

CHAPTER-V

RESEARCH PROCEDURE

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5.1 INTRODUCTION:

In the previous chapter researcher has given a brief account of the related literature of concern study.

This chapter deals with the procedure for the present research work. Researcher has described the various steps taken for the construction of test and also mentioned sample selection procedure , statistical formulae employed for the analysis of data.

The main stages of this research study are,

1. Construction of the emotional intelligence test (E.I.T.)
2. Administration of the E.I.T. on the student teachers.
3. To study the relationship between the emotional intelligence score and academic achievement score.

5.2 CONSTRUCTION OF THE TEST :

5.2.1 PLANNING OF THE TEST :

The initial step in the development in standardized test is the preparation of test plan. So the researcher planned the objectives , content , population of the test, item types and the procedure to be followed in test development.

The researcher studied the concept of emotional intelligence in detail and decided the following 10 competencies of emotional intelligence for the study.

1. Accurate self assessment
2. Self –confidence
3. Self-control
4. Conscientiousness
5. Initiative
6. Optimism
7. Understanding others
8. Developing others
9. Communications
10. Leadership

For construction of the test , the researcher had taken following limitations into account.

1. The main limitation was that the test was specially constructed for the student teachers.
2. For standardization and norm calculation the same heterogeneous sample was used .

5.2.2 PREPARATION OF A FIRST DRAFT :

After planning , the next step is item writing. Originally 150 statements were collected by his own experience and through the literature on emotional intelligence.

After careful discussion personally with the teacher educators and the persons knowledgeable in the field of education and psychology taking suggestions from them, weak and poor items were either modified and improved or dropped. Initially 100 items were selected.

5.2.3 ITEM EVALUATION :

5.2.3.1 SEARCH OF THE JUDGES :

For the selection of the judges, the researcher prepared the criteria as follows,

1. Teacher Educators teaching Educational Psychology.
2. Lecturers in Psychology of senior college.
3. Clinical Psychologist.

Researcher collected the names and addresses of the judges.

(Appendix E)

The next step in the procedure was to contact these judges and request them for their co-operation by giving them clear instruction.

5.2.3.2 INSTRUCTION TO JUDGES :

The researcher sent the forwarding letter to each and every judges along-with the list of 100 statement and one evaluation

scale for validation of items with this researcher sent self addressed envelope with postage for returning the list of statements.(Appendix A and B)

After the period of a month the researcher sent reminders to the judges and he also personally visited the judges who were within his reach . After about a period of one and half month 15 lists were received from the judges.

Following Table shows the program of the collection of scales from the judges.

TABLE 2

PROGRAM OF THE COLLECTION OF SCALES FROM THE JUDGES.

Sr. No	Date	Description	No. of scales Received.
1	10/09/2002	Scales sent to 25 Judges	8 scales were received within month.
2	10/10/2002	Remainder sent to 17 Judges	3 scales were received within half month
3	22/10/2002	Researcher visited personally to 9 judges	4 scales were received
Total			15

Evaluation scales received from the judges were classified in the following categories.

TABLE 3

CATEGORY WISE CLASSIFICATION OF JUDGES.

Sr.No.	Category	No.of judges.
1	Teacher Educator teaching Educational Psychology	8
2	Lecturer of Psychology	4
3	Clinical Psychologist	3
Total		15

5.2.4 PRELIMINARY FORM OF THE TEST:

After receiving the list of statements which had received by them , some items were improved or dropped. On the recommendation of the judges the language of a few statements was changed and some new items were introduced. On the basis of the above mentioned , 100 Items were selected in the preliminary form of the test. (Appendix C)

5.2.5 TRY-OUT :

The preliminary try out of the emotional intelligence test was conducted on the date of 30/10/2002 to a sample of 73 student teachers of College of Education, Kagal, Dist. Kolhapur.

5.2.5.1 ADMINISTRATION OF THE TEST :

The subjects should be properly motivated to take the test. After the subjects were seated comfortably, the tests were distributed to them. The subjects were asked to fill up the columns of name, age, sex etc. printed on the answer sheet. To ensure careful reading of the instructions appearing on the cover page the researcher read them loudly and subjects read them silently. After that, their difficulties were asked and solved. The language used by the test administrator is as simple as possible so that each one understands what is required of him. The subjects were then asked to turn the page and to begin answering the items. No time limit was imposed. Ordinarily not more than 30 to 35 minutes were required for all subjects to complete the test.

