CHAPTER VI

CONSTRUCTION OF ATTITUDE SCALE

C H A P T E R - VI

CONSTRUCTION OF ATTITUDE SCALE

In the previous chapter, the importance of the various aspects of education included in the Attitude Scale (Preliminary) for the present study was discussed. It is now proposed to construct the Attitude Scale towards education.

To be able to understand how attitudes can be measured, it is considered desirable to examine the concept of attitude.

ENGLISH (1958)[1] et.al. in their Dictionary define attitude as: "Attitude is an enduring learned pre-disposition to behave in a consistent manner toward an object or class of objects."

Like many psychological variables, B.F. GREEN (1959)[2] says,

> "Attitude is a hypothetical or latent variable, rather than an immediately observable variable."

To describe the consistency or so called or co-variation of a number of different response to stimuli of the same general class, a latent variable is used. Many

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1. English H.B. and English A.C.(1958) "A Comparative Dictionary of Psychological and Psycho-analytic terms" Longman's Green Cop.New York.

definitions of social attitudes have been proposed which suggest the manner in which attitude may be viewed.

KRECH and CRUTCHFIELD (1948)[3] view attitude as:

"an enduring organisation of motivational, emotional, perceptual and cognetive process with respect to some aspect of the individual's world."

ALLPORT (1935)[4] after reviewing many early definitions of attitude concludes that--

"an attitude is a mentaland neutral state of readiness exerting a directive influence upon the individual's response to all objects and situations with which it is related."

In the encyclopaedia of Modern Education (1943)[5]--

"Attitude is used to describe an emotional reaction, either favourable towards some object or class of objects, material or conceptual in nature."

THURSTONE (1945)[6] defines an attitude as:

"a generalised reaction for or against a specific psychological object."

Following THURSTONE, EDWARDS A.L. (1946)[7] defines an attitude as:

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2. Bert F. Green (1959) "Attitude Measurement" Ch.9 in the "Hand Book of Social Psychology" Vol.I, Gardener Lindsay ed. (Messachesetts, U.S.A. Addision-Wesley Publishing Co. Inc. 1959) P.335.

"the degree of positive or negative affect associated with some psychological object."

GUILFORD (1954)[8] defines as:

"a general disposition common to inviduals, but possessed to different degrees, which impels them to react to objects, situations or predispositions in ways that can be called favourable or unfavourable."

NUNNALLY (1959)[9] defines as:

"Attitudes are predispositions to react negatively or positively in some degree toward an object, institution, or class of persons."

ANNE ANASTHASI (1961)[10] defines an attitude as:

"a tendency to react favourably or unfavourably or unfavourably toward a designated class of stimuli, such as a national or racial group, a custom or an institution."

On a psychological scale, attitude occupies a location between 'concept' and 'trait'. 'Concept' and 'trait' are more concerned with self and not dynamic like attitude. In all the above definitions attitudes are referred to experiences and as such all attitudes are aquired. They differ as customs differ, and change as the age changes.

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3. D.Krech and R.J. Crutchfield (1948) "Theory and Problems of Social Psychology" Mc. Graw Hill, New York.

4. G.W.Allport (1935) "Attitudes" in "A Hand Book of Social Psychology" C.Murchson Ed. Worcester Clark University Press 798.

The individuals become more consistent as they
mature in respect of their attitudes. An extremely
significant aspect of attitude is the sterio-type a group
accepted image or idea, usually verbalised and changed
with emotion.

The best procedure to know how the individuals
feel about a particular object, is to ask him and know
direct from him. But the disadvantage of this method of
direct questioning is the reluctance of many
individualsto give public expression to their feelings or
attitudes on controversial issues. Another approach to
the investigation of attitudes has been to observe the
behaviour of individuals with respect to a psychological
object. But when a research worker is interested in the
attitudes of a large number of individuals toward some
object, he may not have the opportunity to observe in
detail the behaviour of all the interested pupils.

The attitudes can be measured by means of attitude
scales. These attitude scales represent a bipolar
contina and hence are designed to provide a quantitative
measure of the indivuals relative position.

5. Harry N. Rivlin (ed) (1943) "Encyclopedia of Modern
   Education" The Psychological Library, New York City.

6. Thurstone and Chave (1945) "The measurement of Atti-
   tudes" Chicago, University of Chicago Press.

7. Allen L.Edwards (1946) "Techniques of Attitude Scale
   Construction", New York, Appleton Century--Grofts
   Inc. 1957, P. 2.

Six Techniques of attitude scale construction are there: viz., the method of summated rating due to Likert, scalogram due to Guttaman, the judgement method due to Thurstone, the unfolding technique, latent structure analysis, and rating methods; of which according to GUILFORD (1954)[11] the three major techniques of attitude scale construction are attributed to Thurstone, Likert and Guttaman.

The Thurstone method of scale construction is the judgement method. According to his scaling procedure first, the various subjects are asked to write down spontaneously what they themselves think about the various aspects of the psychological object under consideration. After editing the statements, they are given to a large number of judges for sorting into 11 piles ranging from the 'most unfavourable' through 'nuetral' to 'most favourable' positions on the scale continuum. The judges judge the intensity of each statement while giving their attitudes. In this method, TERGENSON (1963)[12] says:

> "judges are treated as replications and the stimuli alone receive scale values."

