0 SAMPLE

This study is basically concerned with the nature of comments received by the pupil-teachers during the practice-teaching programme. These comments were required to be studied in relation to the achievement of the pupil-teachers during practice-teaching as well as the annual examination. Therefore, the study employed the samples of pupil-teachers and observers. The pupil-teachers were from Secondary Teacher Education Institution (S T E I) whereas the observers belonged to S T E Is as well as their practising schools. Both S T E Is and practising schools were from the districts of Kaira, Mehsana and Baroda of Gujarat State.

Except the observers from practising schools, rest of the observers and the pupil-teachers were from four randomly selected S T E Is. These institutions were (i) Anada College of Education, Borsad, (ii) Vivekanand College of Education, Mehsana, (iii) Faculty of Education & Psychology, Baroda and (iv) Mahila Mahavidyalaya, Baroda. Thus these four S T E Is were from three different universities, namely, (i) Gujarat University, (ii) Maharaja Sayajirao University and (iii) Shrimati Nathibai Damodar Thakersey Women's University.

The sample of observers constituted 69 teachers from S T E Is and their practising schools. The pupil-teachers from S T E Is were selected as subjects in the sample of the study. This sample thus included 250 pupil-teachers representing rural and urban areas of place of residence. In these universities, on an average, each pupil-teacher was supposed to give 30 lessons during practice-teaching programme. Hence a sample of 7500 (250 x 30) practice lessons of the pupil-teachers were observed by both types of observers. The observers' comments of these practice lessons were carefully examined from both the pupil-teacher's and the observer's points of view. The details about the sample of the observers and the pupil-teachers are given in the following captions.

2.1.1 Academic Qualifications and Teaching Methods of Observers

The institutionwise distribution of the observers according to their academic qualifications and teaching methods is given in Table 2.1.

T A B L E 2.1

Institutionwise Distribution of Observers According to their Academic Qualifications and Teaching Methods

Name of the Institution	Academic Qualifications		Total	Teaching Methods	
	Post-graduate	Graduate		Science Subjects	Humanities Subjects
1. Anada College of Education, Borsad	6 (54.55 per cent)	5 (45.45 per cent)	11	3 (27.27 per cent)	8 (72.73 per cent)
2. Vivekanand College of Education, Mehsana	7 (53.85 per cent)	6 (46.15 per cent)	13	4 (30.77 per cent)	9 (69.23 per cent)
3. Faculty of Education & Psychology, Baroda	8 (38.10 per cent)	13 (61.90 per cent)	21	8 (38.10 per cent)	13 (61.90 per cent)
4. Mahila Mahavidyalaya, Baroda	2 (13.33 per cent)	13 (86.67 per cent)	15	0	15
Total	23 (38.33 per cent)	37 (61.67 per cent)	60	15 (25.00 per cent)	45 (75.00 per cent)

From Table 2.1, it can be seen that out of the total sample of the observers, 62 per cent of them were graduates and 38 per cent were post graduates. It means that majority of the observers were graduates. In these institutions percentage of the graduate observers ranged from 45 to 87 and that of the post-graduates ranged from 13 to 55.

Of the total observers sample, 75 per cent of them had qualified with subjects of humanities as teaching methods and rest of them had science subjects as teaching methods. Mahila Mahavidyalaya, Baroda, did not offer science as teaching method and therefore, there were no observers of this subject. But, in other institutions, the percentage of the observers of science method ranged from 27 to 38. On the other hand, the percentage of the observers in these three institutions who had subjects of humanities as teaching methods ranged from 62 to 73.

In all, there were 60 observers. Out of these, 43 belonged to the S T E I and 17 were from the practising schools.

2.1.2 Qualifications of Pupil-Teachers

The institutionwise distribution of the pupil-teachers according to their qualifications is given in Table 2.2.

TABLE 2.2

Institutionwise Distribution of Pupil-Teachers According to their Qualifications.

Name of the Institution	Qualification		Total
	Postgraduate	Graduate	
1. Anada College of Education, Borsad	4	72	76
2. Vivekanand College of Education, Mehsana	1	40	41
3. Faculty of Education & Psychology, Baroda	33	77	110
4. Mahila Mahavidyalaya, Baroda	3	20	23
Total	41	209	250

From Table 2.2, it can be seen that of the total sample of the pupil-teachers, 83.6 percent of them were graduates and the rest of them were postgraduates. Thus, the majority of the pupil-teachers were graduates. The institutionwise analysis also gives the same picture in the sense that there were more graduate pupil-teachers than the postgraduate pupil-teachers.

