CHAPTER - 3

PLAN AND PROCEDURE

3.1 Introduction :

The present investigation chiefly aims at constructing and standardising a verbal interest inventory for higher secondary students of Gujarat to predict their interest on the ten different disciplines available in Gujarat State; which could serve as one of the criteria for making a right choice of a particular stream at higher education in the University.

This chapter implies the procedure about selection of sample for Pilot Study, norm group and Criterion group, construction and selection of items for the measurement of interests in the ten educational fields, description of the tool employed, collection of data and the Plan for analysis of data.

3.2 Objectives :

The main objectives of the investigation were :

i) To construct a verbal academic Interest Inventory Pertaining to the ten disciplines in Gujarat for XIIth grade students.

ii) To standardise the Interest Inventory.

3.3 Sample :

Keeping in mind the objectives of the present study, three types of sample were selected.

3.3.1 Sample For Criterion-Group (Men-In-Education) :

A purposive sample of 415 final year graduate and post graduate students from each of the ten academic field of formal education at the University level such as Agriculture, Arts, Commerce, Fine Arts, Home Science, Medical, Performing Arts, Science, Social Work and Technology and Engineering, was selected. Besides eight faculties of Maharaja Sayajirao University, Baroda, Agriculture College at Anand and Medical College at Surat were selected to draw the sample for Criterion group. The size of the discipline-wise Criterion group sample varied from 20-50 students, consisting the total sample of 415 students.

Campbell (1977) has emphasized that characteristics of the occupational samples greatly influence the characteristics of the resulting scale. He has stated five important characteristics emerged through years of research which are (job satisfaction, success, Age, Experience, and Performing in the typical manner of the sample) to be selected with care while selecting samples for Criterion group.

According to him,

> the criteria of earning an advanced degree or being certified as an index of formal achievement can be considered as success. Experience though crude but an effective index of many pertinent qualities, and screaning for it helps purify the final sample. He also recommended that workers with three years of experience who say they like their jobs, know enough about their occupation to answer validly the question of job satisfaction presisting in an occupation for three years represents, at the minimum a modest level of both achievement and satisfaction.

Explaining the quality of the final criterion sample he also reported that the present return (number of filled-up inventories) had practically nothing to do with the quality of the final sample. A low rate or high rate of return did not mean the sample a Poor one or a guaranteed useful sample respectively, what was important was the characteristics of the sample, no matter how the people were serveyed by mail or in person with less number of subjects.

Based on the above discussed criteria, the investigator selected the Criterion group (men-in-education) from each of the ten disciplines, according to their success in terms of achievement-3 to 5 years experience of study in the respective selected disciplines, young age (+21 to +25) and performing the educational tasks in the typical manner; which would indicate a greater characteristic influence on the resulting scales.

3.3.2 Sample For Pilot Study (Men-In-General) :

A representative cluster (whole class) of 55 XIIth grade students of the University Experimental High School, Baroda, formed the sample for the preliminary study. These students were not included in the final administration of the Inventory.

3.3.3 Sample For Norm-Group (Men-In-General) :

As the choice of a particular field of study at University level has to be made after completing the twelth grade examination conducted by Higher Secondary Board in Gujarat, the XIIth grade students studying in gujarati medium schools of Gujarat served as the population for the present investigation.

The chief aim in constructing academic Interest Inventory considered by the investigator was to prepare a standard instrument which will help Gujarati children in knowing their basic academic interests and accordingly making a right choice for their future educational career. The age range of higher secondary classes tend to be +17 to +20 years. It is also empirically revealed by psychologists that interests are fixed and mature at this stage and these age group students can follow the insturctions and respond the verbal test. Hence it was decided to select the XIIth grade students for present investigation.

The latest list of certified Higher Secondary Schools in Gujarat State published by Gujarat Madhyamik Shikshan Board, Gandhinagar (1988-89), was referred to estimate the current higher secondary students population. There were in all 1,247 Higher Secondary Schools. (Refer Appendix-I) It was decided to select students from 13 schools, 7 schools from urban and 6 schools from rural area of five districts.

As it is seen in Table 1, the norm group is distributed over five zones of the State, The schools, were chosen on a systematic basis. In doing so, the procedure adopted was to prepare a frame of schools according to different strata. While selecting the schools from each of the five stratum the following points were kept in mind.

a) Gujarati medium schools located in Urban and Rural areas.

b) Boys' schools, Girls' schools, and mixed schools. The details of the sample are presented below in Table-2.

An attempt was made to keep the sampling fraction uniform for each stratum. But in the case of certain strata having few schools particularly in rural area and where girls students were few at higher secondary level, the sampling fraction had to be varied. The defined target sample during the actual study was 825 including all

Table : 1

Distribution of Sampled Higher Secondary Schools from Five Districts of Various Zones of Gujarat State.

Sr. No.	Zone	Name of Dist.	Name of Higher Sec. School (URBAN)	Name of Higher Sec. School (RURAL)
1.	Central	Ahmeda-bad	Seth C.N. Vidyalaya Ambawadi.	D.A.Vidyamandir Tal. Dhandhuka Ahmedabad.
2.	North	Mehsana	Sarvajanik Vidyalaya, Mehsana.	N.M.Nutan Sawa Vidyalaya, Tal. Visnagar, Mehsana.
3.	East	Panch-mahal	M.& M.Mehta High School Godhra.	Divada Madhya-mik Shala, Tal.Santrampur, Panchmahal.
4.	South	Surat	Jeevan Bharti High School, (Nanpura)	M.M.Peeperdiwala High School, Tal. Rander, Surat.
			Sarvajanik High School for Girls', Ambaji Road.	
5.	West	Vadodara	Pratap High School, Sayajigunj.	Vakal High School Tal. Padra, Vadodara.
			Sharda Mandir High School Karelibaug.	Mobha Road High School, Vadodara.