8. J.P. Guilford (1954) "PSYCHOMETRIC METHODS" New York: Mc. Graw Hill Book Company, P. 456.

9. Jum C. NUNNALLY (1959) "JUNIOR TESTS AND MEASUREMENTS" New York: Mc. Graw-Hill Book Company, Inc. 1959. P.300

10.ANNE ANASTHASI (1961) "PSYCHOLOGICAL TESTING" New York: The Macmillan Company. P.541.

By computing the medians the scale values for the opinions are accomplished. For each item, the semi-inter quartile range serves as an index of dispersion. Items with large Q values will be omitted and approximately 25 items evenly spaced on the continum will be selected. After random arrangement of the statements the subjects will be asked to indicate the items they accept. The scores will be based upon the arithmetic mean or median of the scale values of the items agreed.

The Likert Method is the summated method of scale construction. In this, a large number of statements regarding the psychological object under consideration will be taken, arranged in a random order. The subjects will be asked to respond to each item in terms of their own agreement or disagreement. The responses will be of multiple choice type, with five responses 'strongly agree', 'agree', 'undecided', 'disagree', or 'strongly' disagree', or of the type 'yes', '?', 'no'.

LIKERT (1932)[13] proposed a simple method of getting the scores of each subject. For positive statements, the 'strongly agree' response will be given a weight of 4, the 'agree' response a weight of 3, the 'undecided' response a weight of 2, the 'disagree' response a weight of 1, and the 'strongly disagree'

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11. Ibid. 12. W.S.Torgenson, "Theory and Methods of Scalling" New York: John Wiley and Sons Inc. 1963.

response a weight of O. And for the negative statements the scoring system will be reversed. The total score will be summating his scores for the individual items.

To eliminate or reject certain statements, some form of item analysis will be carried on. The highly significant items will form the items of the final attitude scale. The subjects will respond in one of the categories "strongly agree", (S.A), "agree" (A), "undecided (U), "disagree (D) or "strongly disagree (S.D) The scores will be summed for each individual, considering the positive and negative statements as said above.

GUTTAMAN'S method of scale analysis has been subjected to much legitimate criticism. However, it is not taken up.

Comparing the Likert and Thurstone techniques of scale construction, NUNNALLY (1959)[14] says:

> "the Likert approach is more emperical because it deals with respondents rather than employing judges. The Likert Method more directly determine whether or not only one attitude is involved in the original collection of items, and the scale which is derived, measures the most general factor which is present."

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13. R. Likert and G. Murphy, "Public Opinion and the Individual in Techniques of attitude scale constru- ction", A.L. Edwards Ed. New York: Apleton-Century, Crofts, Inc. 1957. p.151.

14. Nunnally : Op.cit. p.305.

15. R.Likert, "A TECHNIQUE OF SCALE CONSTRUCTION IN TECHNIQUE OF SCALE CONSTRUCTION" A.L. Edwards ed. (New York: Appleton Century, Crofts.INC.1957, p.169

16. Edwards A.L. loc. cit.

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LIKERT (1932)[15] claimed that the method of summated ratings is simpler and easier to apply in the development of an attitude scale than is the method of equal appearing intervals. HALL (1934) LINDQUIST and STETTO (1936) express the view that this method is compa- ratively less laborious then Thurstone method.

In their comparative study of the Thurstone and Likert's estimate Edwards and Kennedy (1946)[16] said that the time required to construct an appearing interval scale is approximately twice that required by the method of summated ratings. Likert type scales with even fewer statements will give high reliability coefficients according to HALL (1934).

KERLINGER F.N. (1959)[17] and GENE. R. MEDINNUS (1962)[18] constructed their attitude scales using the Likert-technique to investigate the attitudes towards education.

Giving a due consideration to the above factors, the investigator proposed to study the attitudes of the said pupils and parents of Scheduled Tribes and Caste towards education by adopting the Likert's technique in the construction of the attitude scale.

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17. Kerlinger F.N. (1959) "The Construction and Factor Analytic validation of scales to measure attitudes toward education" EDUCATIONAL PSYCHOLOGICAL MEASURE- MENT, Vol. IXX, No.1, Spring 1959, p. 13.

The investigator visited the various Secondary schools, Social Welfare Hostels for Scheduled Tribes and castes situated in Guntur District of Andhra Pradesh and gathered unstructured statements from 400 pupils and 100 teachers and parents of the Scheduled Castes and Tribes, expressing their 'feeling' towards 'Education.'

The statements given by them were pooled along with the statements collected from journals, books and through personal interviews with certain parents and teachers.

While sorting and editing, precautions were taken to the extent that the statements should refer to the present rather than the past, the language should be simple with clarity and brevity, they should cover the entire range of the scale under interest and irrelevent to the psychological object under consideration.

KERLINGER F.N. (1961)[19] revised his Q methodological studies to assess the effects on factor structure of different samples and different measurement instruments. In this study, he employed the Likert technique and a 7 point attitude scale was constructed for which responses were of the type M.S.D. (Most strongly disagree S.D. (Strongly disagree, D. (Disagree, U. (Undecided, A.

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18. GENE. B. MEDINNUS (1962) "The Development of a Parent Attitude toward Education scale."

