



Chapter - III

Chapter – III

PLAN AND PROCEDURE

3.0 Introduction

In this chapter plan and procedure of the study is elaborated. Man from the time of immemorial has been continuously struggle with his environmental forces and trying to search ways and methods for the effective living on the earth. Research on each stage has proved a weapon in his hand and a short cut to progress and success.

Research is devoted to find the condition under which a certain phenomenon occurs and those under which it does not occur. The term 'research' consists of two words 'Re' and 'search'. Re means again and again and search means to find out something new. Thus, research is a process and in which a person observes the phenomenon again and again, collects the data and he draws some conclusions on the basis of data.

3.1 Educational Research

Educational research refers to a systematic attempt to gain better understanding of educational process, generally with a view to improving its efficiency.

Objectives of Educational Research

The purpose of research is to discover answers to question through the application of scientific procedures. The main aim

of research is to find out the truth which is hidden and which has not been discovered yet. We may think of research objectives as follows

1. To gain familiarity with a phenomenon or to achieve new insights into it.
2. To find out accurately the characteristics of a particular individual, situation or a group.
3. To determine the frequency with which something occurs or with which it is associated with something else.
4. To test a hypothesis of a casual relationship between variables.

Types of Research

Classification of research depends on objectives, data collection, controlling and with respect to different areas. There are three types of research methods.

1. Historical Research
2. Descriptive Research
3. Experimental Research.

1. Historical Research

In this type of research events in past has studied, explained and comprehended. The main aim of this research is to study the causes, effects and attitudes of events in the past and draw out

conclusions. With the help of past events, researcher can explain present events and guessed future events.

2. Experimental Research

This types of research is based on the law of single variable. Experimental method provide for much control and therefore establish a systematic and logical association between manipulated factors and observed its effects. The researcher defined a problem and proposes a tentative answer or hypothesis. He tests the hypothesis and accepts or rejects it in the light of the controlled variable relationship that has observed. Experimental research provides a systematic and logical method for answering question, "If this done under carefully controlled condition, what will happen?"

3. Descriptive Research

This research is associated with particular project and problem. It aims on finding a solution for an immediate problem facing a society. It is concerned with actual life. It is also called as survey method.

Three types of information are collected in this type of research.

- i) Actual Condition
- ii) Expected Condition
- iii) Necessary Remediation.

Present research is descriptive research because it studies the present status of job satisfaction and teaching aptitude of teacher educator.

3.2 Methodology Used for the Study

For this study the researcher has used the descriptive/survey method of research.

Survey Method

The survey method gathers data from a relatively large number of cases data particular time. It is not concerned with characteristics of individuals as individuals. It is concerned with the statistics that result when data are abstracted from a number of individual cases.

The survey is an important type of study. It involves a clearly defined problem and definite objectives. It requires expert and imaginative planning, careful analysis and interpretation of data gathered and logical and skilful reporting of findings.

Purposes of Survey Method

1. To find actual conditions of different areas related to the problem and state remedies for it.
2. To serve as a pilot study of experimental research.
3. To plan future evidences based on present survey of the condition.

3.3 The Main Features of Survey Method

1. It is used to gather large amount of data in relatively low time span as compared to other methods. With the help of questionnaire, and interviews data is going to be collected, in less time with less efforts.
2. Survey is always cross sectional. As longitudinal type of data collection is not possible in short span of time, by using sampling cross section of population is taken.
3. Survey is not concerned with characteristics of individuals but it focuses on mean tendency of population. It doesn't focus on individuals quality but mean of the group.
4. Survey involves clearly defined problem, definite objectives, data collection, analysis and interpretation and report writing.
5. Survey may be qualitative or quantitative depends on type of data collection.
6. In survey method statistical techniques are used.
7. Survey is the best method for resolution of present problems in less span of time, at local applicability.
8. Survey can also be used as pilot study as well as for follow up of research.