Table : 2

District, Areawise and Sexwise Distribution of Students of Gujarat State
(Norm group / Men-in-General)

Sr. No.	Location / District	URBAN		RURAL		TOTAL
		Boys	Girls	Boys	Girls	
1.	Ahmedabad	50	37	50	25	162
2.	Mehsana	50	29	50	46	175
3.	Panchmahal	50	42	25	25	142
4.	Surat	50	50	50	25	175
5.	Vadodara	50	50	50	21	171
TOTAL		250	208	225	142	825

the selected strata as presented in Table-2. A representative stratified cluster sample (Area) was selected at random from each sampled school within the five districts of Gujarat, as shown in Table-2.

3.4 Construction Of The Inventory :

It was observed from the previously reviewed literature that developmental efforts to measure interests had followed two approaches, the rational of Kuder and the empirical approach of Strong Jr. In the present study, it was determined to develop a verbal Interest Inventory on the basis of both the approaches on scientific lines.

Before constructing the items on Academic verbal Interest Inventory, all the available literature on vocational and educational guidance, previous interest studies in India and abroad at Post-graduate and doctoral level, concerned educational and Psychological journals, abstracts, manuals and the inventories in current use were critically studied. It was thought out to construct the original self-reporting Inventory in Gujarat language, following the methods by veteran test-makers such as strong and campbell; so that the test can be based on the characteristic environment of Gujarat instead of blindly translating from those available in western countries with necessary adoptions.

The items most relevant to the ten educational fields to measure interests were constructed on the basis of the following six areas of interests of women and men.

i) Academic Interests,

ii) Creative Interests,

iii) Homemaking Interests,

iv) Vocational Interests,

v) Recreational Interests, and

vi) Social Interests.

Six hundred and Sixty (660) items on the trial form the Inventory were grouped into seven subtests each consisting the list of items on (i) Occuations, (ii) School subjects, (iii) Curricular Activities, (iv) Amusement; (v) Peculiarity of people, (vi) Preference between two activities and (vii) personality characteristics related to ten fields of education respectively. The present Interest Inventory was built up on the basis of both the rational as well as empirical approach adopting the methodology of SCII model (1974) which was verbal in nature and self-reporting. First five sections of sub-tests of the Interest Blank were, 'Occupation', 'School subjects', 'Activities', 'Amusements' and 'Peculiarity of people' to which preference were to be indicated on the three point scale (Like, Indifference, Dislike) on response sheets. The items on sixth and seventh subtests were taken directly

from the Strong Vocational Interest Blank (SVIB). The sixth section also contained three point scale to which preferences were to be marked from among right column items over left column and undecided in the middle column, whereas seventh section consisted items on personality characteristics with three point scale to which responses were to be indicated under 'Yes', '?' and 'No' categories.

The items of each individual educational interest scale on seven subtests were designed separately in English for the ten educational fields. The items on first five subtests of the educational scales varied from 8-20 items making the total items ranging from 144 to 294 items on individual scales (discipline wise) forming a total of 660 items on the whole Blank.

Items regarding first five subtests of the Interest Blank under the ten fields of education were given to a Panel of five senior academicians from each of the eight faculties of M. S. University of Baroda, from Agriculture college, Anand and Medical College of Surat, who were having atleast more than 15 years of academic experience being Readers, Professors and Heads in the respective field of education, to judge the content validity and item suitability under each of the first five subtests of the Inventory. (Refer Appendix-II) The item content was checked by them in light of the specific criterion given in the letter attached with the Inventory (Relevant educational scale). All the individual inventories were

collected personally. The common pool of items was prepared by the investigator on the basis of the analysis. Comments and suggestions received from experts to these items were feedback for further improvement and thus the recommendations of experts were incorporated and items were modified accordingly. Items with 50 and above percent acceptance were included for the tryout form. Majority of (76%) items on the first form of each field of education were found to be valid in content as well as suitable to the comprehension level of the students with pooled judgement except two items in commerce and Home Science under Section III "Activities". These items were replaced with new items.

3.5 Administration Of Inventory On Criterion-Group :

The individual Interest Scale was administered to criterion sample of final year graduate and post-graduate students of the ten faculties to yield the criterion score. (Refer Appendix-III) It was felt at this juncture to select final year graduate and post-graduate students as criterion groups instead of occupational groups for the following reasons :

i) The senior students grow higher in the interests pertaining to their discipline due to continued learning of three years as a result of their training and achievement; resulting into typical performance of individuals.

ii) Cooperation of the members of an occupation may be difficult to obtain when individuals are to be selected according to their occupations.

iii) The cost in terms of time, money and effort per unit will go too high with the occupational group.

iv) The past graduates and post-graudates presently working in the occupations might have been forced to choose the one due to non-availability of education relevant occupation without their true interest in work and may not be fully satisfied due to unemployment and under-employment being the grave problem created because of population explosion and the inadequacies of the planned systems in our country. This may not prove to be a relevant and reliable characteristics resulting into non-typical performance of individuals.

Hence, the specific educational interest scales were administered to the respective criterion groups consisting of 20-50 final year graduate and post-graduate students from the various educational institutions being the men-in-education as already described under the criterion sample. First eight items with highest percentage of preference indicated by the ten Criterion groups under each of the five subtests were selected for the preliminary try-out form. A pool of items detailed below were finalised for the preliminary tryout study as presented in Table-3.

Table : 3

Number and Type of Items on Tryout Form

Sr. No.	Sub-Tests	Item Types	No. of
1.	Occupations	L.I.D. Statement	80
2.	School-subjects	L.I.D. Statement	80
3.	Activities	L.I.D. Statement	80
4.	Amusements	L.I.D. Statement	80
5.	Peculiarities of People	L.I.D. Statement	80
6.	Preference over items	L = R (Paired Associates)	65
7.	Personality Characteristics	Yes - ? - No (Checklist)	30
		TOTAL	495

The preliminary form contained (495) four hundred and ninety five items, out of 660 items of which the first five sections were arranged after coding the ten disciplines in spiral omnibus fashion for avoiding subjectivity, the faking, and the intense repetition. The ten disciplines were coded alphabetically starting from Agriculture, Arts, Commerce, Fine Arts, Home Science, Medical, Performing Arts, Science, Social Work and Technology & Engineering.