(Agree), S.A. (Strongly agree), M.S.A. (Most strongly/ agree). In our investigation Likert's five point scale: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA), Strongly Disagree (SDA); was adopted.

T A B L E   No.1

DISTRIBUTION OF ITEMS IN THE ATTITUDE SCALE

S.No.	A r e a	Number of items in the scale (preliminary)
1.	Attitudes related to the meaning of education.	8
2.	Attitudes related to instructional and learning aspect of education.	16
3.	Attitudes related to the content of education.	6
4.	Attitudes related to the utiliterian aspect of education.	21
5.	Attitudes related to cultural and social aspect of education.	21
6.	Attitudes related to evaluation and administrative aspect of education.	12
7.	Attitudes related to the general aspects of education. (Co-education, sex-education, women education, adult education population education and moral/religious education)	16
	TOTAL ::	100

19. Keringer F.N. (1961) "Factor Invariance in the Measurement of Attitudes toward Education", EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT, Vol.XXI, No.2, pp.273-285.

"A COMPARATIVE STUDY OF THE ATTITUDES OF THE PUPILS AND PARENTS OF THE SCHEDULED CASTES AND SCHEDULED TRIBES OF GUNTUR DISTRICT OF ANDHRA PRADESH, TOWARDS EDUCATION.

(NO. IN THE BRACKET IS THE NO. IN THE ATTITUDE SCALE PRELIMINARY)

I. ATTITUDES RELATED TO THE MEANING OF EDUCATION.

1. (1) KNOWLEDGE IN 3 R'S IS EDUCATION.
2. (10) PHYSICAL, MENTAL AND SPIRITUAL DEVELOPMENT IS EDUCATION.
3. (26) EDUCATION IS ADJUSTMENT TO THE ENVIRONMENT.
4. (35) TO DRAW OUT THE INNATE CAPABILITIES OF THE INDIVIDUAL IS EDUCATION.
5. (50) EDUCATION IS IMPARTING KNOWLEDGE BY THE MATURED TO THE IMMATURED.
6. (65) EDUCATION IS THE ALL ROUND DEVEOPMENT OF THE INDIVIDUAL.
7. (79) EDUCATION IS FOR FURTHERING THE GOALS OF SOCIALISM, SECULARISM, AND DEMOCARACY.
8. (90) THE CARDINAL PRINCIPLE OF EDUCATION IS THAT EDUCATION IS A UNIQUE INVESTMENT IN THE PRESENT AND THE FUTURE.

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II. ATTITUDES RELATED TO CONTENT OF EDUCATION.

1. (5) EDUCATION SHOULD HAVE A VOCATIONAL BIAS.
2. (33) EDUCATION SHOULD BE AGRICULTURALLY ORIENTED.
3. (11) EDUCATION SHOULD BE USED FOR POLITICAL ENDS.
4. (25) EDUCATION MUST FULFIL THE NEEDS OF THE COMMUNITY.
5. (66) EDUCATION IS UNRELATED TO LIFE.
6. (27) EDUCATION SHOULD DEVELOP SCIENTIFIC THINKING.

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III. ATTITUDES RELATED TO INSTRUCTIONAL AND LEARNING ASPECT

1. (12) INTEREST IN EDUCATION DEPENDS UPON TEACHING.
2. (36) TEACHER SHOULD BE FRIENDLY TOWARDS THE PUPILS.
3. (54) PUPILS MUST BE GIVEN SCOPE TO EXPRESS THEIR IDEAS.
4. (75) EXAMINATIONS TEST ONLY THE MEMORY POWER.
5. (67) TEACHING SHOULD ONLY AIM AT EXAMINATIONS.
6. (6) EDUCATION LEADS TO INSANITY.
7. (97) BETTER LEARN SOMETHING OF EVERYTHING, THAN EVERYTHING OF SOMETHING.
8. (21) MUCH WISDOM IS MUCH GRIEF.
9. (34) CONTINUOUS TEACHING LEADS TO CONTINUOUS LEARNING.
10. (40) SCHOOL LEAVING COMPLETES ONE'S EDUCATION.
11. (42) GOOD MENTAL SET UP IS ESSENTIAL FOR BETTER LEARNING.
12. (67) THE PUPILS LEARN BETTER UNDER THE THREAT OF CORPORAL PUNISHMENT.
13. (69) BETTER SALARIES RESULT IN BETTER LEARNING.
14. (70) REGULAR STUDY MAKES LEARNING EASY.
15. (76) COMPETETION IS THE BEST INCENTIVE FOR LEARNING.
16. (82) SUCCESS RATHER THAN FAILURE, SUSTAINS INTEREST IN EDUCATION.

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IV. ATTITUDES RELATED TO THE UTILITERIAN ASPECT.