3.4 Sample

B. Ed. Colleges Affiliated to Shivaji University, Kolhapur

Shivaji University, Kolhapur (3 districts)

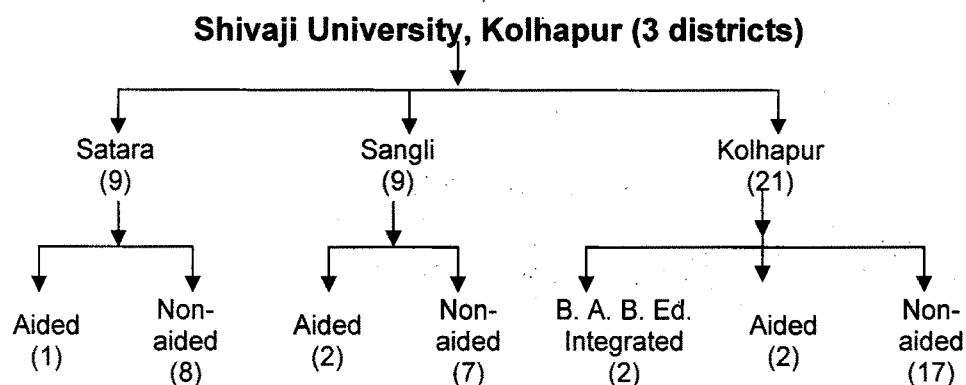


Fig. No. 8 : B. Ed. Colleges affiliated to Shivaji University, Kolhapur

(Note : Numbers in bracket indicate number of colleges)

There are 39 B. Ed. colleges under Shivaji University, Kolhapur among of them 5 are aided, 2 are integrated B. A. B. Ed. colleges and 32 are non aided B. Ed. colleges.

Among of 39 B. Ed. colleges 5 aided B. Ed. colleges 1 integrated B. A. B. Ed. and 17 non-aided B. Ed. colleges are selected by purposive sampling method.

3.5 Tools Used for Study

1. Teaching Aptitude Test Battery

Item Analysis

The try out test, consisting of 145 items, was administered on a sample of 370 teacher trainees in training schools of Bihar. The biserial correlations and the difficulty values were computed and

only such items were retained which yielded the value of biserial correlation more than 0.20. Twenty five items were rejected on this ground. Thus, the test consists of 120 items.

Standardization Sample

The final form of the test, consisting of 120 items was administered on a sample of 1090 pupil teachers reading in primary teacher training institutions of Bihar. Ninety cases were rejected, as they were not properly answered. Hence, the standardization sample consisted of 1000 subjects. The distribution of scores for the total test and for the total test and for the five areas of it were tested for normality by applying chi-square techniques. The distributions did not depart significantly from normality.

Reliability

Reliability of the test was examined by three different methods, namely split-half method, test retest method, and K-R method. Table 1 gives the reliability coefficient of the test by different methods.

Table 1
Reliability Coefficient of Test by Different Methods

Method Used	N	Reliability Coefficient	Per
Split half method	1000	0.98	0.002
Test Retest method	1000	0.97	0.004
K-R method	1000	0.89	

Validity

The scores on total test were validated against rating of the instructors of teacher training institutions. Product moment coefficient of correlation was calculated between scores obtained on the test and the positions of trainees given by the instructors. The value of coefficient of correlation was found to be 0.421 with a probable error of +0.026.

Norms

Standard score norms, t score norms and percentile norms were established. Table 2 gives the standard score norms and t score norms and Table 3 gives the percentile norms.