This meant that eight (8) items were selected per discipline (10) per subtest (5) forming the total of (8 x 10 x 5 = 400). Four hundred items, each of the five subtests consisting of eighty (80) items. Both the sixth and seventh subtest items were retained being

65 and 30 respectively as per the original format. Thus a spiral omnibus type verbal Interest Inventory to measure interests on ten educational scales consisting seven subtests was constructed for the age-group of 17-20 years studying in twelfth grade. After modifying and arranging the items, the whole Interest Blank was translated in Gujarati Version including all the sectionwise instructions with response sheet information and cyclostyled for the first tryout (Refer Appendix-IV). The response sheet had the same code numbers on 495 items as mentioned on the whole Interest Inventory. The tryout form was split up into two booklets, one being the question Inventory and the other being the response sheets.

3.6 Administration Of Inventory On Sample For Pilot Study :

The revised Interest Blank was then administered on a trial base to a purposive cluster sample of fifty five (55) twelfth grade students as mentioned already under pilot-study sample to check the predictive value of the measure, to ascertain clarity of items, to fix the duration for the Interest Inventory for its administration and to standardise the instructions.

The procedure of adminsitering the Interest Inventory at Pilot stage was carried out in the manner mentioned below.

i) The whole class of fifty five twelfth grade students was administered the test in the regular classroom under a

conducive environment and controlled situations under the supervision of class-teacher as well as the investigator.

ii) The purpose of the study was explained orally after building up a good rapport with the group by the investigator at the time of pretesting. The oral and written directions were explained on blackboard for responding the questions in response sheet in a correct manner.

iii) Both the booklets of Inventory and answer sheet were distributed.

iv) The new words of which the students had querry were explained by the investigator in a regional language during the testing. The words such as calculus, coreography, Dietition seemed to be new to the students.

v) During the pre-run full time was given to every examinee to answer all the items of the test. The examinees were instructed to raise their hands and to note the time on their sheets, as soon as they finished the test. The starting time and also the finishing time for the quickest and the slowest student for the test were noted.

vi) The students were supervised by the investigator while they were taking the test.

vii) The booklets and Response Sheets were collected.

vii) The closely inspected results of the Pilot study showed a significant indication of the interests towards various educational fields. The average time taken in filling up the Inventory ranged from 20-45 minutes with a mean-time of about 30 minutes to complete the inventory.

3.7 Item Validity :

A number of methods for calculating the item validity have been evolved by research works. Long Standford and others have been on account of a great experiment arrivedat to determine the efficacy of various methods of calculating item validity in their books. 'The Validation of Test Items' published by Department of Educational Research (1935) - Biserial r in their findings is the best method of validating test items. This method, at the same time, involves a lot of calculations.

Validity values derived for test-items have specific reference only to the group of subject actually involved, or to groups in which the criterion ability is very similarly distributed. An item cannot be deemed to possess a certain validity, per se.; the value obtained for one group may differ widely from that obtained for the other, especially, if the groups differ widely from each other, either as to the average level or as to the variability of the trait concerned. No techniques are free from the limitation as all the validity

values tend to be conditioned by the variability of the criterion scores.

In the present study Rural and urban, boys & girls constitute widely differing groups, in the matter of average level as well as variability of interest and hence the validity values would differ among the other groups, which raised a question as to whether it was worthwhile going in for valididting items by any method like the Bi-serial r which involves a lot of calculations and when the results were not going to be reliable for all groups to be tested.

It is not inevitably true that the more valid items may generally be expected to make the most valid test. The ideal is a test composed of items which correlate highly with the criterion and lowly with one another. So, looking to the negligible advantage accruing for a validating test items compared to the elaborate calculations involved, the same idea was dropped. It was preferable to remain satisfied with an approximate check of item validity by Symond's method, (Long 1935) The difference between the two independent samples show the degree of validity of the items.

In the empirical approach the relevance of the item content or its apparent validity is not of major consideration for its inclusion in the inventory. Rather ideosyncrasies and statistical difference of preferences between two or more independent groups. Such as m.i.g. (Pilot group) and m.i.e. (Criterion group) are of major importance

in deciding upon the items and their weights in any scale. If an item discriminates between a criterion and pilot groups it is given a proportionate weight in respect of interest scale in that educational area. Here the weights or the key development procedure is a compromise between the statistical sophistication in the formula used for discrimination and the labour involved in scoring the Inventory.

The validity of the Inventory in the present study had been established by empirically testing the logic of the procedure adopted for developing the measure, as recommended by Campbell (1977).

Percentage differences for each item were calculated by systematically comparing the 'Like' and 'Dislike' response percentages - one item at a time, yielded two percentage differences between the m.i.g. (pilot) and m.i.e. (criterion) groups according to the procedure suggested by Campbell (1977); for the selection of the items for the final form. The guidelines for item percentages recomended by Campbell are only applicable to the ("Like", "Indifference" - "Dislike" categories) three-choice items. The items with larger difference can be selected for the corresponding educational scale as per the following criteria.

i) In general items with 10 percent and above difference are barely important.

ii) 15 to 19 percent (difference) items are moderately important, and

iii) Items with 20 percent and larger differences are extremely important.

Important here is that the item reflects a real difference between the samples, not only raplicate on repeated sampling, but manifest itself in differential behaviour.

Table 4 indicates the percentage difference of 'Like' preference on 400 items of the second tryout form.

The summary of the Table - 4 is presented in Table - 5 on the basis of the data given in Table - 4 as shown below. The items were selected for the final form of the inventory on the basis of the differences in percentage of "Like" preferences as per recommended criteria by Campbell. Larger the percentage difference, extremely important the items were considered for the test.