1. (2) EDUCATION IS ONLY TO EARN MONEY.
2. (13) EDUCATION IS ONLY TO INCREASE THE UNEMPLOYMENT PROBLEM.
3. (18) ALL EDUCATION IS FOR BREAD ONLY.
4. (20) EDUCATION RESULTS IN WASTAGE OF MONEY.
5. (22) CULTURE DEVELOPS ALONG WITH EDUCATION.
6. (25) EDUCATION HELPS TO EXERCISE OUR FRANCHISE CORRECTLY.
7. (27) EDUCATION IS ONLY TO SECURE DEGREES.
8. (41) EDUCATION SHAPES THE INDIVIDUAL TO BE A GOOD CITIZEN OF THE COUNTRY.
9. (49) EDUCATION IS ONLY FOR THE ACQUISITION OF KNOWLEDGE.
10. (56) EDUCATION IS NOT DIMINISHED BY DONATING.
11. (81) EDUCATION DEVELOPS SELF-DISCIPLINE.
12. (83) EDUCATION DEVELOPS AESTHATIC APPRECIATION.
13. (84) EDUCATION HELPS IN SECURING GOOD LIFE-PARTNERS.
14. (85) OBEDIENCE IS THE OUTCOME OF EDUCATION.
15. (88) EDUCATION ERADICATES POVERTY.
16. (89) EDUCATION BRINGS BEAUTY AND SHAPE TO THE HUMAN BEING.
17. (92) EDUCATION DEVELOPS CREATIVE TALENTS.
18. (93) EDUCATION IS ONLY TO SECURE HIGHER JOBS.
19. (94) EDUCATION MOULDS ONE'S LIFE.
20. (98) EDUCATION GIVES TRAINING IN SOLVING PROBLEMS.
21. (99) BUSINESS AND TRADE ARE ILL-MANAGED WITHOUT EDUCATION.

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V. ATTITUDE RELATED TO CULTURAL AND SOCIAL ASPECTS OF EDUCATION.

1. (3) AN UNEDUCATED MAN IS AN UNRECOGNISED ANIMAL.
2. (7) MORE EDUCATION MEANS MORE EQUALITY.
3. (9) EDUCATION SHAPES ONE TO BE A WORTHY MEMBER OF THE FAMILY.
4. (14) NO EDUCATION CAN ROOT OUT THE WELL ESTABLISHED CASTE DISABILITIES.
5. (15) THE WORLD WILL COME TO A STAND STILL WITHOUT EDUCATION.
6. (19) NATIONAL INTEGRATION IS POSSIBLE ONLY THROUGH EDUCATION.
7. (28) EDUCATION IMPAIRS INDIAN CULTURAL HERITAGE.
8. (29) EDUCATION HELPS TO CAPUTRE POLITICL POWER.
9. (31) DIGNITY OF LABOUR IS LOST WITH EDUCATION.
10. (32) EDUCATED MAN CAN HAVE A CLEAR SELF EXPRESSION.
11. (38) AN EDUCATED MAN CAN'T WITHSTAND MANNUAL LABOUR.
12. (39) EDUCSATION HELPS TO GIVE UP EVIL CUSTOMS, TRADITIONS AND BLIND BELIF.
13. (43) THE SOCIAL STATUS OF S.C's & S.T's CAN RISE ONLY WITH EDUCATION.
14. (45) EDUCATION IS TREASURE HIDDEN.
15. (51) EDUCATION HAMPERS ANCIENT CIVILIZATION.
16. (52) PRIDE FOLLOWS EDUCATION.
17. (71) EDUCATION BRINGS ABOUT A DYNAMIC SOCIAL CHANGE.
18. (74) EDUCATION DEVELOPS SENSE OF BROTHERHOOD.
19. (78) EDUCATION KEEPS UP ONE'S OWN INDIVIDUALLITY.
20. (80) EDUCATION HELPS TO ELIMINATE EVIL HABITS LIKE DRINKING, GAMBLING ETC.
21. (100) EDUCATED MAN GETS GOOD RECOGNITION IN THE SOCIETY.

SOCIETY.

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VI. ATTITUDES RELATED TO EVALUATIONAL AND ADMINISTRATIONAL ASPEC

1. (4) EXAMINATIONS SHOULD BE ABOLISHED COMPLETELY.
2. (16) ONE CAN HAVE NO KNOWLEDGE IN THE NON-EXAMINATION SUBJECTS.
3. (23) EXAMINATIONS LEAD TO STRAIN AND DISHONESTY AMONG PUPILS.
4. (24) DEMOCRATIC SET UP OF ADMINISTRATION YEILDS NO GOOD RESULTS IN EDUCATION.
5. (30) EXAMINATIONS ARE A HINDRANCE TO THE EFFICIENCY OF TEACHING.
6. (37) LEARNING IS MORE EFFECTIVE IN THE ABSENCE OF EXAMINATIONS.
7. (44) EXAMINATION WITH BOOKS IS BETTER.
8. (58) BETTER INCENTIVES LEAD TO BETTER ACADEMIC ACHIEVEMENT.
9. (64) INTIMATING THE PUPILS PROGRESS TO THE PARENTS IS A WASTE.
10. (72) EXAMINATIONS ARE NECESSARY TO DISCRIMINATE THE PUPILS.
11. (73) EXAMINATIONS TEST ONLY THE MEMORY POWER.
12. (87) PARENTS SHOULD BE CONSULTED IN THE MAJOR SCHOOL PROBLEMS.

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VII. ATTITUDES RELATED TO THE GENERAL ASPECTS OF EDUCATION.

