CHAPTER

IV

METHOD AND PROCEDURE

4.00 Introduction

In order to make the present study yield fruitful results, the investigator consulted all the available literature given on the subject to equip himself to probe the problem systematically and thoroughly. Having studied the related literature, it was felt confident that the present study was feasible and classified the procedure for the present study in hand as follows:

4.1 Selection of the institutions, population, Sample and collection of the data.

Out of the four methods suggested by Sukhia and Mehrotra (1963), the normative survey method was chosen for the present investigation. The normative survey method aims at the collection of three types of information:

1. of what exists, by studying and analysing the important aspect of present situations;
2. of what is wanted, by clarifying the goals and objectives, possibly through a study of conditions existing else where or what the experts consider to be diserable; and

3. of how to get these, through discovering the possible means of achieving the goals on the basis of experiences of others or the opinions of experts.

4.2
The Procedure

The procedure adopted in the selection of sample and the research tools, collection of the data and its scoring was based on the objectives listed and method followed. It was essentially divided into four steps. These were:

1. Selection of the sample
2. Selection and Description of the tools
3. Administration of the research tools or data collection
4. Scoring of the data.

(A) Selection of the institution

The first step obviously was the selection of the institutions for the proposed "Study of Achievement Motivation, Personal Preferences, Perception, Anxiety, Risk-Taking Behaviour, and other Correlates in Relation to Intellegence, SES and Performance of the Prospective Secondary School Teachers of Orissa State."

While selecting the institutions and the sample, the investigator adopted the following criteria:

(i) the institutions should provide good sample towards the success of the present investigation

i.e., the institutions under study should provide freely 80 to 100 teacher trainees randomly for administration of psychological tests and questionnaires (Self Report Card for Teacher Trainees and five psychological tests)

(ii) the convenience and the cooperation of the college authorities (Principals) in providing the necessary facilities for the administration of data gathering instruments were other factors taken into consideration, to enable the investigator to visit the institutions as required for the present study.

(iii) only government teachers training colleges of Orissa state have been taken for the present study. It was felt that the researcher himself would be able to administer the questionnaires in his presence so that the required results may be scientifically obtained.

(iv) the permission of the Heads (Principals) was duly sought before taking the administration of the questionnaires when the purpose of the study was explained to them well in advance so that they may direct the teacher trainees to participate in the task willingly and may provide frank and candid opinions while filling up the Self Report Card and other psychological tools for needed

enquiry, however, the teacher trainees were assured for the secrecy of the data based on these aforesaid consideration, the population and the sample were chosen on proper lines.

4.3 Population

Population in the present study refers to the students of class B.Ed. of State of Orissa. This includes both male and female teacher trainees admitted to the Bachelor of Education degree course in all the six government Teachers' Training Colleges of Orissa which have got a good standing for launching these courses for a decade or so.

However, these government teachers training colleges, at the present are affiliated to the three different Universities: Utkal University; Berhampur University and University of Sambalpur; but the plans of the courses and admission criteria in each of the colleges are more or less the same. Out of this population of teacher trainees the sample was drawn for the present study. It is to mention that due to area and popularity of the institutions, the sanctioned strength of the students in different colleges is mentioned as under:

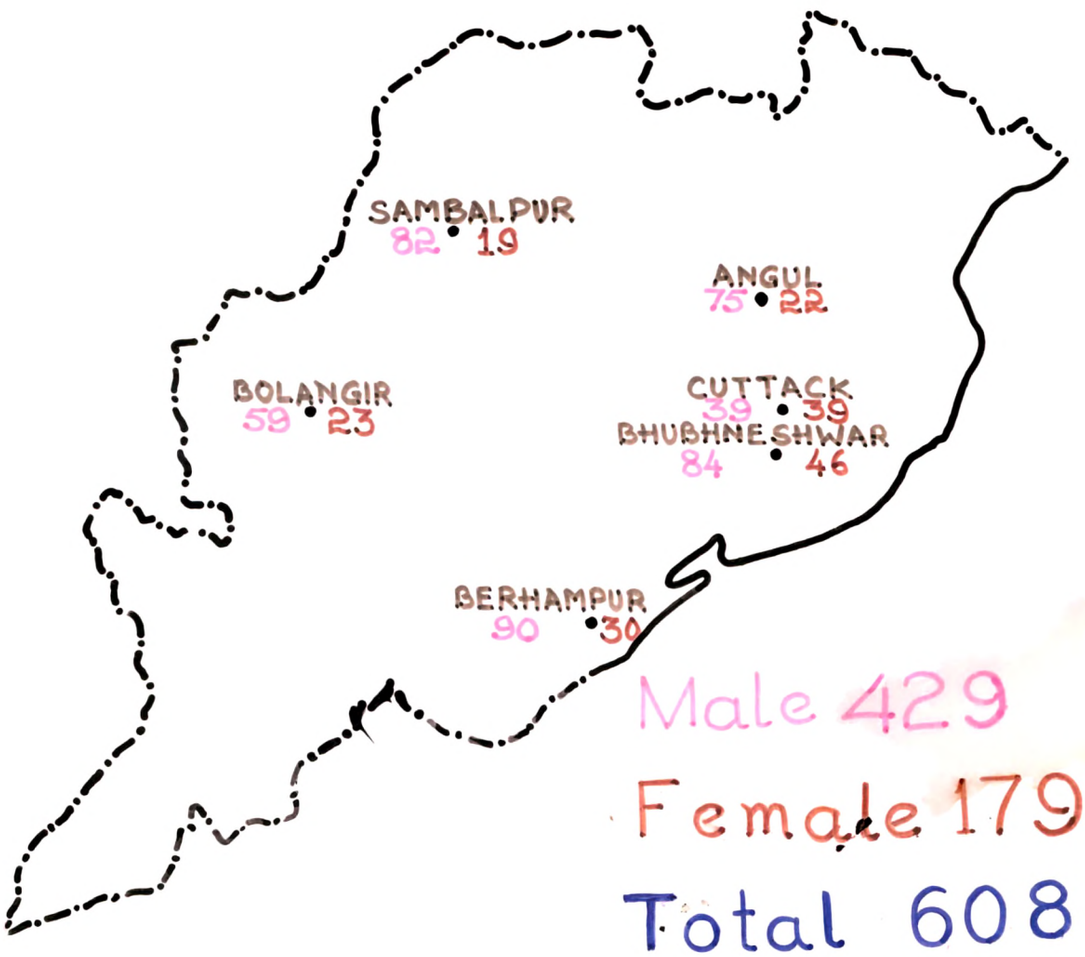
TABLE 4.1

Names of the Colleges under study with their sanctioned strength of students

S.No.	Name of the College	Students Admitted		Remarks
		Male	Female	
1.	Angul	90	30	
2.	Bhubneshwar	120	50	
3.	Berhampur	120	40	
4.	Bolangir	90	30	
5.	Cuttack	120	40	
6.	Sambalpur	140	40	

The above table enumerates the number of students to be admitted in each college for B.Ed. course which depends upon the sanctioned strength of the staff members by the government. The number of male and female candidates for the B.Ed. course maintained a certain proportion due to availability of students. However, the sanctioned strength in each college may increase or decrease due to available resources and some of the extraneous factors. However, the above table provides a rough idea as regards availability of teacher trainees in the Colleges of Orissa, which have been taken as population for the proposed work. The investigator felt to undertake his study on teacher trainees of Orissa. However, a private institution which catered the courses to B.Ed. was available but it was dropped down on the contention that it

Distribution of Study Sample in "Teacher's Training Colleges" of ORISSA State



Male 429

Female 179

Total 608

did not have better resources and adequate teaching staff (as observed). Therefore, for the proposed work in the above mentioned institutions only 80 to 100 teacher trainees were taken. No consideration for the equal number of male and female teacher trainees was made.

4.3.1. The Sample

The sample for the present study was taken up from six government teachers training colleges of Orissa. The teacher trainees (both the sexes) were selected randomly which constituted a total sample of 608 drawn from the above colleges. The age range of teacher trainees varied from 20 to 40. The responses received on the questionnaires and the standardized tests have been fairly good. On the other hand those who actually responded, did so quite enthusiastically and in proper spirit. The names of the colleges of education and the number of the candidates who participated in the present study are shown as under:

TABLE 4.2

Names of the Colleges from which the sample was drawn

Total Teacher Trainees

S.No.	Name of the college	Male	Female	Total
1.	Angul	75	22	97
2.	Berhampur	90	30	120
3.	Bhubneshwar	84	46	130
4.	Bolangir	59	23	82
5.	Cuttach	39	39	78
6.	Sambalpur	82	19	101
	Total	429	179	608

In most of the teachers training colleges of Orissa, the maximum sanctioned strength of B.Ed. trainees used to be 120 comprising of males and females(already mentioned), and out of the total student population the investigator could select 608 students in all, of the total sample, 179 were women candidates and rest were men. These prospective teachers were drawn both from urban as well as rural family back grounds. Hostel provision is available at each college for the students who are desirous of seeking admission in the hostel. Subjects were by and large from middle and the low social economic backgrounds. The majority of the sample was in the age group of 20-25 years. However, a small percentage of students could constitute the higher age range, may be due to that they could not get teacher training facilities earlier. The duration of the course is for one academic year. Out of the six training colleges, Angul, Cuttack, Bhubneshwar and Bolangir colleges are affiliated to the Utkal University, Vani Vihar, Bhubneshwar and rest of the two colleges are attached to university of Berhampur and University of Sambalpur. However, the administration of these colleges is under the control of the director of College Education, State of Orissa. These colleges cater to the students who have got the urban and rural backgrounds. Therefore, the samples drawn from each and every college resemble more or less and therefore, have provided adequate results. In all a sample of 608

students of education was thus obtained.