Table : 4

Comparison of percent 'Like' Responses to the Items on Interest Blank between Criterion and Pilot Group

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
1.	100	24	76	22.	55	50	5
2.	70	40	30	23.	55	29	26
3.	85	37	48	24.	56	16	40
4.	80	34	46	25.	60	34	26
5.	80	29	51	26.	35	42	- 7
6.	45	42	3	27.	68	21	47
7.	68	50	18	28.	30	32	- 2
8.	35	31	4	29.	60	34	26
9.	48	34	14	30.	72	45	27
10.	64	50	14	31.	20	21	- 1
11.	40	19	21	32.	20	58	-38
12.	65	55	10	33.	80	68	12
13.	45	82	-37	34.	28	47	-19
14.	24	66	-42	35.	60	61	- 1
15.	65	34	31	36.	40	32	8
16.	65	45	20	37.	44	32	12
17.	60	42	18	38.	75	40	35
18.	65	42	23	39.	48	42	6
19.	60	34	26	40.	40	50	-10
20.	68	69	- 1	41.	72	24	48
21.	68	29	39	42.	00	21	-21

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
43.	15	45	-30	67.	44	37	7
44.	48	53	- 5	68.	70	79	- 9
45.	65	68	- 3	69.	64	39	25
46.	55	45	10	70.	40	45	- 5
47.	48	66	-18	71.	92	18	74
48.	85	39	46	72.	55	58	- 3
49.	60	13	47	73.	60	34	26
50.	60	71	-11	74.	24	55	-31
51.	12	24	-12	75.	44	24	20
52.	45	66	-21	76.	50	24	26
53.	80	18	62	77.	44	45	- 1
54.	40	37	3	78.	20	39	-19
55.	40	24	16	79.	36	34	2
56.	50	24	26	80.	84	21	63
57.	52	71	-19	81.	92	31	61
58.	40	18	22	82.	45	79	-34
59.	56	26	30	83.	45	79	-34
60.	52	42	10	84.	88	60	28
61.	72	32	40	85.	80	60	20
62.	50	34	16	86.	90	52	38
63.	30	81	-51	87.	92	66	26
64.	72	45	27	88.	70	37	33
65.	40	42	- 2	89.	68	68	00
66.	40	37	3	90.	84	68	16

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
91.	8	31	-23	115.	80	56	24
92.	35	42	- 7	116.	60	29	31
93.	50	84	-34	117.	32	42	-10
94.	56	55	1	118.	10	34	-24
95.	55	45	10	119.	64	42	22
96.	50	55	- 5	120.	84	89	- 5
97.	20	45	-25	121.	64	24	40
98.	50	50	00	122.	90	68	22
99.	32	42	-10	123.	45	52	- 7
100.	48	42	6	124.	76	39	37
101.	48	21	27	125.	70	29	41
102.	45	24	21	126.	15	34	-19
103.	65	79	-14	127.	28	34	- 6
104.	64	71	- 7	128.	60	42	18
105.	55	47	8	129.	68	34	34
106.	25	24	1	130.	60	68	- 8
107.	64	60	4	131.	64	50	14
108.	60	24	36	132.	20	18	2
109.	68	39	29	133.	45	50	- 5
110.	68	63	5	134.	88	50	38
111.	28	31	- 3	135.	85	55	30
112.	35	37	- 2	136.	15	18	- 3
113.	85	76	9	137.	40	79	-39
114.	68	29	39	138.	20	29	- 9

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
139.	68	21	27	163.	100	92	8
140.	44	39	5	164.	24	50	-26
141.	44	44	00	165.	70	42	28
142.	50	50	00	166.	85	52	33
143.	15	66	-51	167.	40	63	-23
144.	84	55	29	168.	80	87	- 7
145.	70	79	- 9	169.	64	68	- 4
146.	45	34	11	170.	52	37	15
147.	88	29	59	171.	52	26	26
148.	25	18	7	172.	70	50	20
149.	76	29	47	173.	55	45	10
150.	72	52	20	174.	76	76	00
151.	56	45	11	175.	70	59	11
152.	70	68	2	176.	45	29	16
153.	75	58	17	177.	68	60	8
154.	80	60	20	178.	80	55	25
155.	40	50	-10	179.	88	74	14
156.	45	42	3	180.	72	55	17
157.	64	60	4	181.	64	24	40
158.	100	21	79	182.	35	37	- 2
159.	48	42	6	183.	70	52	18
160.	20	24	- 4	184.	60	37	23
161.	44	39	5	185.	85	39	46
162.	70	60	10	186.	30	78	-48

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
187.	84	13	71	211.	68	29	39
188.	70	63	7	212.	65	68	- 3
189.	80	92	-12	213.	30	34	- 4
190.	72	47	25	214.	16	40	-24
191.	60	39	21	215.	60	53	7
192.	85	31	54	216.	10	37	-27
193.	45	74	-29	217.	56	63	- 7
194.	92	45	47	218.	55	26	29
195.	75	60	15	219.	68	45	23
196.	60	31	29	220.	88	52	36
197.	44	45	- 1	221.	88	21	67
198.	65	24	41	222.	75	50	25
199.	48	26	22	223.	65	87	-22
200.	48	58	-10	224.	64	60	4
201.	44	34	10	225.	75	90	-15
202.	75	47	28	226.	55	42	13
203.	65	81	-16	227.	56	77	-21
204.	56	42	14	228.	95	79	16
205.	80	50	30	229.	56	71	-15
206.	85	34	51	230.	40	40	00
207.	44	42	2	231.	72	13	59
208.	65	42	23	232.	40	53	-13
209.	32	42	-10	233.	80	37	43
210.	52	53	- 1	234.	92	45	47