Table 2
Standard Score Norms and T Score Norms

Raw Score	Standard Scores M = 100, SD = 20	T Score	Raw Score	Standard Scores M = 100, SD = 20	T Score
1	15.62	-	26	51.62	28
2	17.06	-	27	53.06	28
3	18.50	-	28	54.50	29
4	19.94	-	29	55.94	29
5	4.38	-	30	57.38	30
6	22.82	-	31	59.12	30
7	24.26	-	32	60.26	31
8	25.70	-	33	61.70	32
9	27.14	-	34	63.14	33
10	28.58	-	35	64.58	33

Raw Score	Standard Scores M = 100, SD = 20	T Score	Raw Score	Standard Scores M = 100, SD = 20	T Score
11	30.02	-	36	66.02	34
12	31.46	-	37	67.46	34
13	32.90	-	38	68.90	35
14	34.34	-	39	70.34	36
15	35.78	-	40	71.78	37
16	37.22	-+	41	73.22	37
17	38.66	-	42	74.66	38
18	40.10	-	43	76.10	39
19	41.54	-	44	77.54	39
20	42.98	-	45	78.98	40
21	44.42	23	46	80.42	40
22	45.86	24	47	81.86	41
23	47.30	25	48	83.30	41
24	48.74	26	49	84.74	42
25	50.18	27	50	86.18	42
51	87.62	43	86	138.02	70
52	89.06	44	87	139.46	70
53	90.50	44	88	140.90	71
54	91.94	45	89	142.34	72
55	93.38	45	90	143.78	72
56	94.82	46	91	145.22	73
57	96.26	47	92	146.66	74
58	97.70	48	93	148.10	74
59	99.14	49	94	149.54	75
60	100.58	50	95	150.98	75

Raw Score	Standard Scores M = 100, SD = 20	T Score	Raw Score	Standard Scores M = 100, SD = 20	T Score
61	102.02	51	96	152.42	75
62	103.46	52	97	153.30	76
63	104.90	53	98	155.30	78
64	106.34	54	99	156.74	84
65	107.78	54	100	158.13	-
66	109.21	55	101	159.82	-
67	110.66	56	102	161.06	-
68	112.10	56	103	162.58	-
69	113.54	57	104	163.34	-
70	114.78	58	105	165.38	-
71	116.42	59	106	166.82	-
72	117.86	59	107	168.26	-
73	119.30	60	108	169.70	-
74	120.74	60	109	171.14	-
75	122.29	61	110	172.58	-
76	123.62	62	111	174.02	-
77	125.06	63	112	175.46	-
78	126.50	64	113	176.90	-
79	127.94	64	114	178.34	-
80	129.38	65	115	179.78	-
81	130.82	66	116	181.22	-
82	132.26	87	117	182.65	-
83	133.70	68	118	184.10	-
84	135.14	69	119	185.54	-
85	136.58	69	120	186.22	-

Table 3
Percentile Norms

Percentile	Score	Percentile	Score	Percentile	Score
P ₁	24.40	P ₃₄	54.10	P ₆₇	65.80
P ₂	29.50	P ₃₅	54.50	P ₆₈	66.10
P ₃	31.20	P ₃₆	54.90	P ₆₉	66.50
P ₄	32.80	P ₃₇	55.20	P ₇₀	66.80
P ₅	34.50	P ₃₈	55.60	P ₇₁	67.20
P ₆	36.20	P ₃₉	55.90	P ₇₂	67.50
P ₇	37.80	P ₄₀	56.30	P ₇₃	67.80
P ₈	39.50	P ₄₁	56.70	P ₇₄	68.20
P ₉	40.30	P ₄₂	57.00	P ₇₅	68.50
P ₁₀	41.00	P ₄₃	57.40	P ₇₆	68.90
P ₁₁	41.80	P ₄₄	57.80	P ₇₇	69.20
P ₁₂	42.50	P ₄₅	58.10	P ₇₈	69.60
P ₁₃	43.30	P ₄₆	58.50	P ₇₉	70.30
P ₁₄	44.00	P ₄₇	58.80	P ₈₀	71.00
P ₁₅	44.80	P ₄₈	59.20	P ₈₁	71.60
P ₁₆	45.60	P ₄₉	59.60	P ₈₂	72.30
P ₁₇	46.30	P ₅₀	59.90	P ₈₃	73.00
P ₁₈	47.10	P ₅₁	60.30	P ₈₄	73.60
P ₁₉	47.80	P ₅₂	60.60	P ₈₅	74.30
P ₂₀	48.60	P ₅₃	60.90	P ₈₆	75.00
P ₂₁	49.30	P ₅₄	61.30	P ₈₇	75.60
P ₂₂	49.80	P ₅₅	61.60	P ₈₈	76.30
P ₂₃	50.20	P ₅₆	62.00	P ₈₉	77.00
P ₂₄	50.50	P ₅₇	62.30	P ₉₀	77.60
P ₂₅	50.90	P ₅₈	62.70	P ₉₁	78.30
P ₂₆	51.20	P ₅₉	63.00	P ₉₂	79.00
P ₂₇	51.60	P ₆₀	63.40	P ₉₃	79.80
P ₂₈	52.00	P ₆₁	63.70	P ₉₄	81.60
P ₂₉	52.30	P ₆₂	64.10	P ₉₅	83.00
P ₃₀	52.70	P ₆₃	64.40	P ₉₆	85.00
P ₃₁	53.10	P ₆₄	64.70	P ₉₇	86.70
P ₃₂	53.40	P ₆₅	65.20	P ₉₈	88.50
P ₃₃	53.80	P ₆₆	65.40	P ₉₉	92.40