4.3.2
Data Gathering Tools

In order that the present research study should yield fruitful results it was thought proper that the adequate data gathering instruments or tools may be used for better analysis and results. After reviewing the related information, literature in the area of n-Ach, personal preference, perception, anxiety, risk-taking behaviour, intelligence, and SES and the different questionnaires related to explore the general backgrounds of respondents, the investigator had to make a judicious choice as regards to their selection&usages because the tools/ instruments play an important part in research, since the information collected is based upon their reliability and validity. The case of scoring and administration of the psychological tests were also considered so that on the larger population the data analysis and scoring may be observed properly. However, on the basis of the title of the study and its genuineness the investigator had to go with a limited choice as some of the tools are only applicable and show effective results at college level population sample. Therefore, after careful consideration, the following tools were selected:

1. TAT Pictures (six) for the measurement of Need Achievement Standardized by P.Mehta and his associates (1969) at N.C.E.R.T., New Delhi.

2. Edwards Personal Preference Schedule, (Revised, 1959. The Psychological Corporation, New York, for the measurement of personal preferences).

3. Perception: The Self Report Inventory: Bown, Oliver H.(1961), for the measurement of Self-perception. Inventory consists of 48 items, divided into 8 sub-scales viz self, others scale, children scale, authority scale, work scale, reality scale, parents scale and hope scale.

4. For the measurement of anxiety Sinha, Durganand's, Anxiety Scale was used to measure the anxiety state of the respondents. The scale constitutes of 100 items and these are divided into 10 major areas. This tool has been widely used by the researchers at doctoral level and post graduate studies in education and psychology. The tool is quite a good measure of anxiety and is fairly applicable in Indian conditions.

5. Risk-Taking Behaviour: For measuring the risk taking behaviour of respondents no particular tool has been used. The researcher could score out the various tests for measuring risk-taking behaviour but they can not be possibly used as such in Indian conditions. However, the risk-taking behaviour of the respondents can be interpreted by analysing the n-Ach. and

anxiety scores with achievement as per mention and discussion by McClelland (1961) and Birney, Robert C. et. al. (1969), Fear of Failure, Van Nostrand - Reinhold Company, New York.

6. Intelligence: Intelligence of the teacher trainees has been measured by Non-verbal test of intelligence. Under this category Raven's Progressive Matrices Test has been used which is widely used in Indian conditions to measure abstract intelligence with a fair accuracy.

7. Socio-economic Status Scale: Socio-economic Status Scale by Dr. Kuppuswamy, B., has been used to measure the educational, occupational and economic level of the respondents' parents but the weightage to the scoring procedure for calculating total SES has been ignored because the income slabs have changed (details given - see next).

8. Performance: For performance data, no tool was devised but the total B.Ed. marks secured by the respondents converted into percentage were used for prediction of success etc., because six institutions have got more or less similar courses of studies. Therefore, the conversion of the total marks obtained by the teacher trainees at the B.Ed. final examination(theory and practice aggregate marks) into percentages was worked out so that it may convey the same ideas for easy interpretations.

TABLE 5.67

Showing Ms. S.Ds. and significant difference in means of 15 personality needs in relation to three levels of economic status N 608
(Independent variable economic Status (ECS) with dependent EPPS)

		Ach.	Aff.	Nur.	Def.	Int.	Chg.	Ord.	Suc.	End.	Exh.	Dom	Het.	Aut.	Aba	Agg.
1 ECS	Mean	14.500	14.167	15.333	15.667	13.667	14.500	13.667	10.333	16.500	12.167	15.167	12.000	13.500	14.833	14.167
N = 6	S.D.	1.04	3.251	4.320	1.366	3.445	2.881	2.805	1.862	8.728	2.041	2.137	6.723	8.391	3.312	3.345
2 ECS	Mean	14.194	13.922	15.577	14.708	14.783	15.309	14.891	13.104	14.59	13.075	18.925	11.500	13.008	14.189	13.128
N = 530	S.D.	3.270	3.412	3.609	8.159	3.287	3.568	3.662	3.747	3.539	3.229	8.249	5.461	3.380	4.085	3.304
3 ECS	Mean	13.361	15.014	15.319	14.111	14.319	14.458	14.903	13.194	14.250	13.403	14.625	12.361	13.278	14.028	13.889
N = 72	S.D.	2.790	3.396	2.896	3.244	2.978	2.979	3.328	3.231	3.075	2.842	6.403	4.365	3.430	2.732	8.213
1 ESS/2 ECS																
D.F. 534	t-values	0.229	0.170	0.150	0.665	0.827	0.553	0.782	1.807	1.313	0.688	0.934	0.207	0.355	0.385	0.765
2 ECS/ 3 ECS																
D.F. 600	t-values	2.062*	2.535*	0.595	1.749	1.135	1.934	0.139	0.196	0.777	0.818	1.482	1.238	0.636	0.324	1.889
3 ECS/1 ECS	t-values	0.589	0.589	0.011	1.160	0.510	0.033	0.883	2.131*	1.696	1.040	0.205	0.186	0.153	0.683	0.502

* Significant at .05 level

**, Singnificant at .01 level

9. Self-Report Card for Teachers: This questionnaire was developed by the investigator for exploring the general background of the respondents which seemed to have a significant bearing on achievement motivation and the related variables under the present study (details - see appendix).

On the basis of the above tools, the investigator felt to collect the data from six training colleges of Orissa which admit students for B.Ed. training course. The investigator is of the opinion that the survey conducted by him could bring forth good results. It was surprising to find that the teacher trainees of Orissa are also well versed in understanding the Hindi language and its related vocabulary for understanding the psychological test material and they could respond effectively (it was an added advantage for the investigator to make the teacher trainees understand the real genesis of test items and also it gave an ease in the administration of the test.

Having used these tests and questionnaire, the requisite data was collected and analysed for fruitful results.

4.4 DESCRIPTION OF THE TOOLS USED

1.1 TAT Pictures

The term "achievement motive" refers to the need for achievement. Motives are considered as latent dispositions to strive for a particular goal, state or aim e.g.,

achievement, affiliation or power. As motives are latent dispositions, they can be inferred from the thought sample. Thus, it can be said that motives are different patterns of thought associated with different goals. Achievement motive can be inferred from the achievement thoughts. Achievement thoughts are those which are associated with striving for some kind of excellence as opposed to the thoughts associated with gaining prestige or with establishing friendly relationship.

McClelland, et. al. (1953) have arrived at a behavioural sequences, after classifying many aspects of the behaviour and experiences reflected by the individuals in the imaginative stories. Summarizing their observations, McClelland, Atkinson and others suggested that the thoughts of individuals, having n-Ach. are associated with the following pattern:

1. Individual experiences a state of need or motive(N);
2. Individual may also be anticipating successful attainment of his goals (Ga+) or anticipating frustration (Ga-) and failure;
3. He may engage in activity instrumental (I) to the attainment of his goal, which may lead to the attainment of the goal(I+) or not (I-);
4. Sometimes his goals directed activity will be blocked. The obstacle or block (B) to his progress may be located in the world at large (BW) or it may be located in himself (BP);

5. he may experience strong positive and negative effective states while engaged in solving his problem i.e., in attempting to gratify his motive. He is likely to experience a state of positive effect (G+) in goal attainment or a state of negative affect (G-) when his goal directed activity is thwarted or he fails.

6. often some one will help or sympathise with the individual (NUP), aiding him in his goal directed behaviour - (P.147).

Accepting these as general ideas regarding the nature of n-Ach; it was tried to get the measure of n-Ach.

The first major work on measuring human motives, particularly, the need for achievement (n-Ach.) was done by McClelland (1948) and his co-workers. McClelland and Friedman (1952) established that the Thematic Apperception Test (TAT) was the most reliable single instrument for the measurement of n-Ach. This method of measurement has been used by many researchers as emphasized by the works of McClelland (1955, 1961, 1965), McClelland, Atkinson, et.al. (1953), McClelland,Rindlishbacher and Decharms (1955), and others. Before TAT, for measuring n-Ach., was accepted for research as a useful instrument, several researchers commented its usefulness. Holt (1961) commenting on TAT measures observed that while TAT stories are not precise equivalents of fantasy, a better method for eliciting fantasy has yet to be devised.

In this connection, Atkinson (1958) observed that there seems to be a general agreement among researchers that states of deprivation and experimentally aroused motives are reflected in TAT stories although not under all conditions.