5.2.5.2 SCORING :

For the purpose of scoring the test, when the statement was positive, 4 marks should be given to 'totally agree' response, 3 marks to 'agree' response, 2 marks to 'doubtful' response, and 0 marks to 'totally disagree' response. When statement was negative the scoring was vis-versa. For getting the total score, each response mark of a given statement should be added together to form total raw score of the test.

5.2.5.3 ITEM ANALYSIS :

According to Gilford , J.P. (1954, P.425), item analysis was done on the basis of first try out. The discrimination power of each item was calculated by applying the formula.

$$ULI = \frac{R_u - R_L}{f}$$

Where

ULI = Upper-Lower Index .

R_u, R_L = Numbers giving right answers in upper and lower groups , respectively.

f = Number of examinees in each group.

In this context, right answer means the answer which tallies with the value of 'totally agree' and wrong answer mean the answer which tallies with the values of 'totally disagree' for positive statement and vis-versa for negative statement.

According to Freeman, F.S.(1971,P.116) ,” Kelly has offered evidence indicating that most marked and significant discrimination between extreme groups is obtained when item analysis is based upon the highest 27 percent and the lowest 27 percent

of the group. ” So the researcher made two orientation groups. Namely upper and lower. In upper group 27% of the subjects with the highest scores and in lower group 27 % of the subjects with the lowest score scored in the try-out of the emotional intelligence test.

“ As a general rule, items with validity indices (i.e. discriminative power) of 0.20 or more are regarded as satisfactory ; but the items with lower indices will often serve if the test is long. Items having zero validity are, of course useless. These items and items having negative validity must be discarded, or they must be carefully examined for ambiguities in accuracies and other errors.”
Garret,H.E.(1967,P.368).

5.2.6 FINAL FORM OF THE TEST :

After calculating the validity indices (upper-lower index) by using general rule , 30 statements were rejected. Table 4 showed the number of items rejected form Preliminary form.so in the final form of the E.I.T. there remained 70 statements. Table 5 gave number of items remained in each competency in the final form of the test.

TABLE 4
NUMBER OF ITEMS REJECTED FROM PRELIMINARY FORM.

Sr.No	Name of the competency	Item Nos. rejected	Total no of items rejected from each competency
1	Accurate self assessment	1,6,9	3
2	Self-confidence	11,15,17	3
3	Self-control	22,24,28	3
4	Conscientiousness	36,37,39	3
5	Initiative	43,47,48	3
6	Optimism	51,52,54	3
7	Understanding others	63,68,69	3
8	Developing others	72,73,76	3
9	Communication	86,87,88	3
10	Leadership	94,98,99	3
Total			30

TABLE 5
NUMBER OF ITEMS REMAINED IN THE FINAL FORM

Sr.No	Name of the Competency	Total No. of items in each competency
1	Accurate self assessment	7
2	Self-confidence	7
3	Self-control	7
4	Conscientiousness	7
5	Initiative	7
6	Optimism	7
7	Understanding others	7
8	Developing others	7
9	Communication	7
10	Leadership	7
Total		70

Only the validity index was determined because Koul, Lokesh (1984,P.310) suggests that , “It is worth nothing that the items for non cognitive tests are selected only on the basis of validity index. In such type of tests there is no question of difficulty value of an item as the subject is required to respond to a series of statements or questions in ‘Yes’ and ‘No’ ‘Agree’ or ‘Disagree’ or in the similar way to indicate his feelings or opinions”.

In the final form of the test , the items were arranged as follows.

TABLE 6

COMPETENCY WISE ARRANGEMENT OF ITEMS IN FINAL FORM.

Sr.No.	Name of the competency	Item No.
1	Accurate self assessment	1,11,21,31,41,51,61
2	Self-confidence	2,12,22,32,42,52,62
3	Self-control	3,13,23,33,43,53,63
4	Conscientiousness	4,14,24,34,44,54,64
5	Initiative	5,15,25,35,45,55,65
6	Optimism	6,16,26,36,46,56,66
7	Understanding others	7,17,27,37,47,57,67
8	Developing others	8,18,28,38,48,58,68
9	Communication	9,19,29,39,49,59,69
10	Leadership	10,20,30,40,50,60,70
Total		70

The following number of items were negative in the final form of the test.