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
235.	70	63	7	259.	56	42	14
236.	60	66	- 6	260.	72	71	1
237.	28	34	- 6	261.	64	26	38
238.	55	61	- 6	262.	45	37	8
239.	52	66	-14	263.	85	39	46
240.	84	71	13	264.	72	47	25
241.	64	21	43	265.	90	73	17
242.	75	92	-17	266.	75	44	31
243.	85	37	48	267.	80	55	25
244.	56	60	- 4	268.	55	39	16
245.	95	73	22	269.	68	37	31
246.	80	81	- 1	270.	40	34	6
247.	60	37	23	271.	76	71	5
248.	80	39	41	272.	15	52	-37
249.	76	71	5	273.	65	50	15
250.	48	39	9	274.	80	66	14
251.	16	29	-13	275.	70	21	49
252.	35	31	4	276.	65	42	23
253.	85	50	35	277.	40	18	22
254.	84	71	13	278.	55	60	- 5
255.	60	56	4	279	64	50	14
256.	75	66	9	280.	52	47	5
257.	80	44	36	281.	60	60	00
258.	60	50	10	282.	25	26	- 1

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
283.	60	55	5	307.	60	68	- 8
284.	76	73	3	308.	65	50	15
285.	65	73	- 8	309.	72	39	33
286.	85	55	30	310.	76	47	29
287.	60	18	42	311.	76	26	50
288.	55	29	26	312.	85	31	54
289.	72	52	20	313.	95	42	53
290.	48	55	- 7	314.	72	66	6
291.	76	76	00	315.	50	55	- 5
292.	10	37	-27	316.	50	55	- 5
293.	65	63	2	317.	80	55	25
294.	80	56	24	318.	70	71	- 1
295.	60	56	4	319.	56	34	22
296.	70	39	31	320.	88	63	25
297.	40	34	6	321.	96	39	57
298.	60	39	21	322.	50	44	6
299.	60	34	26	323.	80	60	20
300.	40	56	-16	324.	68	55	13
301.	52	42	10	325.	50	39	11
302.	80	44	36	326.	90	52	38
303.	75	39	36	327.	90	50	40
304.	64	55	9	328.	70	47	23
305.	60	42	18	329.	68	21	47
306.	50	66	-16	330.	44	42	2

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
331.	76	29	47	355.	95	55	40
332.	50	66	-16	356.	55	60	- 5
333.	85	63	22	357.	80	63	17
334.	72	71	1	358.	60	44	16
335.	95	68	27	359.	32	39	- 7
336.	80	63	17	360.	52	34	18
337.	70	52	18	361.	72	55	17
338.	85	29	56	362.	55	42	13
339.	76	37	39	363.	65	63	2
340.	36	24	12	364.	72	31	41
341.	56	18	38	365.	40	47	- 7
342.	75	39	36	366.	60	39	21
343.	80	68	12	367.	80	37	43
344.	64	63	1	368.	75	44	31
345.	65	39	26	369.	68	24	44
346.	75	42	33	370.	48	47	1
347.	80	50	30	371.	76	29	47
348.	65	37	28	372.	55	60	- 5
349.	68	55	13	373.	55	52	3
350.	36	37	- 1	374.	80	60	20
351.	88	29	59	375.	60	47	13
352.	65	52	13	376.	80	50	30
353.	65	50	15	377.	80	71	9
354.	84	44	40	378.	90	92	- 2

Item No.	Crite-rion	Pilot	Diff.	Item No.	Crite-rion	Pilot	Diff.
379.	76	39	37	390.	64	71	- 7
380.	52	21	31	391.	60	29	31
381.	64	68	- 4	392.	65	79	-14
382.	55	31	24	393.	50	42	8
383.	50	56	- 6	394.	56	52	4
384.	72	68	4	395.	70	76	- 6
385.	95	50	45	396.	55	42	13
386.	70	39	31	397.	80	66	14
387.	100	56	44	398.	65	31	34
388.	80	37	43	399.	92	26	66
389.	52	42	10	400.	68	55	13

TABLE : 5

Frequency And Percentage Distribution of 'Accepted' and 'Rejected' Items on Five-Sub-Test of Interest Inventory

No.	Sub-Test Type	Items Total	Accepted (Valid) (Above ± 10% Diff.)		Rejected (Below ± 9% Diff.)	
			(f)	(%)	(f)	(%)
I	Occupation	80	60	75	20	25
II	School-Sub.	80	51	64	29	36
III	Activities	80	59	74	21	26
IV	Amusements	80	53	67	27	33
V	People	80	59	73	21	26
Total		400	282	71	118	29
Average		100	56	71	24	29

As seen from the Table - 5 majority of the items were found above 10 percent difference on each individual subtest. Seventy one (71) percent items were within the acceptance percentages which ranged from 10-79 percent difference between m.i.g. (Pilot group) and m.i.e. (Criterion group), as seen from Table - 4. Forty eight percent items were found with acceptance of extremely important (above 20 percent) with real difference. As per the validity criterion, items of above ± 10% difference constitute the most discriminating test. The items showing low values of difference ±9%

and below were considered as rejected items and hence they were discarded from the test while constructing the final form.

It will be observed from the Table - 5 that on an average 56 items per sub-test were found to be valid and 50 items on each sub-test were retained in light of the highest criterion score on like category obtained by criterion group. The final script of Inventory was developed after rearranging the accepted items making the total of 250 items on first five sub-tests. Fifty items were retained out of 65 items for sixth sub-test and 25 items out of 30 items for seventh sub-test respectively on the basis of the highest 'like' preferences of criterion groups to make the test a uniform having a total of 325 items on final Interest Blank. (Refer Appendix-V)

i) Content Validity :

The main emphasis in constructing these educational scales was laid to pull together related item, hence each scale was reflected this focus. For example, the SCIENCE SCALE contained the items like, Scientist, Science teacher, Forest Officer, Visiting Science fair, visiting zoo, watching mathematic show, working in a research laboratory etc. The same was also true for other educational scales.

ii) Concurrent Validity :

The concurrent validity of the Interest Inventory was checked by comparing scores of people who were currently taking education in differnt disciplines, and it was revealed through mean raw scores of each item that graduate students scored high on educational scales relevant to their own disciplines: For example Fine Arts students scored high on Fine Arts scale whereas students belonging to m.i.g. group with general education background scored only average or lower on scales not relevant to their educational interests.

iii) Predictive Validity :

Since a long-range discrimination, was harder to make in the present study than a concurrent one, it could be said that students with high scores for example on SCIENCE scale may tend to end up in future educational career or occupational career of a generally scientific character.