Atkinson (1958,1964), Lesser (1957, 1958), Sanford (1943) argue that the relationship between fantasy and behaviour is generally direct, that is, that a motive will appear in both behaviour and fantasy, unless some force as social disapproval blocks its expression.

But Broverman, Jordan and Phillips (1960), Lazarus (1961), Vegal, Raymond, and Lazarus (1959) criticized that fantasy functions as a substitute for behaviour.

Besides TAT techniques Fresh (1965) Test of Insight (FTI), Edwards(1954) Personal Preferences Schedule (EPPS), Questionnaire Schedule, Alport and Haber (1960), such as Achievement Anxiety Test(AAT), Carney's (1964,1965) Questionnaire Index (Achievement Orientation), California Psychological Inventory (CPI) by Gough (1957) etc., have been used by the researchers to determine some components of n-Ach. level or global n-Ach. score.

After reviewing and comparing results of number of researchers, pertaining to the methods of measuring n-Ach., Atkinson has reached the conclusion that:

The three main methods of measuring human motive yield essentially uncorrelated results, and it, therefore, seems wise for research workers to employ terminology which

will communicate immediately which method of measurement they are using (Atkinson, 1966, p.41).

Edwards have also commented on this point as, "more failure of communication occurs if the authors call their variables n-Achievement when they are using uncorrelated method of measurement" (Edwards, 1954, pp 22-25).

Moreover, it has been shown by McClelland, Atkinson and others (1953) that the discriminative power of the TAT method is best under neutral test conditions and with pictures of moderate achievement cue value. This shows the different pictures may have different achievement cue value, some may be weak, some may be strong. Following these recommendations it was decided to obtain the n-Ach. score through TAT technique only. After deciding this the investigator consulted the report of Mehta, P. (1969) wherein he has used TAT pictures, The pictures developed by Mehta (1969) suited to Indian culture and have been developed for school and college going population. Therefore, the investigator has decided to use the same for the measurement of n-Ach. score. The total (TAT) selected for the study consists of six pictures each in 53 cms x 46 cms. size. The picture cues are as follows:

Picture No.	Description of the cue
1.	A doctor and a patient.
2.	A boy learning Tabla(a musical instrument from the teacher.
3.	A boy reading a book, sitting on a cot.

4. A boy with a note book, an inkpot and a pen.

5. A group of boys playing cricket.

6. A boy painting.

The TAT is a group test, and it has been standardized by Mehta, P. (1968). The subjects were required to observe the picture for 20 seconds and then, write a story based on it in four minutes. In the same manner each subject has to write six stories based on the six pictures presented in the order shown.

1.2 Administration of the Test

The test constructor has given set instructions for the administrations of the test and the same are printed on the back page of the answer sheet which is modelled after Murray's TAT test. The instructions read to the students are as given below:-

> "Each of you will be given a booklet containing six pictures and a separate answer book(Appendix 1) You have to furnish the information as required on the cover page of the answer book. You will be given 26 seconds time to see each picture and just after that you will be required to frame a story about each picture. The time of each story will be four minutes only."

The instructions were printed in Hindi as well as in English on the answer book so that students may understand it easily. The students were further instructed that they

had to write each story on a single page and exactly in sequence as it is shown. They may choose any medium they like (because the students of Orissa are familiar with the English language so they could possibly write effectively. More over, the investigator did not know oriya language - being a North Indian. So, only English and Hindi scripts were valued.)

The investigator, then, gave necessary instructions regarding when to see the picture, to start writing the story and to stop writing. In this way the students can possibly complete all the six stories in about 24 minutes time. Students were asked to answer the following four questions for each and every story:

1. What is happening?
2. What has led upto this situation?
3. What is being thought?
4. What will be done?

1.3
The Scoring of the stories

The main purpose behind TAT test was to get the correct scores on n-Ach. The investigator practised the scoring technique by consulting the manual and the exercises given in the book "Motives in Fantasy Action and Society", (1964 pp. 179 - 204). and Dr. Mehta, P.'s book - The Achievement Motive in High School Boys, and he could develop a good mastery over the scoring technique of TAT stories.

After a lot of practice and discussions with the experts in the department of education, Regional College of Education, Ajmer and M.S. University Baroda, the investigator got achievement imagery (A.I.) agreement of 10.81 This was a sufficient index of acquiring a genuine skill to score the stories methodically. Accordingly, all the stories were scored by the investigator himself. The weightage to different categories and sub-categories was given as follows:

U.I.	(Unrelated imagery)	-1
T.I.	(Task imagery)	0
A.I.	(Achievement imagery)	+1
N	(Need)	+1
I+1?	1-(Instrumental activity)	+1
Ga+	(Positive anticipatory goal)	+1
Ga-	(Negative anticipatory goal)	+1
BP	(Personal obstacle)	+1
BW	(Outside world obstacle)	+1
Nup	(Nurturant Press)	+1
G+	(Positive affective states)	+1
G-	(Negative affective states	+1
Th	(Achievement thema)	+1

The scores as indicated above for different sub-categories were summed up story-wise and also for all the six stories per teacher trainee. The possibility of minimum and maximum score per story which a subject can get in each

story is from -1 to +11. Thus, the total of all the 6 stories may vary from -6 to +66. It is heartening to find that the achievement motivation course in the whole sample is within the score-range of -6 to +40 at the most. In some of the cases it is very much depressing,i.e., they are not academically much motivated. However, the TAT tests are very difficult to score and the variations in scoring aspects have been observed from scorer to scorer but this aspect is to be admitted as such. However, proper precautions and technique can also be observed. The present investigator could take it with all possible care.

1.4

Reliability of the Test.

The test-retest reliability of this set of pictures after an interval of four months was found to be .56 (N=22) in one case, and .73 (N=42, corrected) in other case.

Chaudhary (1971) found a test-retest reliability of .70 (N=100) after an interval of one month and a split-half reliability of .54 (N=100, corrected).

1.5

Validity of the Test

Mehta, P. (1969) reported a high theoretical validity of TAT test.

Chaudhary (1971) studied its construct validity against measure of persistence and found r=.44 (N=100,P $<$ .01).

Pandharipanda (1972) once again checked the validity of Mehta's TAT and the EPPS against teachers assessment. The TAT and EPPS were administered to 5 top and 5 low n-Ach. students. The CR was found to be significant for TAT ($P < .01$) but not for EPPS.

Studies suggested that TAT type instrument developed specifically for use with Indian students, possess good reliability and validity. However, it does not suggest norms, for evaluation and comparison. It has been widely used to measure the n-Ach. of school children in the country.

4.4.2
Edwards Personal Preferences

Schedule-Personality Test

The study aimed at finding personal preferences, personality needs of the teacher trainees and it was expected that these factors were related to academic performance. Certain personality needs have been logically considered having important bearing on academic achievements. The needs like achievement, endurance, autonomy, dominance, affiliation, aggression, abasement, nurturance etc., may be expected to influence academic performance of the subjects. The review of the existing literature in the field supported this kind of thinking. In a number of studies these needs had been found related to academic performance of school and college pupils, though in different ways. For measuring these needs, the EPPS had been used in most of these studies. Unfortunately, the findings have been conflicting and no

definite conclusion can be drawn from them. The investigator writes with confidence that no such study at the teacher training level so far has been conducted which may study such variables as akin to the present one. Hence, it was decided to use the EPPS as the study was undertaked at the post graduate level. So it was one of the convictions, of the investigator that the test as such in English medium would do well. Therefore, as no other ready made and better tool could be available, so Edwards Personal Preference Schedule was considered good.

4.4.2.1 EDWARDS PERSONAL PREFERENCE SCHEDULE, PSYCHOLOGICAL CORPORATION, 1954

This tool was devised "primarily as an instrument for research and counselling purposes; to provide quick and convenient measures of a number of relatively independent normal personality variables," called personality needs as defined by Murray. The tool gives measures of 15 "manifest" needs operationally defined in terms of the items contained in the instrument. A unique feature of the test is an attempt of the author to minimize the operation of the social desirability factor in responses to the inventory. The tool has been used with high school and college students in America and is applicable to the age-groups beyond 12 years. Below this age-level, it may not be used as, firstly, the language is difficult and secondly, very young children do not get an opportunity to develop activities and experience preferences which are provided in the schedule.

2.2
Format of the Tool

It contains 225 items each of which has two self-descriptive statements arranged in a forced-choice format. Each of the statements is paired with the other in an item on the basis of the extent to which they are socially desireable. Each of the statements for the fifteen personality variables is paired twice with statements for the other variables. The examinee is instructed to indicate which of the statements is more characteristic of what he likes or how he feels. The

test is reusable and answers are written on a separate answer-sheet.

2.3
Time:

Though there is no time-limit, it takes on an average 40 minutes to administer the test.