Table 4 gives the percentile norms in respect of male, female and total samples as well as of each of the five sub tests on total sample.

Table 4
Percentile Norms in Respect of Sub Tests

	Whole Test			Sub Tests				
	Total	Male	Female	I	II	III	IV	V
P ₉₀	77.60	78.00	76.40	20.30	18.30	20.55	22.55	9 36
P ₈₀	71.00	71.50	69.20	17.30	15.50	17.75	19.30	8 06
P ₇₀	66.90	67.20	65.30	14.70	13.90	15.40	17.70	7 08
P ₆₀	63.40	63.90	61.40	13.30	12.95	13.55	16.10	6 30
P ₅₀	59.90	60.60	58.00	11.95	12.00	12.00	14.55	5 66
P ₄₀	56.30	56.40	54.90	10.65	11.05	10.60	13.00	4 84
P ₃₀	52.70	53.00	57.80	9.25	10.10	8.70	11.50	3 98
P ₂₀	48.59	48.90	47.20	7.20	8.60	6.40	10.10	1 98
P ₁₀	41.01	41.00	41.20	5.20	5.90	4.30	6.90	0 50

Scoring

All the items in sub tests I, III, IV, V are to be marked right or wrong. For each right response 'One' is to be given and for each wrong 'Zero'. Items in sub test II are to be scored on a five point scale. The best answer is to be given a credit of 'Five' while the worst answer is to be given the credit of 'One.' Final score of a testee on this sub test is obtained by dividing the so obtained scores by 5. The scores on the whole test of a testee is obtained by adding his scores on all the five sub tests. The maximum score one can obtain on this test is 120.

Scoring Key

Sub Test – I : Mental Ability

A) Word Analogy

- | | |
|-------------|-------------|
| 1. Sweet | 6. Kilogram |
| 2. Water | 7. Cry |
| 3. Weaver's | 8. Faraday |
| 4. Set | 9. Lucknow |
| 5. Axis | 10. Engine |

B) Number Series

- | | |
|-------------|---------|
| 11) 25 | 17) 50 |
| 12) 3 | 18) 105 |
| 13) 1/16 | 19) 21 |
| 14) ½ | 20) 16 |
| 15) 1 and 2 | 21) 12 |
| 16) 6/10 | 22) 31 |

C) Reasoning

- | | |
|----------------|-------------|
| 23) Sister | 28) 22 |
| 24) Mother | 29) 12 |
| 25) Nowhere | 30) 5 and 7 |
| 26) 14 minutes | 31) 1 Rs. |
| 27) 3 and 5 | 32) 3 |