3.8 Reliability Of The Inventory

The statistical measure of the validity of a test is the coefficient of correlation between test scores and an accepted criterion. The measure of its reliability is the coefficient of

correlation between scores made when the test is administered to the same set of candidates on two separate occasions or between scores by same candidates made on two equivalent forms almost at the same time. A test has validity only with reference to some specific pupose but its reliability is wholly independent of purpose. The validity of a test is conditioned by its reliability, and it is certain that a test in order to be perfectly valid, has to be perfectly reliable. Strong Jr. (1964) has described seven various methods of measuring stability of interest-items as under :

> Changes in reaction to one or more interest items have been expressed in seven different ways.
>
> i) Change in liking,
>
> ii) Change in indifference,
>
> iii) Change in disliking,
>
> iv) Change in total attitude
>
> v) Percentage of identical responses,
>
> vi) Number of shifts to make the first responses equal to the second, and
>
> vii) Coefficient of stability.

One needs to deal with percentages in the three category distributions. Certain of the statistical procedures used here are valid only when the sum likes, indifferences, and dislikes equal 100 in all the distributions, which is the case when percentages are used.

3.8.1 Stability or constancy, has reference to the shifts in response to a given item between the original test and a retest. Such shifts may be totalled so as to express (i) Constancy of individuals upon all the items or (ii) the stability of the items as checked by all the persons tested.

The number of shifts measure was preferred by Strong because :

i) It is easier to calculate,

ii) The scores have a very definite meaning i.e. the number of persons among 100' who shift their responses one category; and third a slight change in interest is not reported as proportionally greater than a much larger change as occurs with the coefficient of stability procedure.

In the present study the reliability of the Interest Inventory in terms of stability was established by test-retest method with the same group which was used in Pilot study. This group was readministered the same Interest Inventory with an interval of 30 days. During the retest administration only 38 students were present hence the responses of the same 38 students were tallied for establishing stability.

The first and second procedure as suggested by strong under sixth method for calculating number of shifts out of three

procedures mentioned as under were employed to test the stability of the construct. The stability of the seven sub-tests on Interest Blank was established separately; and later on the stability of each of the ten educational scales was established by comparing shifts during the two test administrations.

The first procedure gives a true picture of the stability of interests. The first of this procedures records the number of shifts for each person, between test and retest, and the average number of shifts for all persons, for each item. The second procedure disregards compensating shifts between individuals and records the trend - the extent to which shifts have been made from liking toward indifference and disliking, or the reverse, for each item, averages for all items can be easily obtained if desired.

Total responses of 38 students were calculated on the basis of first procedure illustrated as seen in Table - 6 and Table - 7.

Suppose the following are the responses of six students to the first three items on the blank upon two different occassions. The shifts between test and retest can be calculated as shown below :

TABLE : 6

Distribution of Response Shifts Between Pretest and Retest of Individuals

Occupation	Original Responses of six students I	Retest Responses of six students II	Total No. of Responses of six students on I & II Test under three categories	
First Sub-test	1 2 3 4 5 6	1 2 3 4 5 6	Test L I D	Retest L I D
1. Agricultural Officer	L I D D L D	I L L D D D	2 1 3	2 1 3
2. School Principal	I I I I I L	D I I L I D	1 5 0	1 3 2
3. Accountant	I D I D I D	I L L D I D	0 3 3	2 2 2
Total			4 Shifts	

The responses on the interest test and retest were used and then totals of all L, I, D responses for the test and retest were recorded as follows. In this case, a shift, for example, from L to I of one person is cancelled by a shift from I to L of a second person and the summary is zero; consequently the second procedure records the trend in the responses, not the total number of shifts as shown below.

TABLE : 7

Total Trend in Response Shifts

	Occupation (Sub-test I)	Total of Responses of six Students						No.of shifts between Test & Retest
		TEST			RETEST			
		L	I	D	L	I	D	
1	Agricultural Officer	2	1	3	2	1	3	0
2	School Principal	1	5	0	1	3	2	2
3	Accountant	0	3	3	2	2	2	2
	Average per item							1.3
	Average per item per Individual							.21

When the test responses for all L (or D), the retest responses by chance should be evenly divided among L, I and D. This gives an L - L an L - I and an L - D Combination for each three cases and 0, 1 and 2 shifts, respespectively, averaging one shift per case; when the test responses are all I the retest chance gives 2 shifts per 3 cases or 0.67 shift per case. As distributions approximate 33.3 L, 33.3 I and 33.3 D, the number of shifts per case by chance is 0.89. The range is accordingly 0.67 to 1.00 with the average shifts of data approximating 0.89.

The last column gives a measure of stability of the three items. The smaller the number of shifts, (0.21) the greater the stability.

The minimum number of shifts possible per individual is 0, the maximum is 2.0 and the number of shifts which will occur by chance approximates 0.89.

3.8.2 A formula by Burnham as suggested by Strong (1964) was also employed to measure the change in interest to establish the stability according to the seventh method.

$$C = (50)\ (2 - \sqrt{\frac{\Sigma d^2}{n}})$$

Where, a change from liking to indifference and from indifference to dislking, and the reverse of these two, is counted as deviation of 1, and a change from liking to disliking and the reverse as a deviation of 2.

Such a coefficient has the property of a definite relationship with the number of identical responses, variation in numerical size within prescribed limits (from 100 to 00). Comparable to those of the person product - moment correlation coefficient (except that it has no negative values) and, in addition such a coefficient is based upon all items, (categories, i.e. Like, Indifference, Dislike) in the distribution of responses.