2.4
Scoring Procedure:

Scoring is done with the aid of an especially designed template which is used for obtaining one of the special scores in addition to those for the fifteen personality variables. The first of these special scores is the consistency score which is obtained by counting the number of checked repeated items. Fifteen items are repeated twice through out the inventory, e.g., item 1 is the same as 151, 25 is the same as 175 etc. If the larger number of repeated items are answered in the same way, the consistency score is higher. A consistency score of 11 has been considered, on the probability basis, to represent a non-chance score. If an individual's score is 11 or more, his response will be due to chance only 6 times out of 100. It it is less than 9, there is reason to doubt the validity of his scores on the personality variables. Another special score is the profile stability score. This is obtained by correlating the two sets of partial scores (15 scores in two columns for each individual). The manual gives the distribution of profile stability coefficients for a random sample of 299 cases, the average 'r' being .74.

TABLE 5.74

Showing Ms., S.Ds. and significant difference in means in 15 E.P.P.S. Dimensions in relation to Rural/Urban residence of the trainees N=608

(Independent variable Urban/Rural (UR) with dependent EPPS)

		Ach.	Aff.	Nur.	Def.	Int.	Chg.	Ord	Suc.	End.	Exh.	Dom.	Het	Aut	Aba	Agg.
UR 1	Mean	14.078	14.090	15.662	14.714	14.877	15.184	14.797	12.969	14.421	13.099	14.007	11.806	13.161	14.246	13.184
N = 423	S.D.	3.055	3.331	3.351	3.145	3.207	3.594	3.516	3.851	3.475	3.025	3.926	5.163	3.247	4.186	3.065
UR 2	Mean	14.146	13.989	15.216	14.778	14.351	15.233	14.924	13.357	14.908	13.119	14.049	11.238	12.778	14.016	13.330
N = 185	S.D.	3.550	3.627	3.914	3.212	3.224	3.301	3.838	3.259	3.514	3.504	3.338	5.762	3.662	3.311	3.791
1 UR/2 UR																
D.F. 606	t-values	0.240	0.334	1.432	0.231	1.827	0.173	0.400	1.194	1.586	0.070	0.125	1.205	1.284	0.661	0.497

(1) Rural

(2) Urban

2.5
Standardization Procedure Followed:

The origional normative sample consisted of 749 college women and 760 college men, enrolled in various liberal arts curricula in a number of different colleges and universities. All subjects were high school graduates with some college training, but different ages. Most of the sample were in the age-range 15 to 29. The possible raw-score-range for an individual on any one personality variable is from 0 to 28. Because the items are of the forced choice variety, indication of the relative strength of response tendencies within the individual can be obtained from the various raw score totals.

2.6
Salient Features of E.P.P.S.

A unique feature of the EPPS is an attempt on controlling the 'social desirability' variable which contaminates scores on usual personality inventories. The statements contained in the EPPS had been scaled for degree of social desirability by the method of successive intervals. Also they were printed and administered to 140 college students who are asked to tick the items most characteristic of them. For each item percentage of ticks was calculated. These percentages were compared against the scaled values of the same items. It was found that the percent of "yes" responses increased with the social desirability scale values. This relationship was found to be linear with a coefficient of correlation of .87. After having determined

the social desirability values of statements they were paired together. Two statements representing two different needs but having almost equal social desirability values have been combined together. In this way, in the EPPS, an attempt is made to minimize the influence of social desirability in response to the statements.

Many studies have been made to demonstrate the effectiveness of the control of social desirability variable. Some have yielded favourable results and some unfavourable. It is difficult to reach any definite conclusion at present. Super has summarised the position in a more meaningful way by saying that:

> Perhaps the most that can be said at present is that the matching of items in the EPPS has reduced but not eliminated the effects of social desirability upon test-taking attitudes.

2.7
Reliability:

Two kinds of coefficients of reliability have been cited in the manual: the coefficients of internal consistency and the stability coefficients. Internal consistency ~~and the~~ coefficients are obtained by correlating the row and column scores for each of the fifteen personality needs over the 1509 subjects in the college normative group. These coefficients corrected by the Spearman-Brown formula are reproduced in table V. Stability coefficients are represented by the test-retest correlations. These coefficients are based upon the records of a group of 89 students

at the University of Washington who took the EPPS twice with a one week interval separating the two administrations.

Split-half reliability is based on 14 items against 14 items.

TABLE 4.3

RELIABILITY COEFFICIENTS OF THE EPPS VARIABLES.

N = 1509

S.No.	Variables	Internal Consistency	Stability
1.	Achievement	.74	.74
2.	Deference	.60	.78
3.	Order	.74	.87
4.	Exhibition	.61	.74
5.	Autonomy	.76	.83
6.	Affiliation	.70	.77
7.	Intraception	.79	.86
8.	Succourance	.76	.78
9.	Dominance	.81	.87
10.	Abasement	.84	.88
11.	Nurturance	.78	.79
12.	Change	.79	.83
13.	Endurance	.81	.86
14.	Heterosexuality	.87	.85
15.	Aggression	.84	.78

In addition, a consistency score for each individual has been provided which is "based upon a comparison of the number of identical choices made in two sets of the same 15 items." A consistency score of 10 and above may be considered a sufficient guarantee that the individual is not making his choices on the basis of change alone. The chance probablity of a score of 10 or more is only about .15.

2.8
Validity:

The validity of any personality inventory, at least in the sense that "it measures what it purports to measure", is difficult to be established as this involves the correlation between scores on the inventory and some "pure criterion measures." Such pure criterion measures are generally not available. Hence, the author of the EPPS has substituted self-ratings or ratings by peers for the pure criterion measures. Indications of the validities have been ascertained by correlating scores on EPPS with scores on other personality tools also such as Guilford-Martin Personnel Inventory and Taylor Manifest Anxiety Scale. These correlations directly do not indicate anything about the construct validity of the EPPS. Only some evidence of this is obtained just by way of inference. Hence, in the strictest sense it is difficult to say without doubt that the EPPS measures to academic achievement of high school students. To achieve this objectives, scores on these variables were

correlated with the school marks. Each student had scores in six different school subjects. An average composite score for each student was computed. This was done by converting raw scores into normalized 'T' scores. This conversion was warranted by the suspected significantly large differences between the variance of scores in different subjects, which made the raw scores non-additive. Adding all the six T-scores are dividing the total by six (the number of subjects) yielded one composite average T-score for each student. Thus, the data consisted of six sets of scores on personality needs and one set of achievement T-scores. Nature of relationship that might be existing between these two types of variables (personality and academic achievement) was investigated after controlling certain relevant variables.

After eliminating several subjects for various reasons, data for 261 IX class students were finally available on the following variables:

1. Intelligence
2. Age
3. Academic Achievement
4. Socio-economic Status
5. Personality Needs

Scores on only six needs found to be related to academic achievement as described earlier were utilized for

final analysis. They were termed as variables X_1, X_2, X_3, X_4, X_5 and X_6 in which X_1 = n achievement, X_2 = n affiliation, X_3 = n dominance, X_4 = n nurturance, X_5 = n endurance and X_6 = n aggression.

Intelligence and academic achievement were denoted by 'a' and 'c' respectively.

Two sets of correlations were computed for each age-group: one set of correlations between each of the above six personality needs and academic achievement (i.e., cx_1, cx_2, cx_3, cx_4, cx_5, and cx_6) and the other of correlations between intelligence and each of the above six personality needs (i.e. ax_1, ax_2, ax_3, ax_4, ax_5 and ax_6). The set cx_1 to cx_6 represents relationships between personality needs and academic achievement. But this relationship may not be true relationship. The contribution of intelligence to academic achievement (ax_1 to ax_6) is also mixed up with it. The observed relationship between personality variables (X_1 to X_6) and academic achievement are partly influenced by intelligence. It was thought, therefore, necessary to remove the variability which could be predicted from intelligence. This was achieved by computing partial correlations between personality variables and academic achievement after partialling out the effect of intelligence. These partial correlations between personality variables and academic achievement (i.e., $cx_{1.a}$ to $cx_{6.a}$) were considered representing more genuine relationship between these two sets of variables.

All the correlations between different sets of variables have been computed by taking within-school sums of squares and cross-products for each variable thus eliminating the between-school variations. This takes out the differential effect of school conditions which mask the true differences among the students with regard to personality variables and academic achievement. These within-school correlations were obtained by dividing the sum of within-school cross-products of the variables over six schools by the product of squares of the correlated variables. The importance and appropriatness of this method have been emphasized by Lindquist. This was the way how the school-differences earlier contemplated to contaminate the relationship that might be existing between personality variables and academic achievement were controlled.

As the sample had been drawn from the middle section of the distribution of socio-economic status and homogeneity on this variable was ensured the possibility of distortion of results by the variability due to socio-economic differences among subjects was roughly removed.

Results have been analysed age-wise. This safeguards against misinterpretation of the results due to the influence of age-factor. It was considered earlier that there might be a differential configuration of personality-needs predicting academic achievement differently at

different age-levels. Three homogenous age-groups were formed, therefore, for the purpose of final analysis and evaluation of relationship of personality variables with academic achievement. Three sets of partial correlations have been computed for three age-groups separately. In this way age-factor was taken care of.