Sub Test – II : Attitude towards Children

- | | |
|-------------------|-------------------|
| 1) 5, 4, 3, 2, 1 | 11) 5, 4, 3, 2, 1 |
| 2) 1, 2, 3, 4, 5 | 12) 5, 4, 3, 2, 1 |
| 3) 1, 2, 3, 4, 5 | 13) 5, 4, 3, 2, 1 |
| 4) 1, 2, 3, 4, 5 | 14) 1, 2, 3, 4, 5 |
| 5) 1, 2, 3, 4, 5 | 15) 1, 2, 3, 4, 5 |
| 6) 1, 2, 5, 4, 5 | 16) 1, 2, 3, 4, 5 |
| 7) 1, 2, 3, 4, 5 | 17) 1, 2, 3, 4, 5 |
| 8) 5, 4, 3, 2, 1 | 18) 1, 2, 3, 4, 5 |
| 9) 5, 4, 3, 2, 1 | 19) 1, 2, 3, 4, 5 |
| 10) 5, 4, 3, 2, 1 | 20) 1, 2, 3, 4, 5 |

Sub Test – III Adaptability

- | | |
|------|-------|
| 1) B | 10) D |
| 2) D | 11) A |
| 3) A | 12) C |
| 4) A | 13) D |
| 5) C | 14) A |
| 6) D | 15) B |
| 7) D | 16) D |
| 8) D | 17) B |
| 9) D | 18) C |

- | | |
|-------|-------|
| 19) C | 24) B |
| 20) D | 25) B |
| 21) A | 26) C |
| 22) D | 27) A |
| 23) A | 28) B |

Sub Test – IV Professional Information

- | | |
|-------|-------|
| 1) B | 15) A |
| 2) B | 16) A |
| 3) B | 17) B |
| 4) B | 18) B |
| 5) B | 19) B |
| 6) B | 20) B |
| 7) A | 21) A |
| 8) B | 22) B |
| 9) A | 23) B |
| 10) B | 24) A |
| 11) B | 25) A |
| 12) B | 26) B |
| 13) B | 27) B |
| 14) A | 28) A |

Sub Test – V Interest in Profession

- 1) B

2) C

3) D

4) A

5) C

6) C
- 7) D

8) D

9) C

10) A

11) D

12) B

Table 5
Areawise Distribution of Statements of Teaching Aptitude
Test Battery

Sr. No.	Areas	No. of Items	Percentage	Items Nos. as given in T. A. T. B.
1	Mental Ability			
	a) Word Analogy	10	8.23	All items from 1 to 10 in Part-I
	b) Number Series	12	10.00	All items from 11 to 22 in Part-I
	c) Reasoning	10	8.33	All items from 23 to 32 in Part-I
2	Attitude Towards Children	20	16.68	All items from 1 to 20 in Part-II
3	Adaptability	28	23.33	All items from 1 to 28 in Part-III
4	Professional Information	28	23.33	All items from 1 to 28 in Part-IV
5	Interest in Profession	12	10.00	All items from 1 to 12 in Part-IV
	Total	120	100	120

2. Teacher's Job Satisfaction Scale

Development of the Scale

The final version of the scale has 75 items based on Likert Scaling Technique. They are presented on five-point scale. The initial items were prepared after interviewing a cross section of university teachers and office bearers of the university teachers association. They were interviewed in order to know the possible irritants relating to their jobs. In the light of interview, results, discussion and the review of the literature, 100 items were formulated using Likert format. After critical evaluation of the items, only 70 items were chosen and included in the draft copy. Draft copies were sent to judges (experts in the area of psychology, sociology and business management etc.) with the request to examine the items in the light of relevance, ambiguity and difficulty level.

After receiving the expert comments from the judges, some items were eliminated and certain others were modified. Five new items were added to the scale in view of their relevance and importance. All these items were suggested by the judges themselves.