3.8.3 The coefficient of correlation among pre-test and re-test responses was also established by using Karl Pearson's formula as indicated in Appendix-VI.

Gupta (1987) mentioned that of the several mathematical methods

of measuring correlation, the Karl Pearson's method, Popularly known as pearson coefficient of correlation, is the most widely used in practice. Pearson's r is one of the very few symbols that are used universally for describing the degree of correlation between two series.

The formula for computing r is :

$$r = \frac{\Sigma xy}{\Sigma x^2 \times \Sigma y^2}$$

Only the responses of 'Like' category of two series of (Pretest and Retest) Inventory Test on 38 students were calculated to obtain the deviations and to compute r.

The coefficient of stability for seven subtests by shift method with second procedure revealed to be highly significant as the value of stability or constancy was found out to be (0.12) which was less than 0.89 in the smaller size as presented in Table - 8 which indicated and proved the smaller the value, greater the stability.

The coefficient of constancy/stability values obtained by employing the formula can be seen from the Table - 8 that C values ranged from 92 to 95 which indicated a very high constancy on all the seven subtests of the Inventory with an overall stability of 92.7.

The Pearson's r (Table - 8) for all the seven subtests also revealed to be from 0.60 to 0.88 with the average coefficient of correlation of the whole Interest Blank consisting of 7 subtests under ten fields of education (scales) was 0.75 which indicated that the Inventory was highly reliable.

TABLE : 8

Stability of Interests on each sub-test

Sub-Test	Type of Items	Total Items	Total No.of Shifts	Average No. of Shifts per Item per Individual			
				Second Procedure		Stability (C)	Person's (r)
				Item	Stability	From shift deviations	
I	Occupation	80	396	4.9	.12	92	.60
II	School Subjects	80	369	4.6	.12	92	.88
III	Activities	80	376	4.7	.12	92	.85
IV	Amusements	80	338	4.2	.11	93	.82
V	People	80	374	4.6	.12	92.5	.60
VI	Preference	65	326	5.0	.13	92.6	.78
VII	Personality	30	131	4.3	.11	95	.77
Total		495		32.3	.83	649.1	5.28
On whole Blank Average Stab.				4.6	.12	92.7	.75

Reliability coefficients had been computed for each of the ten educational scales on the basis of the Pilot study sample from the test-retest scores on 'Like' Preferences. Pearson's r (product - moment relation) was computed to obtain reliability for each educational scale as reported in Table - 9. The reliability of the whole blank of different educational fields revealed to be in the range of 0.67 to 0.87 obtaining an average reliability of 0.79 which proved to be a quite high relationship. Moreover it was observed that students interests had shown high stability in those fields which were in some way connected with the training given.

TABLE : 9

Reliability of Coefficients for the ten Educational Scales

Sr. No.	Scale (Educational)	r
1.	Agriculture	0.82
2.	Arts	0.85
3.	Commerce	0.81
4.	Fine Arts	0.85
5.	Home Science	0.87
6.	Medical	0.67
7.	Performing Arts	0.78
8.	Science	0.79
9.	Social Work	0.74
10.	Technology & Engineering	0.74

3.9 Final Form Of The Inventory

On the basis of rational and empirical data the items were finalised for the Interest Inventory after establishing characteristics of a good test, that is objectivity, stability coefficients, and the highest percentage difference of preferences between criterion group and Pilot group on items. Three hundred twenty five (325) items including 50 items on six sub-tests each and 25 items on seventh sub-test as presented in Appendix-V were retained on the final form of Interest Inventory pertaining to ten selected fields of education.

3.10 Administration Of The Final Form On The Norm Group

Data were collected personally by the investigator from the (men-in-general group) norm group, the selected samples from the five districts of Gujarat consisting of 825 students with the prior permission of principals of the respective schools in urban and rural areas after the printed Interest Inventory and Response - sheets were ready. The students who remained absent during the time of data collection from December to February 1991 were not contacted again due to the lack of time on the part of the investigator and the students' Board Examination was approaching soon.

The administration of Interest Inventory was conducted according

to the procedure explained earlier and the respondents were allowed 30 minutes to answer the test. Data were collected over a period of three months. The school-wise response sheets were coded, scored, tabulated and analysed by hand scoring with the data of criterion and Pilot groups by the investigator, and normative data of 825 Interest Blanks on 325 items were computed and analysed on IBM machine scoring at two centres, one at ICSSR, centre for social studies at Surat and the remaining data at Bansal Associates, Data Processing Centre, Baroda.

3.11 Scoring

Selection of procedure in scoring a Blank depends upon the volume of scoring, the promptness with which the reports must be rendered and other conditions. Four procedures are in use today for scoring the blank. (i) Hand scoring (ii) with the Hollerith Machine (iii) International Test Scoring Machine and (iv) International Business Machine (IBM) Counting Sorter.

For the hand scoring the responses under three categories (Like, Indifference and Dislike) were coded as under.

Like	_/
Indifference	0
Dislike	X

The response categories on each item for each scale had been tallied accordingly as they were encircled on response sheets under the headings of like, indifference and dislike. This was done for both educational scales of criterion group as well as for the general group of Pilot study to obtain the frequencies on three categories for each item. The results in frequencies were converted into percentages, thus automatically expressing the population of each group as 100, giving a semi-equilized table. (Refer Table - 10 for criterion score in percentages).

Strong (1964) has described four scoring systems to measure an occupational interest to be recognized under percentage system of scoring :

I Scoring based upon differences in responses of a criterion group and men-in-general group.

(a) Weights equal the differences expressed in percentages.

(b) Weights derived from kelley's formula (Regular system)

II Scoring based upon responses of criterion group alone.

(a) Weights equal the percentage of response to each item by the criteriorn group (Percentage system).