It was felt that pooling school-marks over different subjects and preparing one single overall distribution for both the science, and arts marks as the criterion of achievement is meaningful, if the purpose is to study the relationship of personality with some general factor of achievement running through all types of academic courses. This may throw light on the personality factors of general academic achievement; but personality may be related differently to different types of academic achievement. What is true of the general achievement may not be so in case of more specific types of achievement such as achievement in science or arts. A different pattern of need-predictors may be existing for achievement in each specific course. A verification of this hypothesis was considered important from the point of view of practical implications of the research-findings. Analysis of results was, therefore, extended further and each age group was also split into two sub-groups: arts group and science group.

Partial correlations between personality variables and academic achievement in arts and science separately

within each age-group were, then, worked out. Thus, three sets of partial correlations were obtained:

1. Partial r_s for the whole group combining both the arts and science group.
2. Partial r_s for arts group.
3. Partial r_s for science group.

In all, nine sets of partial correlations were computed: three for general achievement age-groups, three for science achievement age-groups and three for arts achievement age-groups.

Within each group significant correlations at .05 and .01 levels of confidence were identified. Interpretation of relationship of personality with academic achievement is finally based on the nature and number of only these significant partial correlations within each group.

4.4.3 Self-Report Inventory

This instrument, originally developed in 1958 has undergone three revisions following factor analysis. The instrument is frankly in phenomenological tradition (Wylie, 1961) and may also be subsummed under that psychometric approach described by Allport (1961) as 'direct'. The SRI was made up of 48 items representing 8 factorially distinct areas of phenomenal world. Although, originally intended for use with college students and teachers, the instrument has been found to be discriminating with other population - mentallyretarded, mono-lingual

and emotionally disturbed college students. SRI is designed as a straight forward self-assessment instrument in which subjects can record their own perceptions and feelings towards themselves and significant areas of their phenomenal world. SRI is different from other existing instruments in several respects. They were either too long and time consuming, too complicated to be essentially self administered or constructed in such a way that an index of self-perception or at most, indices of acceptance of self and others were the only scores obtainable. In these circumstances, SRI was planned which was short, self-administered and capable of yielding multiple scores representing positiveness of attitude towards self and various segments of the phenomenal world. The theoretical background of the instrument is Rogerian (1951). The Central construct is that human behaviour is determined by individual's perceptions of the self and of the situations in which the individual is involved, his relations to significant others and to his environment.

Items of the Instrument were either to express one of the different kinds of aspects. (1) Positive approaching or valuing, (2) Negative avoiding or rejecting, (3) Neutral or indifferent. Also the items were worded in such a way that it was not feasible to provide for responses on the Likert type five-point scale, ranging from "exactly what I like or feel the opposite of what I like of feel."

The description of the areas which the instruments measure are given below:

1. Self: Items express acceptance, liking or valuing of oneself or the opposite.
2. Others: Items express acceptance, liking or valuing of peers or the importance of satisfactory, relationships with peers to one's own sense of well beings or the opposite.
3. Children: Items express acceptance, liking or valuing of children or the satisfaction derived by the subject in relationships with children or the opposite.
4. Authority: Items express acceptance, liking or valuing of older persons outside the family who are in position of authority with respect to subject or the opposite.
5. Work: Items express valuing of work or accomplishment in terms of its intrinsic or self enhancing satisfaction to the subject or the opposite.
6. Reality: Items express acceptance or valuing of life as a process (including death) and feeling at home and relatively comfortable with not always predictable world or the opposite.
7. Parents: Items express acceptance, liking or valuing of one's own parents or the importance of one's relationship with parents to his own sense of well-being or the opposite.

8. Hope: Items express anoptimistic anticipation of the future or a sense of confidence that one will play a significant and satisfying role in future relationships and undertaking or the opposite.

9. The Total: The sum of all sub-scores that may be constructed as the positiveness of respondent's perceptions of his phenomenal world.

The 48 items are classified into 8 areas, each of which is measured by the sum of an independent set of 6 item scores. The scale scores are thus obtained by the method of summated rating. The serial numbers of the items of the 8 scales are shown in the following table:

TABLE 4.4

ITEMS ARRANGED BY SCALES

S.No.	Sub-Scales	Item Nos.	
1.	Self-scale	7, 15, 20, 26*, 33, 42	.78
2.	Others-scale	1*,10*,23*,30*, 38, 47	.65
3.	Children-scale	6*,14*,19*,25, 35, 45	.85
4.	Authority-scale	5, 13,21*,31, 34*,44	.53
5.	Work-scale	2, 9, 24*,29, 36*,40*	.70
6.	Reality-scale	8*, 16,22, 32*, 37, 48*	.28
7.	Parents-scale	3*, 11,17, 27, 41*,46*	.84
8.	Hope-scale	4*,12*,18, 28*, 39*,43*	.66

For Total scores α = .87

*Response scale (1-5) reversed during scoring.

4.4.3-1
Reliability of the Test

The internal consistency reliabilities (α) for the eight sub-scales and for total scores (Cronbach, 1951) shows high reliability of the Inventory.

Anastasi, writes that "it would be more accurate to say that report inventories are actually measures of self-concept."

4.4. 3-2
Scoring of the Test

There are in all 48 items out of which 24 are positively phrased and the remaining 24 are negatively phrased (Marked by(*) in the table), first the items were scored as follows:

	(Like me) A	B	C	(Unlike me) D	E
Positively phrased item	5	4	3	2	1
Negatively phrased item	1	2	3	4	5

After scoring each item the scores for each sub-scale categories were found out and written under the category code such as S, O, C, A, W, R, H & T. Then, the total scores for each individual was found out. In this study the raw scores were used and the data was got computarized for its relationships with other variables.

The subjects respond to each item by indicating a 5-point scale (Labelled from very much like me to very much unlike me) the extent to which the item expresses

their feelings and attitudes. The inventory yields 8 sub-scores representing positiveness of attitude in each area a total score (sum of all sub-scores) the instrument is so simple in its format that the subject would complete it in 15 - 20 minutes.

4.4.4
Anxiety Scale-Sinha W.A. Self-Analysis Form

For the present study Dr. Sinha, Durganand's Anxiety Scale was used to measure the anxiety of the respondents. Having reviewed the related literature, pertaining to anxiety, it was one of the convictions of the investigator that all the available tests on anxiety, adopted in Indian conditions, do not go well with different types of samples, i.e., they cater to different age range groups. A few of the works in India have been done by using Taylor's manifest anxiety scale (MAS) which provided a readily available measure of anxiety to the experimentalist and has stimulated a large volume of research on its correlates. Since Taylor's scale provided a quick and reliable measure of anxiety, its popularity was assured. Though it is doubtful if it measures the same anxiety as assessed by the Rorschach or as conceived by Clinician. Taylor regards her scale as a measure of drive level and conceives it on different terms than Clinician any psychiatrists.

Other anxiety tests have become popular. Sarason and Mandler (10) have developed their Test Anxiety Questionnaire (TAQ) and Cattell's IPAT. Anxiety Scale (L)

TABLE 5.81

Showing Ms., S.D.s and significant differece in means in 15 personality needs of E.P.P.S. in relation to traditional/modern family (Independent variable Traditional/Modern (TM) with dependent EPPS)

		1 Ach.	6 Aff.	11 Nur	2 Def.	7 Int.	12 Chg.	3 Ord.	8 Suc.	13 End	4 Exh	9 Dom	14 Het	5 Aut	10 Aba	15 Agg.
TM 1	Mean	14.355	13.887	14.842	14.645	14.409	14.936	14.941	12.749	14.837	13.350	14.266	12.025	13.340	14.207	13.399
N = 203	S.D.	3.284	3.530	3.271	2.965	3.176	3.487	3.601	3.722	3.416	3.118	4.567	4.733	3.383	3.413	3.098
TM 2	Mean	13.970	14.146	15.869	14.778	14.872	15.333	14.783	13.257	14.435	12.983	13.896	11.437	12.896	14.160	13.143
N = 405	S.D.	3.170	3.366	3.615	3.265	3.284	3.510	3.624	3.656	3.524	3.201	3.271	5.655	3.373	4.182	3.398
1 TM/ 2 TM D.F. 606	t-values	1.393	0.880	3.407**	0.487	1.657	1.319	0.509	1.606	1.343	1.345	1.145	1.277	1.583	0.137	0.901

1. Traditional/illiterate
2. Modern

provides a total anxiety score, as well as a break down into overt, symptomatic and convert anxiety not consciously displayed. Many other scales of anxiety are popular in the west.

4.1 Development of the Test

Anxiety has been observed to manifest itself in different spheres. A person displays anxiety when he has to meet the boss or a group (Social relationship) or he is about to start on a journey or take a test or anxiety shows itself in the form of certain bodily symptoms like sweating and tremor or comes out in the form of certain attitudes with which he faces a situation, i.e., restlessness, worry, lack of sleep and so on. It may also take the form of shame and guilt or may be seen as purely psychological symptoms like lack of confidence in decision and worry.