2.1.3 Teaching Methods Offered to Pupil-Teachers

The Institutionwise distribution of the pupil-teachers according to the teaching methods offered to them is given in Table 2.3.

T A B L E 2.3

Institutionwise Distribution of Pupil-Teachers According
to the Teaching Methods Offered to them

Teaching Method	Anada College of Education, Borsad	Vivekanand College of Education, Mehsana	Faculty of Education & Psychology, Baroda	Mahila Mahavidyalaya, Baroda	Total
English	3	8	22	2	35
Hindi	22	12	41	8	83
Sanskrit	15	6	5	1	27
Gujarati	30	15	41	17	103
Marathi	-	-	4	8	12
Geography	16	9	18	8	51
History	38	10	21	2	71
Mathematics	14	11	31	-	56
Science	14	11	37	-	62
Total	152	82	220	46	500

In each institution according to the prescribed syllabus, every pupil-teacher has to opt for two teaching methods. The various teaching methods offered by the institutions are given in Table 2.3. From this table, it is clear that Marathi as a teaching method was not offered by Anada College, Borsad and Vivekanand College, Mehsana. Similarly neither Mathematics nor Science as teaching methods were offered by Mahila Mahavidyalaya, Baroda. Except these subjects, in these institutions as mentioned above, all other subjects were offered as teaching

methods in all the four institutions. The most offered teaching method was Gujarati followed by Hindi and History. The least offered method of teaching was Marathi.

2.1.4 Teaching Methods of Pupil-Teachers

The teaching methods opted by the pupil-teachers were classified in two categories. One category of those pupil-teachers who opted for science teaching methods and the other of those pupil-teachers who opted for subjects of humanities as teaching methods. The institutionwise distribution of these two categories is given in Table 2.4.

T A B L E 2.4
Institutionwise Distribution of Pupil-Teachers According to the Teaching Methods of Science and Humanities

Name of the Institution	Teaching Method		Total
	Science Subjects.	Humanities Subjects.	
1. Anada College of Education, Borsad	14 (18.42 per cent)	62 (81.58 per cent)	76
2. Vivekanand College of Education, Mehsana.	11 (26.83 per cent)	30 (73.17 per cent)	41
3. Faculty of Education & Psychology, Baroda	37 (33.64 per cent)	73 (66.36 per cent)	110
4. Mahila Mahavidyalaya, Baroda	-	23	23
Total	62 (24.80 per cent)	188 (75.20 per cent)	250

From Table 2.4, it can be seen that majority (75 per cent) of the pupil-teachers in the sample opted for subjects of humanities as teaching methods. Except in Mahila Mahavidyalaya, Baroda, the percentage of the pupil-teachers opting science subjects as teaching methods ranged from 18 to 34. The rest of the pupil-teachers opted for subjects of humanities as teaching methods.

2.1.5 Sex and Place of Residence of Pupil-Teachers

The institutionwise distribution of the pupil-teachers according to their sex and place of residence is given in Table 2.5.

T A B L E 2.5

Institutionwise Distribution of Pupil-Teachers
According to Sex and Area of Place of Residence

<u>Name of the Institution</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Area of Place of Residence.</u>	
				<u>Rural</u>	<u>Urban</u>
1. Anada College of Education, Borsad.	58 (76.32 per cent)	18 (23.68 per cent)	76	71 (93.40 per cent)	5 (6.57 per cent)
2. Vivekanand College of Education, Mehsana.	41	-	41	34 (82.92 per cent)	7 (17.07 per cent)
3. Faculty of Education & Psychology, Baroda.	45 (40.91 per cent)	65 (59.09 per cent)	110	48 (43.36 per cent)	62 (56.64 per cent)
4. Mahila Mahavidyalaya, Baroda.	-	23	23	-	23
<u>Total</u>	144 (57.60 per cent)	106 (42.40 per cent)	250	153 (61.20 per cent)	97 (38.80 per cent)

From Table 2.5, it can be seen that the sample of

the pupil-teachers constituted 57.6 per cent of males and 42.4 per cent of females. In Vivekanand College of Education, Mehsana, there were no female pupil-teachers while in Mahila Mahavidyalaya, Baroda, there were no male pupil-teachers. The sample of the pupil-teachers in Anada College of Education, Borsad, constituted 76 per cent of males and 24 per cent of females whereas in the Faculty of Education & Psychology, Baroda, the sample constituted 41 per cent of males and 59 per cent of females.