(CO-EDUCATION, SEX-EDUCATION, WOMEN EDUCATION, ADULT EDUCATIO POPULATION EDUCATION AND MORAL/RELIGIOUS EDUCATION)

1. (8) AN ILLITERATE IS A MENACE TO THE SOCIETY.
2. (17) EDUCATION WITHOUT SEX EDUCATION IS INCOMPLETE.
3. (46) EDUCATION ENVISAGES SPIRITUAL AWAKENING.
4. (47) CO-EDUCATION IS SIN.
5. (48) SEX EDUCATION IS A DISTRACTION TO THE PUPILS.
6. (55) EDUCATION DEVELOPS AWARENESS OF POPULATION GROWTH.
7. (57) HIGHER EDUCATION TO WOMEN IS UNDESIRABLE.
8. (59) CO-EDUCATION DEVELOPS COMPETETIVE SPIRIT AMONG PUPILS.
9. (60) AN EDUCATED MAN IS NOT EXPECTED TO LEARN EVERYTHING.
10. (61) EDUCATION DEVELOPS MORAL VALUES.
11. (62) EDUCATION IS MUST IN DEMOCRATIC COUNTRY.
12. (63) NATION'S PRESTIGE DEPENDS UPON THE NUMBER OF EDUCATED WOMEN.
13. (86) SEX SAGREGATTED SCHOOLS ERADICATE MUTUAL TEASING.
14. (91) WOMEN FROM GIRLS' SCHOOLS WILL HAVE A GOOD CHARACTER.
15. (95) WOMEN EDUCATED AT GIRLS' SCHOOLS ARE AFRAID OF MEN.
16. (96) CO-EDUCATION HELPS TO SELECT THE LIFE-PARTNERS RIGHT IN THE SCHOOLS.

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SELECTION OF SUBJECTS:

The subjects   selected for this study were the pupils (both boys and girls) of X, IX, VIII, VII and VI classes of Secondary Schools and their parents (both men and women, educated and uneducated) of Scheduled Castes and Scheduled Tribes of Guntur District of Andhra Pradesh to arrive at an attitude scale (differential). The printed questionaire contains all the 100 items jumbled at random, translated into the vernacular TELUGU language for easy understanding.

T A B L E   No.2
DISTRIBUTION OF THE SUBJECTS SCHEDULED TRIBE/CASTE-WISE

CATEGORY	PUPILS		PARENTS			
	BOYS	GIRLS	MEN		WOMEN	
			EDU	UN-EDU	EDU	UN-EDU
SCHEDULED TRIBES	160	80	42	63	38	62
SCHEDULED CASTES	166	150	100	69	15	15
TOTAL	326	230	142	132	53	117
			274		170	
	556		444			
GRAND TOTAL:			1000			

ADMINISTRATION AND COLLECTION OF DATA:

While administering the test all necessary precautions like giving sufficient time to think about each item and give their fair judgement for each item and seeing that the attitude of one subject is not transmitted to another subject and all items are answered. The test was administered in Guntur City, Tenali, Narsaraopet, Repalli, Bapatla, Nagarjuna Sagar (Vijayapuri South), Achampeta, Sattenapalli, Piduguralla, Tadikonda, Mangalagiri and Amaravathi of all the three divisions Guntur, Tenali and Narsaraopet Divisions, the details of which are given in Table No:2.

T A B L E   No:3

DISTRIBUTION OF THE SUBJECTS DIVISION-WISE IN THE DISTRICT

NAME OF THE DIVISION IN GUNTUR DIST	SCHEDULED TRIBE		SCHEDULED CASTE	
	PUPILS	PARENTS	PUPILS	PARENTS
GUNTUR DIVISION	105	60	120	90
TENALI DIVISION	75	50	110	85
NARASARAOPET DIVISION	60	50	110	85
TOTAL	240	160	340	260
TOTAL	400		600	
GRAND TOTAL	1000			

T A B L E   No:4

S C O R I N G   S C H E M E

ITEM	SA	A	U	DA	SDA
POSITIVE	5	4	3	2	1
NEGATIVE	1	2	3	4	5

ITEM ANALYSIS:

Using the above Scoring Key, Item Analysis was taken up. The total score for each individual subject was computed and then placed according to the RANK obtained, separately for pupils and parents. The 100 ranks with high score (10% of the total subjects) and the last 100 ranks with the low scores (10% of the total subjects) were separated for pupils and parents seperately.

Then as suggested by EDWARDS (1957) the first 100 with high scores were used for High Group and the last 100 were used for Low Group and the method suggested for finding out the discreminative power for each item of the test was calculated using the following formula.

Statements Nos: 2,6,13,18,24,27,28,34,38,47,48,51,52,57,
60,64,66,67,74 and 93 (total 20) are
treated as negative and the rest positive.

$$t = \frac{X_H - X_L}{S^2{}_H/n_H + S2_L/n_L}$$

where X_H = the mean score on a given statement for the high group.

X_L = the mean score on the same statement for the low group.

$S^2{}_H$ = the variance of the distribution of responses of the high group to the statement.

$S^2{}_L$ = the variance of the distribution of responses of the low group to the statement.

n_H = the number of subjects in the high group.

n_L = the number of subjects in the low group.

The 't' ratio as a measure of discriminating power were then presented in table No.5.

FINAL ATTITUDE SCALE AND ADMINISTRATION

20 Items (variables) were selected for the FINAL attitude scale which have high significant 't' values, covering all various aspects of education. This printed final Likert-type attitude scale was then administered over 100 pupils and 100 parents heterogeneously selected

"A Comparative study of the attitudes of the
pupils and parents of
Scheduled Tribes and Schduled Castes of
Guntur District of Andhra Pradesh, towards Education."