The manifestation of anxiety being multi-dimensional, a test was developed which could tape the various areas or dimensions as well as forms of manifestations of anxiety. Therefore, Dr. Sinha designed the questions in such a fashion to elicit self-ratings on items descriptive of anxiety, reactions to the following areas:

1. Health appearance, and injury,
2. Area of ambition (success or failure in work, money and occupation),
3. Family anxiety,

4. Anxieties regarding friendship and love,

5. Social relations and social approval,

6. Worries regarding the future,

7. Worries about civilization, war, virtue,

8. Guilt and shame,

9. Physical and psychological manifestations, and

10. Purely psychological manifestation.

It is assumed that anxiety would be revealed by the reported behaviour not in any one situation but by his average behaviour in a greater number of these situations. A more anxious person would tend to be anxious in a greater number of different situations that would a less anxious person.

The test consists of 100 items, all in positive form, when checking them as "true" is indication of anxiety.

4.2 Reliability of the Test

Reliability of the test was found out by the split-half and test-retest method. A standard error of measurement was found to be 6.10, indicating that the true score did not deviate too greatly from their true value.

TABLE 4.5

RELIABILITY OF THE TEST

Method	N	r	Index of Reliability	S.E.M.
Split-half	239	.86	.92	6.10
Test-retest	88	.73	.85	

4.3
Validity

The score on Taylor's MAS, as modified by the author was used as the first validation criterion on 70 subjects who had taken the test, then, Taylor's MAS was administered. The correlation was found to be .69 which was of the same order as obtained on the unrevised version of the Sinha's scale and indicated that the two tests were measuring almost measuring almost the same thing. Many researchers like Hundal, Dutta, and other researchers have used the Sinha's anxiety scale. Hence, it was found that test is quite effective.

4.4.
Norms

Separate norms for boys and girls in the form of percentiles have been given and can be regarded as reference points for interpreting the test scores. In both the groups, i.e., boys and girls, girls tended to have a slightly higher anxiety scores than the boys. The low scores namely, below the 25th percentile would indicate people who are under-motivated, sluggish and possessing love drive level. The middle group of scores would represent essentially normal individuals with moderately good drive level to stimulate performance without itself providing an interference.

4.5
Uses of the Test

Anxiety is a common symptom found in different populations and it is especially so amongst students. The

relationship of anxiety to academic attainment and performance on complex task is there. "High anxiety has been found to be deterrent to performance on complex activities. There exists a small though significant relationship between anxiety as measured by the scale and academic performance. Sinha has also found that in contrast to the students, with low anxiety, the academic attainment of the high anxiety student, was significantly poorer and less impressive.

The test can be successfully used for screening out students who suffer from high degree of anxiety which has a disruptive, inhibiting or interfering on the performance in examinations. Very high scores on it,i.e., about the 75th percentile may be considered as symptomatic of such high state of anxiety which is likely to have a disruptive and interfering in the performance of complex ~~test~~ task. The middle group of scores would represent essentially normal individuals with moderately, good drive level to stimulate performance without itself proving an interference.

4.6

Instruction for Administration of the Test

The subjects are given instructions which are printed on the test booklet. No time limit is prescribed for the administration of the test but generally 20 minutes are required by the individuals. Each item which is checked as 'yes' is awarded 1 score. The score of every individual would be the total number of items checked positively and

no statement is to be left out by the subjects (See Appendix for instructions and the nature of the test).

4.4.5
Risk-taking Behaviour

Risk taking behaviour was included in the present study but, later on, it was observed that good tool was available for the group administration. The risk-taking tasks by Dr. McClelland have been developed but they are to be administered individually to measure the risk of failure and to judge the level of aspiration. Having reviewed the related literature, it was found by McClelland in his ring-toss task that the subjects with high n-Ach. might be more influenced by the actual success that they were having and might tend to gravitate toward a central tendency of the successful throws, i.e., higher the subject's n-Ach. score, the closer he tended to approximate in his risk-taking behaviour of the central tendency of the successful throws. Similarly, n-Ach. scores reflect the intelligence of the child. The more intelligent the person is, the more likely he is to take moderate or sensible risks in the setting tasks for himself (McClelland Risk Taking children with high and low need for achievement pp. 316-317). It can be concluded that individuals with high n-Ach. tended to take moderate risks while subjects with low n-Ach. prefer significantly more often either very safe or very speculative enterprises.

In the light of the above discussion, the present investigator wanted to interpret the risk taking behaviour of the teacher trainees in relation to n-Ach., personal preferences, perception, anxiety, intelligence and the academic performance. It is to mention specifically that these dimensions - risk-taking behaviour as such has not been measured directly but would be given interpretations based on the studies of Dr. McClelland and Birneu, Robert C where ever felt necessary. This is made possible due to lack of group test of risk-taking behaviour and that too was inapplicable in the Indian conditions. However, attempt on the part of the investigator should be treated as a maiden one and what ever the interpretations would be possible, should be treated as based on the different variables under study.

4.4.6
Intelligence Test

To measure the intelligence level of the teacher trainees, it was felt essential that the intelligence test should be so chosen as may be free from cultural effects. So, various types of intelligence tests - Indian and foreign, group and individual, verbal and non-verbal were consulted. The performance test of intelligence being the individual test in nature, could not be considered for general use. Therefore, among the group tests, the choice was again to be made between verbal and non-verbal tests. The investigator, to be

on safe sides, decidesto make choice from among those tests, which have been used widely in India, such as Dr. S.Jalota's Test of Intelligence and Dr. Prayag, Mehta's Test of Intelligence, Raven's Progressive Matrices and Dr. Nafde's Test of non-verbal test of intelligence. The final selection fell in favour of Raven's standard Progressive Matrices. This test is a good measure of abstracts reasoning and spatial ability and gives a good prediction evidence for intellectual standard. It has been claimed that the test is a language, education and culture free test. It consists of 60 well drawn matrices of patterns divided into five sets (A, B, C, D, E) of 12 problems each. The problems in each set have been arranged progressively increasing order of difficulty. The time limit for the test is 20 minutes. Item No. 1 of the set 'A' is explained and used as a practice item.

Standard Progressive Matrices has been widely used in this country and has been adopted by Manovigyan Shala, U.P. for the classes VIII, X and XII, 586 boys of class X, and 432 boys of class XII. The validity co-efficient and the criterion used: Correlation with Pidgeon .60, with 70/23 .53; with F.R. .44; with space .49, with VIT .49; with BPAT (2)-.44. All correlations based on a sample of 412.

From the above paragraph it is observed that the test has been validated against the standard test and its applicability on the Indian population. However, Raven's Progressive Standard Matrices, sets A, B, C, D, E in origional were used for the present study.

It is a test of person's capacity at the time of the test to apprehend meaningful figure presented for his observation, see the relations between them, conceive the true nature of the figure completing each system of relations presented and doing so, developed a systemetic method of reasoning. It claims to provide a measure of person's capacity to form comprehension reason by analogy and develop a logical method of thinking regardless of previously acquired information. It is a test of general intelligence and a test of observation and clear thinking.

Ken and John worked out the correlation of this test with selected measures of IQ as mentioned below:

TEST	N	r
WAIS Total	131	.85
WAIS Verbal	131	.84
WAIS Performance	131	.75
Otis Gama	97	.70
Quick Test	71	.60
Revised Beta	58	.38

From the above data also, it is observed that Raven's Standard Progressive Matrices provides a good score for judging person's abstract reasoning through meaningless figures by way of observation and thus by answering these questions, he develops a systematic method of reasoning. Thus a person's total score provides

anindex of his intellectual capacity whatever his maturity or education may be. It is a perceptual test of Intelligence and the themes of test are:

1. Continuous patterns,
2. Figure Analogies,
3. Progressive Attention of the patterns,
4. Permutation of the figures,
5. Resolution of the figures into constituent parts.

6.1
Directions for Administration

The subjects are provided test booklets and separate answer sheets to write the answers. They are to complete the preliminary enquiries and according to set instructions its administration is done. The first problem is as evident as possible and serves as a model exercise to comprehend the procedure of taking the test. Thus the subject goes on doing the test by observing the patterns of the figures. The maximum time taken by Indian subjects is 35 minutes.

6.2
Scoring of the Test

A set scoring key is provided to judge the items as right or wrong. Thus, a person's score on the scale is his total number of problems, he solves correctly, when he is allowed to work quietly through the series from the beginning to end. As such percentile or Z-scores can be computed as per requirements of the sample drawn for the research purpose.

Orissa majorly, being an Oriya speaking state, it was felt essential that the culture free test of intellegence should be used, so, Raven's standard Progressive Matrices could serve the purpose.

4.4.7.0
S.E.S. Scale - By Kuppuswamy, B.

Dr. Kuppuswamy, B's S.E.S. Scale was used by the present investigator for this study and the items of the scale were retained as they are. But the score point weightage was avoided because in the present circumstances, the salary slabs have changed. Therefore, the composite SES Scores to be calculated on the old procedure have become out-dated. Therefore, it was thought proper to analyse the SES level of the parents of the teacher trainees on the basis of three different components such as education, occupation and monthly income. The categories under these components were retained as they are (see appendix). The results of enquiry, regarding the three components, were analysed on the basis of three clear cut divisions as high, average, and low, in the independent variable sides and relationship was worked out as they are. Therefore, the S.E.S. Scheme, thus, envisaged could provide a fund of knowledge regarding the general background of the teacher trainees.