Of the total sample of the pupil-teachers, 61.2 per cent of them belonged to rural areas and the rest of them were from urban areas. Except Mahila Mahavidyalaya, Baroda, the pupil-teachers studying in the rest of the institutions were from both rural and urban areas. In these institutions, the percentage of the pupil-teachers belonging to rural areas ranged from 43 to 93 and that of urban areas ranged from 7 to 57.

2.1.6 Teaching Experience of Pupil-Teachers

The institutionwise distribution of the pupil-teachers according to the teaching experience is given in Table 2.6.

T A B L E 2.6

Institutionwise Distribution of Pupil-Teachers
According to the Teaching Experience.

Name of the Institution	Experienced	Inexperienced	Total
1. Anada College of Education, Borsad.	3 (3.95 per cent)	73 (96.05 per cent)	76
2. Vivekanand College of Education, Mehsana.	2 (4.88 per cent)	39 (95.12 per cent)	41
3. Faculty of Education & Psychology, Baroda.	42 (38.18 per cent)	68 (61.82 per cent)	110
4. Mahila Mahavidyalaya, Baroda.	7 (30.43 per cent)	16 (69.57 per cent)	23
Total	54 (21.60 per cent)	196 (78.40 per cent)	250

From Table 2.6, it can be seen that majority (78.4 per cent) of the pupil-teachers in the sample were not having any teaching experience. In Faculty of Education and Psychology, Baroda, and Mahila Mahavidyalaya, Baroda, the percentage of the pupil-teachers having some teaching experience was 38 and 30 per cent respectively. In the other two institutions, a very small proportion of the pupil-teachers was having teaching experience.

2.2.0 TOOL

To fulfil the objectives of the present investigation, the data were collected by using different tools. The data related to the comments given to the pupil-teachers by the observers during practice-teaching, the Cicirelli Category System was used as a tool. For collecting the informations regarding academic qualifications, teaching methods and status of the observers, and qualifications, teaching methods, sex, place of residence, teaching experience and achievement marks at annual examination of the pupil-teachers, two different proformae were used. The details regarding them are given in the following paragraphs.

2.2.1 The Cicirelli Category System.

The Cicirelli Category System was selected after careful review and examination of similar tools available in the literature. ~~These~~ are a few research studies which have been conducted to develop a systematic technique of observing classroom behaviour of the pupil-teachers and also of the observers in an objective manner. Some of the researches are cited below:

Withall (1949) developed a set of seven categories into which teacher statements could be classi-

fied on the basis of transcripts of their teaching behaviour. This method was not a method of observing and recording teacher behaviour in the classroom, rather it was a method for coding typewritten transcripts of sound recording of classroom behaviour. When Mitzel and Rabinowitz (1953) experimented with categories developed by Withall (1949), they found that neither sound nor stenographic recording yielded satisfactory record of teacher behaviour because of extraneous noises. Medley and Mitzel (1958) visited the classrooms and categorised teacher's live statements as they were made but that scale could not be generalised to teachers other than those actually observed.

Hughes and her associates (1959) developed a comprehensive set of categories for classification of teacher behaviour, but this tool was not very reliable for observations.

Flanders (1960) developed a very sophisticated technique for observing classroom interaction. It is a reliable technique and has been widely used in India as well as abroad for analysing classroom interactions. The weak points of the techniques developed by Withall (1949); Medley and Mitzel

(1958); and Hughes and her associates (1959) were overcome by Flanders' technique. But the Flanders' technique had some other drawbacks. Some of them are: (i) it was difficult to know the nature of questions asked in the classroom, (ii) silence in the classroom may mean that either the students are thinking on some problem or they are confused. The tallies in the category of silence may only reflect that the students in the classroom were silent for some per cent of time. But the cause of the silence cannot be known from the tallies. It may, therefore, be said that the Flanders ten category system was not comprehensive in analysing all the events in the classroom. Later on, the original category system was expanded and most of the above said difficulties were taken care of by the expanded category system. However, the expanded category system of Flanders would not serve the purpose of evaluating the quality of lesson plans, content, errors, etc.

Later on, in 1969, Cicirelli conducted a study on observers' creative ability and their appraisal of the pupil-teacher's classroom performance. He analysed the written comments given by observers to the pupil-teachers. The content analysis of these written comments resulted into twentythree categories.