't' -- VALUES : PUPILS AND PARENTS.
('*' INDICATES THE ITEMS SELECTED FOR FINAL ATTITUTE SCALE).

Item No.	Pupils	Parents	Total	Rank	Item No.	Pupils	Parents	Total	Rank	Item No.	Pupils	Parents	Total	Rank
*1.	3.1	13.0	16.0	1	36	6.5	0.0	6.5	--	*71	8.3	5.0	13.0	11
2.	0.0	0.0	0.0	--	37	2.9	0.0	2.9	--	*72	8.5	-3.7	12.0	19
3.	3.1	4.3	7.0	--	38	0.0	0.0	0.0	--	73	4.9	3.9	9.0	26
4.	2.8	-3.4	-1.0	--	39	3.3	4.3	8.0	37	74	-2.8	0.0	-3.0	--
*5.	3.8	4.0	8.0	31	40	0.0	0.0	0.0	--	75	0.0	2.7	3.0	--
6.	0.0	3.7	4.0	--	*41	9.9	5.9	16.0	2	76	7.9	4.8	13.0	14
7.	0.0	8.6	9.0	22	42	8.8	0.0	9.0	23	*77	4.1	4.9	9.0	27
8.	3.0	0.0	3.0	--	43	3.7	3.6	7.0	--	*78	9.1	4.5	14.0	7
9.	3.9	8.5	12.0	16	44	0.0	2.9	3.0	--	79	4.2	4.1	8.0	42
10.	3.4	4.0	7.0	--	45	4.3	4.3	9.0	24	80	4.3	0.0	4.0	--
11.	3.1	4.1	7.0	--	46	4.6	3.9	8.0	38	81	8.4	5.0	13.0	15
12.	3.3	4.0	7.0	--	47	0.0	3.7	4.0	--	*82	9.9	4.1	14.0	6
13.	0.0	0.0	0.0	--	48	0.0	0.0	0.0	--	83	3.9	4.6	9.0	28
14.	3.1	4.0	7.0	--	49	3.8	3.9	8.0	39	84	3.8	0.0	4.0	--
15.	3.5	4.1	8.0	32	*50	8.0	4.1	12.0	17	85	4.2	4.4	9.0	29 a
16.	3.9	3.3	7.0	--	51	0.0	3.5	4.0	--	86	3.8	0.0	4.0	--
17.	3.4	0.0	3.0	--	52	2.9	0.0	3.0	--	87	3.8	4.0	8.0	43
18.	0.0	0.0	0.0	--	53	4.0	4.8	9.0	25	88	3.9	0.0	4.0	--
19.	3.8	0.0	4.0	--	*54	9.1	4.9	14.0	5	89	3.2	3.7	7.0	--
20.	0.0	0.0	0.0	--	*55	7.5	4.4	12.0	18	90	3.7	3.5	7.0	--
21.	0.0	0.0	0.0	--	56	3.7	4.3	8.0	40	91	3.9	0.0	4.0	--
22.	3.5	3.1	7.0	--	57	0.0	0.0	0.0	--	*92	8.0	4.6	13.0	12
23.	0.0	0.0	0.0	--	*58	9.4	4.1	14.0	4	93	0.0	0.0	0.0	--
24.	0.0	0.0	0.0	--	*59	8.6	4.0	13.0	9	*94	8.8	4.4	13.0	13
25.	4.0	3.8	8.0	33	60	0.0	0.0	0.0	--	95	3.6	0.0	4.0	⊥
*26.	4.1	9.3	13.0	8	*61	10.9	4.4	15.0	3	96	4.3	3.9	8.0	44
27.	0.0	0.0	0.0	--	62	3.9	3.8	7.0	--	97	3.0	6.7	10.0	21
28.	2.9	2.9	6.0	--	63	3.8	3.3	7.0	--	98	4.5	4.6	9.0	30
29.	4.1	3.3	7.0	--	64	0.0	0.0	0.0	--	99	4.4	3.6	8.0	45
30.	0.0	0.0	0.0	--	65	0.0	3.3	3.0	--	*100	8.1	4.2	12.0	20
31.	3.2	0.0	3.0	--	66	0.0	0.0	0.0	--					
32.	3.8	3.9	8.0	34	67	0.0	0.0	0.0	--					
33.	3.5	4.1	8.0	35	68	4.0	3.0	7.0	--			#########		
34.	0.0	0.0	0.0	--	69	3.8	3.7	7.0	41					
35.	3.5	4.3	8.0	36	*70	7.7	5.2	13.0	10					

"A COMPARATIVE STUDY OF THE ATTITUDES OF THE
PUPILS AND PARENTS OF
SCHEDULED TRIBES AND SCHDULED CASTES OF
GUNTUR DISTRICT OF ANDHRA PRADESH, TOWARDS EDUCATION."

ATTITUDE SCALE (FINAL)

(No. in the bracket is the No. in the Attitude Scale Preliminary).

1. (1) KNOWLEDGE IN 3 R'S IS EDUCATION.

2. (5) EDUCATION SHOULD HAVE A VOCATIONAL BIAS.

3. (26) EDUCATION IS ADJUSTMENT TO THE ENVIRONMENT.