7.1
The Nature of the Family

It was thought proper to find some of the

correlates related with the general background of the teacher trainees which has got a significant bearing on the achievement motivation, personality needs, perceptions, anxiety, intelligence and risk-taking behaviour. Therefore, the Self Report Card for teachers was developed by the investigator to collect the information from the teacher trainees as regards to their biographical qualifications, basic degree held etc. by the respondents. In the same card the section 'B' was devoted to assess the nature of the family to probe deep into the family line and occupational set-up under taken by their parents. Therefore, the items have been arranged as under and they have been defined accordingly:

4.4.8.0
Self Report Card for Teacher Trainees

Part 'A' i) Personal Data

ii) SES

a) Parents' educational level

b) Parents' occupation

c) Economic status

d) Parents income from all sources

Part 'B' You and your family

a) Nature of the family.

The above self report card constitues a part 'A' and part 'B' and the different definitions involved regarding the terms used in Self Report Card of Teachers are given as under:

1. Age: Age of the Subjects in years

2. Degree held: Subjects were degree holders. They were either graduates or post graduates in any one of the disciplines such as Arts, Commerce, Science and Agriculture. The degree held means the highest general educational qualification, the subject was in possession of.

3. Rank/Division Secured: The class, the subject was awarded on his graduation or post graduation classes, were given according to the aggregate of marks secured. If a student gets 60% or more, he will be awarded first class. If the aggregate marks are between 50 to 59%, he will be awarded II Class and if marks are between 35 to 49% then he is holding a III rank.

4. Teaching Experience: Experience is defined as a number of years of service as teacher put in by the subject before joining the B.Ed. course. Because some of the teacher trainees have already served as a teacher in different schools. So naturally, experience has got a meaningful efforts on their personality make-up, academic motivation and the anxiety state which directly or indirectly accelerates or retards their motives to achieve better / poor in the examination. Therefore, this dimension has been included in the Self Report Card.

5. Residence: Residence is defined as rural or urban.

Orissa is a backward state in which five districts belong to lower people, rest of the districts are either backward or inhabited by tribal people. So, it was essential to find out the residential background of the teacher trainees. The subjects from the rural areas were bracketed as 'Rural' and those who come from towns and cities were labelled as 'urban'. The choice and option was purely from the respondent sides.

6. Parent's Educational Level: The educational level of the father was defined as the general education he possessed. This variable was divided into six levels as per direction given in the Kuppuswamy's scale. The mothers' education has also been considered. However, the data gathered regarding mother's education could not be computed ~~decided~~ but for 'analysis' sake it would be given a mention.

7. Parents' occupation: Occupation of the father is defined as the actual work in which parent is engaged. The jobs mentioned are labour and unskilled, farmer with land, clerical etc. teacher/lecturer or head master, gazetted officer and other categories, i.e., these occupations are divided into 6 general hierarchical levels.

8. Economic Status: As the modern society is stratified on the basis of the classes represented by the people. So, it was thought proper to invite the opinion of the teacher trainees as regards to the general class, they came from. The economic status has been divided into four levels such as lower class, middle class, upper middle class and the upper class.

9. Parents' Income from all Sources: Monthly income: This column is related with the information regarding the parents' income per month from all sources to assess the income dimension in SES, it was essential that the data should be analysed as high, average, low according to the areas of the teacher trainees.

Section 'B'

4.4.9.0
You and Your Family

The aim of the study was to ascertain the opinions of the respondents through their responses to specific questions and to judge from the extent of their 'modernity' or 'traditionality' in attitudes. It was not possible to undertake a comprehensive study of all the correlates/ known components of this traditional modern complex because the family as a social unit has got a considerable influence on the personality of the children who, later on, occupy a major place in the society and teachers as a selected

community are to bear upon a special responsibility to guide the fellow beings. This all depends on their social values. Therefore, it was essential that the personal preferences, self-perception, anxiety and SES etc., should be studied along with their intelligence, performance and general SES. Therefore, this section has got a good importance as regards to the assessment of the general background of teacher trainees of Orissa. Responses when analysed, would reflect or identify the modern-liberal attitude and the other traditional outlook. Hence, the dimensions are defined as under:

9. 1. Joint/Nuclear Family

The Family: According to Burgess and Locke - "A family is a group of persons united by the ties of marriage, blood or adoption, constituting a single household, interacting and inter-communiciting with each other in their respective social role of husband and wife, mother and father, son and daughter, brother and sister, creating and maintaining a common culture."

Looking to the above definition it is evident that family constitutes of father-mother, son-daughter and some of the spouses. The idea is related to the concept of nuclear family. Murdock also defines the family, ".....a social group characterized by common residence, economic co-operation and reproduction. It includes adults of both sexes, at least two of whom maintain a socially approved sexual

relationship and one or more children, own or adopted, of the sexually co-habiting adults (Murdock, 1949, p. 1)"

Murdock defines the nuclear family as: "A married man and woman with their offspring, although in individual cases one or more additional person may reside with them."

On the basis of his investigation, he considers the nuclear family to be universal human social grouping. In fact, he sees the nuclear family as a basic unit from which other types of family, i.e., extended or joint are compounded. Nuclear means single family.

Based on these ideas, the concept of Joint/Nuclear Family has been considered for this study and the opinions of the teacher trainees were invited likewise.

9.2
Agriculturist/Non-agriculturist

i) If the respondent's parents are engaged in cultivation of land and they have got the inherited property, then, they are said to be belonging to the agriculturist class.

ii) If the respondent's parents are engaged in occupation other than the agriculture or farm cultivation, then, they are termed to be belonging to the non-agriculturist class, i.e., they go to earn their livelihood elsewhere and feel to engage themselves in occupations such as labourers, semi-skilled, supervisory and managerial and professional etc.

TABLE 5.88

Showing Ms., S.Ds. and significance of difference of means on 15 E.P.P.S. Dimensions in relation to religion/liberal outlook of teacher trainees N 608
(Independent variable Religious/Liberal (RL) with dependent E.P.P.S.)

		Ach.	Aff.	Nur.	Def.	nt	Chg.	Ord.	Suc.	End.	Exh.	Dom.	Hct.	Aut.	Aba.	Agg.
RL 1	Mean	14.015	13.965	15.553	14.861	14.603	15.241	14.918	13.151	14.603	13.233	14.032	11.653	13.007	14.025	13.221
N = 403	S.D.	3.141	3.470	3.594	3.196	3.297	3.580	3.706	3.582	3.465	3.190	3.951	5.284	3.382	3.235	3.385
RL 2	Mean	14.265	14.284	15.485	14.451	14.951	15.147	14.662	12.951	14.485	12.838	13.985	11.561	13.113	14.515	13.240
N = 205	S.D.	3.354	3.280	3.426	3.063	3.167	3.348	3.434	3.886	3.549	3.140	3.349	5.501	3.391	3.019	3.144
1 RL / 2 RL D.F. 605	t-values	0.905	1.090	0.224	1.514	1.245	0.311	0.825	0.633	0.392	1.449	0.145	0.182	0.362	0.453	0.068

9.3
Traditional and Illiterate

Traditional and illitrate are those persons having the views of the past and do not know reading, writing and arithmetic.

9.4
Modern and Literate

Modern and Literate are those who have got non-orthodox ideas and are literate.

9.5
Religious/Liberal in Religion

The persons who believe in religious values and practise the religion rigidly, they are said to be religious minded persons. And the persons who practice variations in the orthodox ideas to suit to the present needs of theirs and still believe in religion, are said to be liberal in religion.

The above dimensions call forth a major back drop, if assessed properly of the teacher trainees' socio-economic background which is concerned with their personality make-up and emerging needs. The investigator is of the opinion that these dimensions might have a good relationship with n-Ach. personal preference, self-perception, and anxiety, which are majorly concerned with their phenomenological world. Therefore, it was imperative and essential to assess the personality make-up of the teacher trainees.

The self report cards for teacher trainees have provided an ample data regarding the background of the teachers which can be profitably utilized to assess the

psychological dimensions under study, so that the interpretation may be provided on realistic basis. The investigator feels to observe the same in the next coming pages.

4.5.0 Data gathering Procedure

5.1 Administration of the Tools

In connection with the administration of the psychological tests and questionnaires the prior permission was secured from all the 6 principals of colleges of education for the administration of the research tools. The investigator could administer psychological tests himself on the teacher trainees and the necessary help from other teacher educators was sought. The subjects were not given any cue regarding the tests they were about to take. Since there were 120-160 candidates in all in each and every college of education, therefore, it was thought proper that they should be divided into smaller units for easy administration of psychological test on them.

The investigator after visiting a particular institution, could manage the seating and light arrangements so that the subjects might take the test comfortably. When the subjects were assembled in two seperate groups of convenient size, as planned earlier, the investigator and his helper addressed the students as regards to general instructions of the psychological test. The following narration was given in general for taking the various tests.