TABLE 7
NEGATIVE ITEMS IN FINAL FORM OF THE TEST.

Sr.No	Name of the competency	Item No.	Total
1	Accurate self assessment	21,41,51	3
2	Self-confidence	32	1
3	Self-control	13,43,53	3
4	Conscientiousness	54	1
5	Initiative	-	-
6	Optimism	6,56,66	3
7	Understanding others	27	1
8	Developing others	-	-
9	Communication	-	-
10	Leadership	23,30	2
		Total	14

5.3 SAMPLE:

There are 9 colleges of Education in Kolhapur district affiliated to Shivaji University , Kolhapur . Of these , the resercher selected 4 colleges of Education by Simple random sampling method (Lottery Method) for the study. These were,

1. Chh.Shivaji College of Education ,Rukadi
2. Ichalkaranji College of Education , Ichalkaranji
3. Late Shri. Hanmantrao (alias) Babasaheb Ganpatrao Kharade College of Education, Kolhapur.
4. Acharya Jawadekar College of Education ,Gargoti.

The entire population of the student were selected for study.

At the time of the administration of the test total 303 student teachers were present . Out of these one student teacher was absent for terminal examination.

Hence 302 student teachers were available for the study.

The distribution of the sample is given in pie diagram .

(See Figure I and Figure II)

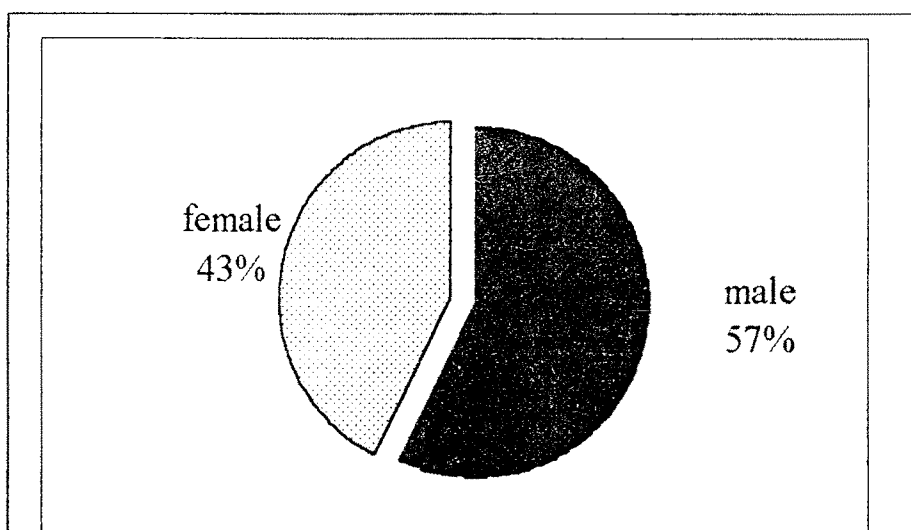


FIGURE- I
DISTRIBUTION OF MALE AND FEMALE
STUDENT TEACHERS IN SAMPLE.

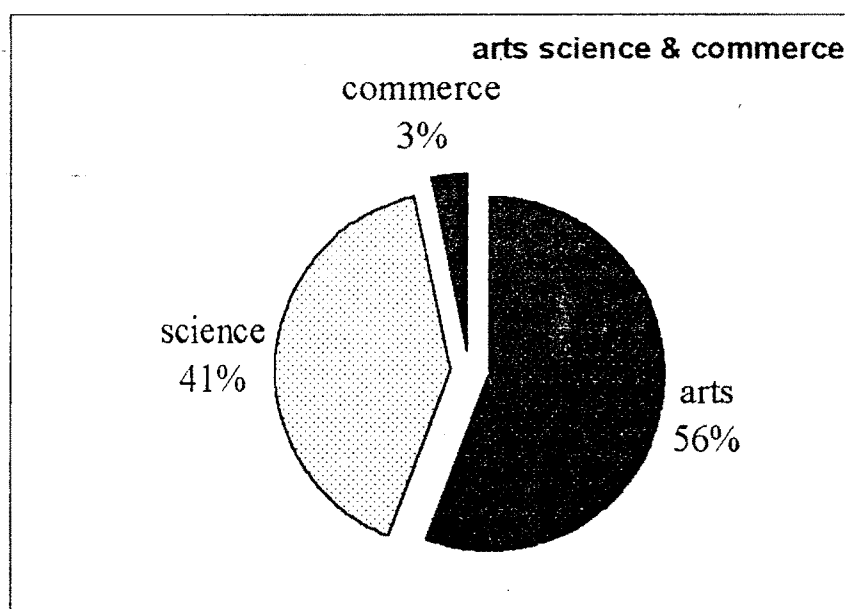


FIGURE -II
FACULTY WISE DISTRIBUTION OF STUDENT
TEACHERS IN SAMPLE.