These categories were covering each and every aspect of a classroom teaching. Therefore, this category system can be said to have mutually exclusive and all inclusive categories. This category system includes categories of subject matter, classroom management, evaluation etc. The details regarding these categories are given as under:

Description of the Cicirelli Category System

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1. Global Evaluation - Supervisors made statements that were global on summarised evaluations of the whole lesson, i.e. of the student-teacher performance or work (in this, as in other categories where appropriate statements in both the positive and negative directions are included. However, in this category the great majority of the evaluations made were positive). For example, "The student-teacher gave an excellent lesson.", "A fine job", "Not really a bad lesson."

2. Lesson Content or Sequence - Supervisor made statements denoting the actual sequence of activity and/or content presented in the lesson. Example - "The lesson began with quick drill in verb form."

3. Planning and Organisation - Supervisor made statement regarding the planning and/or organisa-

tion of the lesson. Example - "This lesson showed careful organisation", "Planned and structured this lesson well."

4. Specific Prescriptions - Supervisor made statements giving specific prescriptions for improving the student-teacher's performance. Example - "She should pass out all papers at the same time", "Key words should be written on the board during the demonstration."

5. Preparation - Supervisor made statements about the student-teacher's preparation (or lack of it) for the lesson. Example - "She was thoroughly prepared for the lesson", "He was in command of the material in the lesson but seemed unsure when the questions strayed a little."

6. Motivation - Supervisor made statements about the student-teacher's use of motivating techniques, Example - "She worked to build up good motivation for the discussion", "The record was an effective motivating device."

7. Objectives - Supervisor made statements about student-teacher's apparent objectives for the lesson. Example - "Her goal was to have the class understand the concept of density and she seems to

have achieved it in this lesson", "This class appeared to have no point to it at all."

8. Classroom Control - Supervisor made statements about the student-teacher's ability and/or techniques for control of classroom behaviour (maintaining orderly behaviour). Example - "Good class control."

9. Variety - Supervisor made statements about the variety of activities included by the student-teacher during a lesson. Example - "Miss _____ moved the class from Choral drill to individual recitation to written exercises in a varied and interesting lesson", "Enough change of activity to keep the class moving."

10. Reinforcement - Supervisor made statements indicating that the student-teacher provided reinforcement for learning in the form of approval, feedback or through repetition of the activity. Example - "She moved from pupil to pupil as they worked, giving encouragement through a word or a smile."

11. Pupil Involvement - Supervisor made statements indicating that the student-teacher attempted to include all or most students in class parti-

cipation. Example - "Two or three students monopolised into whole discussion", "_____ saw that each pupil participated."

12. Evaluation - Supervisor made statements indicating that the student-teacher provided for evaluation of the pupil learning. Example - "She used a brief quiz to evaluate understanding of the new verb forms."

13. Errors - The student-teacher had made factual error in presenting the lesson. Example - "He consistently mispronounced certain words."

14. Enthusiasm - The student-teacher had demonstrated enthusiasm in classroom activity. Example - "Highly enthusiastic."

15. Rapport - The student-teacher's rapport with the class. Example - "Good rapport Mr _____ has established", "A fine rapport with this class."

16. Confidence and Morale - The student-teacher's feelings relating to self confidence and morale. Example - "Miss _____ has improved in self confidence."

17. Distractors - Distracting behaviour or appearance of the student-teacher. Example - "He paced

up and down", "She frequently pulled at her hair", "She seemed to end every sentence with 'you see'."

18. Manner and Appearance - Statements pertaining to the student-teacher's general manner and appearance. Example - "She was poised and professional looking", "He has a very forceful manner in the classroom."

19. Discipline Problems - Statements denoting misbehaviour of certain pupils as discipline problems in the class. Example - "There was a constant undercurrent of talking", "Two girls went on gossiping."

20. Interest and Participation - Statements about the pupils' interest and participation in the lesson. Example - "Good class participation."

21. Other Class Reactions - Supervisor made statements in regard to such reactions or characteristics of the class as freedom, apathy, docility. Example - "Class seemed apathetic to whatever Mr _____ tried to do", "An usually docile class", "They appeared to be bored with the lesson."

22. Classroom Management - Statements about aspects of the classroom environment arranged by student-teacher, such as lighting shades, ventilation, arrangement of chairs, and bulletin board. Example - "Her bulletin boards are an excellent supplement to this unit", "She was careful to arrange the blinds before the lesson began."