"Each of you will be given a booklet containing a set of pictures, general questionnaires and separate answer sheets for various psychological tests." They were instructed not to open booklet until they were asked to do so at various sittings. "You are to read the instructions given on the test booklet-covers along with the test administrator when he reads the instructions aloud. You are to fill up the needed enquiries printed on the cover page of the answer sheet such as name, age, institution, data of administration etc. on the spaces provided on the cover page of the answer sheet." After they went through with their reading, their querries if any were answered.

In this order, all the psychological tests with appropriate pauses in between them were given and therefore, the data was collected accordingly. The tests were administered with a due care so that the fatigue factor may be avoided. In this way n-Ach., personal preferences, self-perceptions, anxiety, intelligence tests, self report card for teachers were administered in two sessions - morning and evening, lasting for two and half an hours each. The investigator writes with confidence that the teacher trainees of different colleges of education located at Bhubneshwar, Cuttack, Berhampur, Balangir, Angul and

Sambalpur co-operated nicely and showed their best participation with due interest and care. The teacher educatior/fellow members also took a keen interest as regards the maintenance and care of the surroundings so that the tests may be conducted peacefully. At the end of the work, the investigator thanked the students and the staff for the co-operation in getting the research tools administered. The data collection from each college of education was completed in a single day. Therefore, all the six colleges of education were covered by the investigator himself by touring these far-flung places of Orissa. It is to mention that the investigator did not know the local language anddialect-Oriya, but still he could manage the administration of psychological tests effectively with due care and ease.

5.2 Scoring Procedure

After collecting the answer sheets/protocols from the students of education (N = 608) who belonged to six teachers training colleges of Orissa, these protocols were arranged serially and assigned a proper code on the different psychological test answer-sheets for an individual and similarly for each and every individual who participated in the testing programme. The lists of names were prepared for tabulation of the raw-score pertaining to various tests and questionnaires. The self scoring keys were used and the raw scores for each test were obtained and posted against

the names of each and every candidate. The scoring procedure for EPPS posed a difficulty which was overcome by devising suitable method and thus individual's scores on 15 dimensions of EPPS were calculated and similarly, the same procedure was followed by using different keys for different psychological tests. Therefore, raw scores of n-Ach. (12 categories), then, E.P.P.S. (15 dimensions), self-perceptions (8 dimensions and total scores) anxiety scores (for 'yes' items), intelligence scores (according to the key) and other information from self report card for teachers (part 'A' and 'B') and annual examination marks (theory, practice and the total aggregate of marks) were collected for this needed study. So that fruitful results and conclusions may be derived after proper analysis of the data so that the genuine interpretations on the various dimensions and the combination worked out, may be provided for necessary results.

5.3
Grouping of subjects in the Sample into different levels

Taking the title of the study into consideration, it is implied that the intelligence, SES, performance and some other correlates - sex, teaching experience, economic status, urban/rural, traditional/modern, religious/liberal and motivation from the independent variables and are to be studied in relation to achievement motivation scores, personal preferences (15 dimensions) perceptions (8 dimensions + total), anxiety, risk-taking behaviour (to be interpreted

on the basis of n-Ach. and intelligence scores and performance at the B.Ed. annual examination of the positive secondary school teachers. Therefore, differences in n-Ach., personal preferences, perception, anxiety and risk-taking behaviour were studied at two levels of sex (boys and girls), three levels of intelligence (high, average and low), three components of SES:

1) Qualification (College/post graduate/primary/high school and illiterate, primary and upper)
2) Occupation - (Gazetted officer and others, clerical/teacher/headmaster and labourer/farmer with land) and
3) Monthly Income from all sources (High, average and low).

The academic performance course of each individual was converted into levels: high, average and low on the basis of the means and S.D.s for each and every college, and further converted into $\bar{O}$ scores. The levels were considered as under:

Levels	$\bar{O}$ Scores
High	$M + 1\bar{O}$
Average	M
Low	$M - 1\bar{O}$

Similarly, the monthly income and intelligence scores were converted into three levels on the basis of the procedure followed for performance scores, teaching experience(10 years

and above, 4-9 years, 3 years and nil), economic status (upper middle and upper class, middle class and lower class), nature of the family: urban/rural, traditional/ modern, religious/liberal and n-Ach. level (high, average and low). The number of subjects in the two levels of sex were already fixed in the samples.

The divisions of the samples as regards to independent variables under study were calculated on the basis of σ score concept,i.e., if it is M + 1 σ and above, then, it is high; if it is M - 1 σ and below then it is low. And if in between the two is termed as average.

As is obvious from the above discription that the independent variables were subjected to different categories/ levels as high, average and low and in some other variables in the twin categories such as urban/rural, it was made possible only to work out the further statistics such as S.E.M.s, t-test, correlational matrices and Pregression analysis related with all the variables on the dependent side. Some of the dimensions: EPPS, perception, intelligence, anxiety, performance, motivation provided two digit scores while performance and total score on self-perceptions carried three digit scores and were subjected to statistical analysis, with the help of computer designs, to work out the above quoted statistics for meaningful results.

Before the data was systematized, the different variables were subjected to levels- high, average, low and

were codified as 1, 2 and 3 in the detailed analysis sheet. And these codes were worked out for each and every college independently and by calculating the Mean, S.D. and the Z-scores which were later on converted into three letter and digit grade (H±1, A = 2, and L= 3).

5.4

Standard scores (Z-scores)

A standard score or Z-score is defined as the deviation of a score from the arithmetic mean in standard deviation units.

The formula for Z-score is: $Z = \frac{X - M}{\sigma}$

where, z = Standard Score

X = Any raw score

M = Arithmetic mean of raw scores

σ = Standard deviation of raw scores

All raw scores below the arithmetic mean will, thus, become negative Z-scores. The arithmetic mean will equal the Z-score of zero. A score of one σ above or below the M will equal in Z-score of +1 respectively. In Z-scores the σ becomes the unit distance of a frequency distribution whose mean is equal to zero.

5.5

Assigning the Letter Grades

The Z-scores calculated by the above formula are transformed into letter grades so that the easy interpretations may be given for the higher statistics calculation viz: SEMS, t-test and regression equations. The scale value

involved or in terms of Z units beginning with the high ($M + 1\sigma$), low ($M - 1\sigma$) and the average letter grade pertains to the score in between these two ranges-high and low. The above transformation to letter grades or digits grades 1, 2, 3, have been used at various places to interpret the data for easy grasp of processes involved and interpretations were affected accordingly.

4.6.0
System of the Data Analysis

Due to the paucity of time and resources available with the investigator, it was thought proper that some details such as stay: Home/Hostel, division, mother's education, joint and nuclear family, agriculturist/non-agriculturist, marital status etc. dimensions from the self report card for teacher trainees, have been analysed for giving simply the background of teacher trainees as such but their relationships with the rest of variables have not been worked out, i.e., they have not been subjected to higher statistical effects. However, the needed statistics - percentages, rank orders, means and S.D., wherever necessary, have been worked out. Similarly, the detailed categories of n-Ach. test, i.e., 12 dimensions of achievement motivation test, have been sorted out to provide the details about A1, T1, U1 stories. So that the comparable standards as regards to achievement motivation effects may be gazed at a glance for different samples (six colleges) under the present study.

For the total and sub-categories scores, on all the tests means, SDs and significance of difference of means were calculated when the levels for different independent variables were treated as different groups for the purpose of comparisons.

Step-wise Regression analysis was utilized for all the 35 dependent and 12 independent variables and their relationship etc. to determine which of these variables would best predict the criterion of academic performance, SES, and intelligence and some of the correlates in interaction with each other and which unique group or combination of predictor variables would optimally explain the maximum amount of criterion variation. All statistics were examined for significance at the .05 level of confidence.

4.7.0
Coverage

1. The enquiry covered all the 6 teachers training colleges of Orissa. Teacher trainees under survey were drawn randomly for the present study sample.
2. In all the colleges, the investigator himself conducted the study and gave the necessary directions to teacher trainees for filling up the answer sheets and the questionnaires.

The number of students involved in the present study is 608, out of which 429 are boys and the rest are girls. The names and identification data pertaining to different colleges

and students of education have been kept confidential and are given under separate code numbers so that genuine secrecy may be maintained. Moreover, the nature of the study compelled the investigator to restrict the interpretations only on the basis of the data collected through different tests and questionnaires.

4.8.0
Responsibility and Directions

As mentioned above, the assistance of large number of teacher trainee and heads of the colleges of education were obtained and students' reactions sought on various types of psychological tests and questionnaires under study and the same recorded with their help and co-operation and carrying their survey. The data was collected in December, 1976 and early 1977.

4.9.0
Analysis and Interpretation of the Data

The data collected through the structured questionnaire have been properly codified, tabulated, analysed and compiled under different categories to give a vivid and clear picture which bore specific headings as per planning of the investigator. The interpretations have been given purely and strictly on the basis of the data available from present inquiry to give the fruitful results as is evident from the following pages.