5.4 ADMINISTRATION OF THE TEST :

In the second term of the academic year 2002-2003 , the researcher sent letters to the Principals to inform them the date of the test administration in their colleges. Researcher went to each college of Education on decided date along with the Xerox copies of the tests and administered the test. Following table shows the programme of the test administration.

TABLE 8

PROGRAM OF TEST ADMINISTRATION.

Sr. No	Date of the test administration	Name of the College of Education	No. of student Teachers present for test
1.	12/12/2003	Ichalkaranji College of Education, Ichalkaranji	72
2.	17/12/2003	Chh.Shivaji College of Education, Rukadi	78
3.	27/12/2002	Acharya Jawadekar College of Education, Gargoti .	80
4.	27/12/2003	Late shri Hanmantrao (alias) Babasaheb G.Kharade College of Education , Kolhapur	73
Total			303

After collecting the answersheets from all the student teachers, they were scored.

5.5 RELIABILITY :

The reliability of the present test was estimated through split-half method. According to Garret, H.E. (1967,P.339), “For split-half method , division was made by taking the odd-numbered items as one part and the even numbered as the other. The score was found for each individual for each half and the sets of paired scores were then correlated and this correlation was correlated by Spearman-Brown formula.”

$$1] \quad r_{II} = \frac{2r_{\frac{1I}{2II}}}{1 + r_{\frac{1I}{2II}}}$$

where r_{II} = reliability coefficient of whole test

$r_{\frac{1I}{2II}}$ = reliability coefficient of half test

According to Gilford, J.P. (1954, P.379) an alternate method for finding split –half reliability was used. This method was developed by Rulon.

He gives the following formula,

$$2] \quad r_{tt} = 1 - \frac{\sigma_d^2}{\sigma_t^2}$$

where,

d = difference between two half scores for an examinee

σ_d = SD of those differences

σ_t = SD of total scores.

Flanagan gives a formula for split half reliability as follows,

$$3] \quad r_{tt} = 2 \left(1 - \frac{\sigma_1^2 + \sigma_2^2}{\sigma_t^2} \right)$$

where ,

r_{tt} = reliability coefficient

σ_1, σ_2 = SD's of the two halves respectively

σ_t = SD of the total Score.

The following table provides the reliability coefficient determined by the above three methods on a sample of 303 subjects.

TABLE 9
RELIABILITY COEFFICIENTS OF THE TEST

Sr. No.	Method Used	Reliability coefficient
1	Odd-even method	0.87
2	Rulon's formula	0.87
3	Flanagan's formula	0.86

(For calculation of reliability coefficient , See Appendix H)

5.6 VALIDITY :

As the statements were checked by the judges and during the item analysis the validity index was calculated . On that basis the items were selected.

Hence, the face validity, content validity and logical validity have been proved.

According to Garret , H.G. (1967,P.356),“ The index of reliability is some times taken as a measure of validity ”. Hence the validity from the coefficient of reliability, the reliability index was calculated.

$$r_{\infty} = \sqrt{r_I}$$

Where,

r_{∞} = Index of reliabilty

r_I = The reliability coefficient of the test

$$r_{\infty} = \sqrt{0.87}$$

$$r_{\infty} = 0.93$$

so the reliability index indicated high validity.

5.7 NORMS :

Norms for interpretation of raw scores are as follows.

N= 303

Mean= 236.10

Standard Deviation = 21.62

Normal Range = 214-258

High= 259 and above

Low = 213 and below.

5.8 ANALYSIS OF DATA COLLECTION :

The data thus collected were further analyzed. The statistical measures like Mean (M) , standard Deviation(σ) , coefficient of correlation (r) were used.

5.9 CONCLUDING REMARKS :

Thus in this chapter the researcher has given a research procedure followed by him.

The next chapter deals with the analysis and interpretation of data collected.