23. Cooperating Teacher - Supervisor made statements about the student-teacher's relationships with co-operating teacher. Example - "She has a very good relationship with her co-operating teacher", "There seemed to be a strain between them."

2.2.2 Observer Proforma and Pupil-Teacher Proforma

As mentioned in caption 2.2.0, the data regarding academic qualifications, teaching methods and status of the observers were collected with the help of 'Observer Proforma' constructed for the purpose. Similarly, the data regarding qualifications, teaching methods, sex, place of residence, teaching experience and achievement marks at annual examination of the pupil-teachers were collected with the help of 'Pupil-Teacher Proforma' constructed for it. Both these proformae are given here.

OBSERVER PROFORMA

1. Name :
2. Address :
3. Qualifications:
 - a) Academic : B.A./B.Sc./B.Com.
M.A./M.Sc./M.Com.
Ph.D.
 - b) Professional : B.Ed./M.Ed.
4. Teaching Method:
 - a) Science Subjects : (i) Mathematics
(ii) Chemistry
(iii) Physics
(iv) Biology
(v) Home Science
 - b) Humanities Subjects : (i) Hindi
(ii) Gujarati
(iii) Sanskrit
(iv) English
(v) Marathi
(vi) History
(vii) Geography
(viii) Any Other.
5. Status

Are you a regular observer of the practice-teaching programme ? : Yes/No

If yes, what is your status : College Supervisor/
School Supervisor
6. Remarks, if any :
(✓) Tick mark whichever is applicable.

PUPIL-TEACHER PRO FORM A

1. Name :
2. Address :
3. Qualifications : B.A./B.Sc./B.Com
M.A./M.Sc./M.Com
4. Teaching Methods:
 - a) Science Subjects : (i) Mathematics
(ii) Chemistry
(iii) Physics
(iv) Biology
(v) Home Science
 - b) Humanities Subjects : (i) Hindi
(ii) Gujarati
(iii) Sanskrit
(iv) English
(v) Marathi
(vi) History
(vii) Geography
(viii) Any other
5. Teaching Experience:

Have you any
teaching experience : Yes/No

If yes, how many
years ? :years.
6. Area of place of
Residence : Urban/Rural
7. Sex : Male/Female
8. Marks obtained in
lessons at Annual
Examination :
9. Remarks, if any :

(✓) Tick mark whichever is applicable.

2.3.0 PROCEDURE FOR DATA COLLECTION

As mentioned in caption 2.1.0, each pupil-teacher practised about thirty lessons during the practice-teaching programme. In all, there were 250 pupil-teachers and correspondingly there were 7500 lessons. The lesson-plan books of 250 pupil-teachers were collected from their respective institutions. The comments given by the observers on lesson-plans of each lesson were analysed on the basis of the Cicirelli Category System and at the same time certain often occurring comments for each category were noted as illustrations. Similarly achievement marks given by the observers in each lesson were also noted.

The thirty lessons given by each pupil-teacher were divided into three stages, namely, the initial stage of 1 to 10 lessons, the intermediate stage of 11 to 20 lessons and the final stage of 21 to 30 lessons. For each stage the average positive and negative comments were recorded. The rest of the data related to other variable of the observers and pupil-teachers were collected from the offices of the respective institutions on the basis of the proformae as mentioned in caption 2.2.2.

2.4.0 STATISTICAL TECHNIQUES USED

The collected data were analysed by using different statistical techniques. In the following paragraphs, objectivewise analysis of ^{the} data has been presented.

1. For studying the positive and negative comments given by the observers, the frequency and percentages were computed with respect to the Cicirelli Category System.
2. For studying the effect of academic qualifications, teaching methods and status of the observers upon the feedback (in the form of comments) and the achievement marks of the pupil-teachers, t-test was employed.
3. In order to study the effect of feedback (in the form of comments) upon changing ^{the} classroom performance of the pupil-teachers, analysis of variance with repeated measures followed by the Newman-Keuls method was employed.
4. Analysis of variance (2×3) with repeated measures followed by the Newman-Keuls method was employed for studying the relationship between qualifications, teaching method, sex, place of residence and teaching experience of the pupil-teachers and their classroom performance

in terms of observers' comments and achievement marks.

5. In order to study the relationship between the observer's comments and achievement marks in practice lessons, and achievement marks obtained at the annual examination, the product moment correlation was employed.

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