4. (41) EDUCATION SHAPES THE INDIVIDUAL TO BE A GOOD CITIZEN OF THE COUNTRY.

5. (50) EDUCATION IS IMPARTING KNOWLEDGE BY THE MATURED TO THE IMMATURED.

6. (53) EDUCATION MUST FULFIL THE NEEDS OF THE COMMUNITY.

7. (54) PUPILS MUST BE GIVEN SCOPE TO EXPRESS THEIR IDEAS.

8. (55) EDUCATION DEVELOPS AWARENESS OF POPULATION GROWTH.

9. (58) BETTER INCENTIVES LEAD TO BETTER ACADEMIC ACHIEVEMENT.

10. (59) CO-EDUCATION DEVELOPS COMPETETIVE SPIRIT AMONG PUPILS.

11. (61) EDUCATION DEVELOPS MORAL VALUES.

12. (70) REGULAR STUDY MAKES LEARNING EASY.

13. (71) EDUCATION BRINGS ABOUT A DYNAMIC SOCIAL CHANGE.

14. (72) EXAMINATIONS ARE NECESSARY TO DISCRIMINATE THE PUPILS.

15. (77) EDUCATION SHOULD DEVELOP SCIENTIFIC THINKING.

16. (78) EDUCATION KEEPS UP ONE'S OWN INDIVIDUALITY.

17. (82) SUCCESS RATHER THAN FAILURE SUSTAINS INTEREST IN EDUCATION

18. (92) EDUCATION DEVELOPS CREATIVE TALENTS.

19. (94) EDUCATION MOULDS ONE'S LIFE.

20. (100) EDUCATED MAN GETS GOOD RECOGNITION IN THE SOCIETY.

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covering all the areas of the District and all types of people, i.e. boys and girls, males and females among parents of these pupils of Scheduled Castes and Scheduled Tribes.

SCORES-FED TO COMPUTER FOR CORRELATION MATRIX

The Scoring Key is now altered for facility to 4,3,2,1 and 0 for positives. No negative items are found in the final attitude scale. The data so collected and computed was then fed to the computer and the 20 x 20 inter correlation matrices were obtained for pupils and parents separately.

** **

INTER-CORRELATION MATRIX — PUPILS.

1.00	-0.06	-0.12	0.15	0.28	0.32	-0.00	0.07	0.20	-0.02	0.18	0.05	0.12	0.01	0.23	0.05	0.03	0.07	-0.01	0.16
-0.06	1.00	-0.09	0.17	0.13	0.07	0.12	-0.02	-0.28	-0.12	0.02	-0.19	-0.07	0.09	0.09	0.01	0.12	0.15	-0.10	0.13
-0.12	-0.09	1.00	-0.02	0.04	0.12	-0.02	0.05	-0.12	0.06	0.11	0.04	-0.03	0.09	0.14	0.02	-0.19	0.05	-0.07	-0.11
0.15	0.17	-0.02	1.00	0.32	0.06	0.25	0.25	0.10	0.32	0.12	0.14	0.07	0.14	0.12	-0.09	0.05	0.18	-0.11	0.01
0.28	0.13	0.04	0.32	1.00	0.28	0.00	0.10	0.06	0.10	0.35	0.22	0.14	0.09	0.36	0.34	0.00	-0.26	0.10
0.32	0.07	0.12	0.06	0.28	1.00	-0.04	0.12	0.04	-0.07	0.10	0.26	0.10	0.02	0.18	-0.00	0.11	0.06	-0.14
-0.00	0.12	-0.02	0.25	0.00	-0.04	1.00	0.09	0.04	0.14	0.09	0.17	0.04	0.01	-0.00	-0.05	-0.19	-0.01	-0.10
0.07	-0.02	0.05	0.25	0.10	0.12	0.09	1.00	0.04	0.22	0.04	0.06	0.10	0.10	0.22	0.12	-0.07	0.02	0.25	0.06
0.20	-0.28	-0.12	0.10	0.06	0.04	0.04	0.04	1.00	0.06	0.13	0.34	0.08	0.07	0.09	-0.14	0.02	-0.17	-0.05	-0.01
-0.02	0.11	-0.04	-0.07	0.14	0.22	0.06	1.00	0.06	0.07	0.30	0.31	0.20	-0.01	0.19	0.09	0.02	0.12	0.06
0.18	0.02	0.19	0.10	0.24	0.09	0.05	0.13	0.06	1.00	0.07	0.33	0.10	0.06	0.05	0.21	-0.02	-0.13	0.07
0.05	-0.01	0.02	0.13	0.26	0.34	0.06	0.30	0.33	0.07	1.00	0.31	0.10	0.00	0.02	-0.05	0.21	0.00	0.03
0.12	-0.07	0.22	0.14	0.10	0.17	0.04	0.31	0.30	0.31	1.00	0.22	0.10	0.10	0.05	-0.01	0.06	0.14
0.01	0.04	-0.03	0.09	0.02	0.01	0.10	0.20	0.00	0.11	0.22	1.00	0.04	0.04	0.08	0.03	0.10	0.04	-0.12
0.23	0.09	0.44	0.20	0.10	0.18	-0.00	0.07	0.09	0.06	0.02	0.10	0.04	1.00	0.18	0.03	0.02	0.25	0.04
0.05	0.01	0.12	0.29	0.36	-0.00	0.12	-0.14	-0.01	0.05	-0.05	0.06	0.08	0.18	1.00	0.24	0.22	-0.22	0.14
0.03	-0.11	-0.09	0.19	0.34	0.10	-0.05	0.02	0.09	0.21	0.05	0.10	0.03	0.24	1.00	0.05	-0.17	0.13
0.07	0.15	0.05	0.18	0.00	0.11	-0.19	0.02	-0.02	-0.17	0.00	-0.01	0.10	0.02	0.22	0.05	1.00	0.08	-0.03
-0.01	0.10	-0.07	-0.11	-0.26	0.06	-0.01	0.25	-0.05	0.12	-0.13	0.06	0.04	0.25	-0.22	-0.17	0.08	1.00	-0.02
0.16	0.13	-0.11	0.01	0.10	-0.14	-0.10	0.06	-0.01	0.06	0.07	0.03	0.14	-0.12	0.04	0.14	0.13	-0.03	-0.02	1.00