Administration

The scale was then cyclostyled and pretested on 50 colleges and university teachers. The purpose of pretesting was only to find out whether these items could be easily understood by the subjects without any ambiguity. While administering the scale for pretesting utmost

care was taken to record difficulty and ambiguity comments of the respondents. The pretesting did not necessitate any change or modification of any of the seventy-four items.

Scoring

The final version consists of items where a respondent has to make his/her agreement with each item on a five-point scale. All these items are given a score from 5 to 1 i. e. strongly agree to strongly disagree. The sum of these values gives the job satisfaction scores for the subject.

Reliability

The reliability was worked out by both the split half and test – retest methods. The reliability coefficients were 0.85 and 0.95 respectively.

Validity

The scale was validated against Bayfield and Rother's (1951) Job Satisfaction Index. The validity coefficient was worked out and it was found to be 0.87. Since both the reliability and validity coefficients were significant at 0.01 level, the scale was finally prepared.

Norms

Norms of the test were prepared by administering the scale on 230 randomly selected male and female college/university teachers of M. D. University, Rohtak. The following statistics were obtained.

Mean	224.82
Median	224.96
Standard Deviation	14.71
SK	0.13
Ku	0.29
Q ₁	210.26
Q ₃	239.16

The individuals scoring above 239 would be having high job satisfaction while the individuals falling below 210 would be rated as having low job satisfaction. The middle range of scores indicates moderate degree of job satisfaction.

Areawise Distribution of Teachers Job Satisfaction Scale

There are 75 statements in this scale. They are divided in following variables.

1. Salary
2. Promotions
3. Age
4. Experience
5. Primary and Secondary Needs
6. Opportunities
7. Congenial Working Conditions
8. Supervision
9. Degree of Participation in Goal Setting.

Table 6
Areawise Distribution of Teachers Job Satisfaction

Sr. No.	Areas of Scale	No. of Statements
1	Salary	09
2	Promotion	05
3	Age	04
4	Experience	12
5	Primary and Secondary Needs	09
6	Opportunities for Advancement	10
7	Congenial Working Conditions	17
8	Supervision	04
9	Degree of Participation in Goal Setting	05
	Total	75

The individual scoring above 239 would be having high job satisfaction.

While individuals falling below 210 would be rated as low job satisfaction.

The middle range of score indicates moderate degree of job satisfaction.

Table 7
Meaning of Job Satisfaction Grades

Sr. No.	Grades	Meaning
1	Above 239	High Job Satisfaction
2	210 to 238	Moderate Job Satisfaction
3	Below 210	Low Job Satisfaction

3.6 Data Collection

This step involves actual collection of the information required for the purpose of the study.

Researcher had studied 23 B. Ed. colleges in Shivaji University, Kolhapur. The teacher educators of all 23 B. Ed. colleges are selected for this study.

The researcher administered Teaching Aptitude Test Battery by Dr. R. P. Singh and Dr. S. N. Sharma and Teachers Job Satisfaction Scale by Mudgil, Mudhar and Bhatia to 130 teacher educators in B. Ed. colleges affiliated to Shivaji University, Kolhapur.

Researcher collect required data as per instructions as given in the manuals of the tools. Thus, data was collected.

3.7 Analysis of the Data

The collected data from various scales may have little meaning to the investigator until it was processed by statistical techniques.

1. The raw scores obtained by administering Teaching Aptitude Test Battery to teacher educators of B. Ed. colleges.
2. The raw scores was also obtained by administering Teachers Job Satisfaction Scale to teacher educators of B. Ed. colleges.
3. Data was collected from teacher educators of B. Ed. colleges affiliated to Shivaji University, Kolhapur.

4. Collected data was interpreted as per manuals and presented in respected tables.

3.8 Descriptive Analysis

Data were described in terms of different characteristics of groups. Several basic types of statistical measures was appropriate in describing and analyzing data in a meaningful way.

For the present study, following statistics methods were used.

- i) Percentage
- ii) ANOVA