INTER-CORRELATION MATRIX -PARENTS.

1.00	-0.07	0.16	-0.07	0.08	0.10	0.01	-0.02	-0.07	0.04	0.02	0.07	0.04	0.05	0.10	0.11	-0.03	0.10	-0.12	0.08
-0.07	1.00	0.10	0.10	0.11	0.20	-0.06	-0.09	-0.00	0.16	-0.08	0.02	0.07	-0.07	0.09	0.22	0.02	0.02	-0.03	0.13
0.16	0.10	1.00	0.20	0.05	0.02	0.03	0.03	-0.01	0.03	0.03	0.16	-0.08	0.07	0.02	-0.03	0.10	0.02	-0.10	0.04
-0.07	0.10	0.20	1.00	-0.09	0.03	-0.01	-0.00	0.17	0.07	0.01	-0.02	0.03	0.19	-0.02	0.09	0.11	0.08	0.11	0.13
0.08	0.11	0.05	-0.09	1.00	0.02	0.12	0.03	0.16	0.14	0.26	0.27	1.00	0.11	0.16	0.06	0.07	0.05	-0.25	0.08
0.10	0.20	0.02	0.03	0.02	1.00	0.02	0.03	0.07	0.21	0.16	0.23	1.00	0.14	0.23	0.27	1.00	0.11	0.07	-0.16
-0.21	-0.09	0.03	-0.01	0.12	-0.05	1.00	0.01	0.07	0.16	0.23	1.00	0.01	0.16	0.26	0.27	1.00	0.11	0.02	0.14
0.13	-0.00	0.17	0.07	0.03	1.00	0.01	1.00	0.23	0.06	0.15	0.11	1.00	-0.08	0.09	-0.02	0.09	0.11	0.16	-0.02
-0.04	0.02	0.16	-0.02	0.03	0.16	1.00	0.23	1.00	0.06	0.27	1.00	0.11	0.16	0.06	0.09	-0.13	-0.04	0.17	0.03
0.07	0.04	0.02	0.03	-0.01	0.14	0.02	0.06	0.27	1.00	0.15	0.11	1.00	0.16	0.09	0.25	0.19	0.25	0.09	0.01
0.08	-0.08	0.24	-0.10	0.06	0.09	-0.11	0.03	0.06	0.15	1.00	0.16	0.09	0.06	0.09	-0.08	-0.01	0.12	-0.01	-0.01
0.00	0.02	0.23	0.00	0.03	-0.02	0.09	-0.12	0.16	0.09	0.16	1.00	-0.01	0.02	0.02	0.21	0.12	0.09	0.03	-0.14
0.12	0.07	0.09	0.03	0.16	0.11	-0.08	0.17	0.09	0.11	0.09	-0.01	1.00	0.02	1.00	0.21	0.17	0.01	0.09	0.09
-0.18	-0.07	0.11	0.19	0.14	-0.05	-0.12	-0.17	-0.08	0.16	0.07	0.02	0.02	1.00	0.02	0.21	0.17	1.00	0.07	-0.15
-0.10	0.09	-0.03	-0.02	0.26	0.16	0.17	-0.17	0.11	0.09	0.16	0.02	1.00	0.02	1.00	0.02	0.17	1.00	0.01	-0.05
0.08	0.22	-0.07	0.09	0.27	0.06	-0.08	0.09	0.07	0.25	-0.08	0.21	0.09	0.21	0.15	1.00	1.00	0.15	0.19	0.08
-0.02	0.02	0.10	0.11	1.00	0.20	0.11	-0.13	-0.04	0.19	-0.01	0.12	0.09	0.03	0.15	1.00	1.00	0.21	0.14	0.06
0.20	0.02	0.03	0.08	0.15	0.07	0.07	0.16	0.16	0.25	0.12	0.19	0.03	0.15	0.21	0.15	0.21	1.00	0.47	0.04
0.13	-0.03	-0.11	0.11	0.05	0.14	0.05	0.20	0.20	0.09	0.12	0.03	0.19	0.05	0.14	0.05	0.14	0.47	1.00	0.17
0.08	0.13	0.04	0.13	0.08	-0.16	0.14	-0.02	0.03	0.01	-0.01	-0.14	0.09	-0.15	-0.05	0.08	0.12	0.04	0.17	1.00