(b) Percentage weights reduced on some basis to weights ranging from 1 to 9, thus making them comparable in size to the ± 4 range in IB.

In the percent study percentage system of scoring based on differences in responses of a criterion group and norm group was employed to obtain the differential weights on interest items, which will be reported in the next chapter.

3.12 Analysis

Various statistical indices such as frequency distribution, percentages, meanscores were calculated to describe the interest preferences on L, I, D made by the students for ten various disciplines and the criterion scores.

The Chi-square technique was employed to test the significant difference in interests among boys, girls, urban and rural students to indicate discrimination among groups.

The chart method by strong was employed to determine the scoring weights for development of keys for each item under the ten fields of education. Mean, standard deviations and standard scores of norm group (men-in-general) were computed to establish norms. Inter-correlations on ten educational scales were also obtained to establish the internal validity of the construct.

TABLE - 10 (A)

Criterion Score of Men In Education

(Agriculture)

CODE NO.	L	I	D	CODE NO.	L	I	D
	OCCUPATIONS			171	76	24	-
1	100	-	-	181	76	12	12
11	68	24	8	191	76	20	4
21	72	24	4		PEOPLE		
31	72	16	12	201	96	4	-
41	92	8	-	211	72	20	8
	SCHOOL SUBJECTS			221	76	12	12
51	92	4	4	231	76	8	16
61	48	32	20	241	88	8	4
71	64	20	16		SITUATIONS (Left)	(Neutral)	(Right)
81	64	32	4	251	56	28	16
91	56	36	8	252	28	12	60
	CURRICULAR ACTIVITIES			253	44	28	28
101	64	28	8	254	44	28	28
111	60	28	12	255	48	28	24
121	68	28	4	256	32	20	48
131	88	8	4	257	44	24	32
141	72	20	8	258	12	16	72
	RECREATION			259	88	4	8
151	64	24	12	260	76	16	8
161	64	24	12	261	40	36	24

CODE NO.	L	I	D	CODE NO.	L	I	D
262	20	28	52	287	48	28	24
263	16	16	68	288	36	20	44
264	76	16	8	289	64	20	16
265	28	52	20	290	64	24	12
266	68	24	8	291	64	20	16
267	44	24	32	292	36	44	20
268	44	36	20	293	44	20	36
269	40	16	44	294	52	32	16
270	44	20	36	295	76	16	8
271	16	40	44	296	84	4	12
272	28	24	48	297	84	8	8
273	40	24	36	298	80	12	8
274	52	16	32	299	76	16	8
275	76	16	8	300	68	24	8
276	32	28	40		PERSONALITY (YES)	(?)	(NO)
277	76	8	16	301	56	28	16
278	64	20	16	302	80	12	8
279	64	16	20	303	60	36	4
280	76	4	20	304	28	36	36
281	80	16	4	305	92	8	-
282	60	28	12	306	48	24	28
283	32	44	24	307	52	32	16
284	52	20	28	308	44	24	32
285	44	36	20	309	76	20	4
286	48	36	16	310	84	12	4

CODE NO.	L	I	D	CODE NO.	L	I	D
311	76	8	16	319	72	16	12
312	80	8	12	320	60	32	8
313	76	20	4	321	68	24	8
314	68	12	20	322	72	20	8
315	68	20	12	323	80	8	12
316	84	8	8	324	92	8	-
317	48	36	16	325	92	4	4
318	24	56	20				

TABLE - 10 (B)

Criterion Score of Men In Education

(Arts)

CODE NO.	L	I	D
	OCCUPATIONS		
2	70	30	-
12	65	35	-
22	55	40	5
32	50	25	25
42	55	25	20
	SCHOOL SUBJECTS		
52	45	45	10
62	50	25	25
72	45	25	30
82	90	10	-
92	70	25	5
	CURRICULAR ACTIVITIES		
102	70	30	-
112	75	20	5
122	70	30	-
132	85	15	-
142	65	25	10
	RECREATION		
152	75	25	-
162	45	40	15
172	45	40	15
182	85	10	5
192	80	20	-
	PEOPLE		
202	50	35	15
212	50	35	15
222	75	15	10
232	55	25	20
242	65	15	20
	SITUATIONS		
	(Left)	**(Neutral)**	**(Right)**
251	50	40	10
252	45	25	30
253	45	35	20
254	45	30	25
255	40	40	20
256	30	30	40
257	40	25	35
258	70	10	20
259	75	10	15
260	35	45	20
261	5	40	55

CODE NO.	L	I	D	CODE NO.	L	I	D
262	10	35	55	287	35	35	30
263	90	10	-	288	70	10	20
264	10	60	30	289	55	20	25
265	70	20	10	290	80	10	10
266	55	25	20	291	35	35	30
267	30	40	30	292	60	25	15
268	30	25	45	293	60	15	25
269	45	25	30	294	50	30	20
270	25	65	10	295	80	15	5
271	10	25	65	296	80	15	5
272	30	20	50	297	50	10	40
273	35	60	5	298	85	15	-
274	60	15	25	299	70	30	-
275	45	30	25	300	30	30	40
276	40	25	35		PERSONALITY (YES)	(?)	(NO)
277	55	35	10	301	70	10	20
278	90	5	5	302	75	15	10
279	85	10	5	303	85	10	5
280	75	25	-	304	20	50	30
281	70	20	10	305	60	20	20
282	15	30	55	306	50	50	-
283	45	25	30	307	45	40	15
284	30	10	60	308	40	45	15
285	40	35	25	309	85	10	5
286	40	40	20	310	90	5	5

CODE NO.	L	I	D	CODE NO.	L	I	D
311	80	5	15	319	80	20	-
312	65	10	25	320	65	30	5
313	55	35	10	321	75	15	10
314	45	55	-	322	55	10	35
315	55	40	5	323	45	45	10
316	85	5	10	324	75	5	20
317	50	45	5	325	75	15	10
318	60	30	10				

TABLE - 10 (C)

Criterion Score of Men In Education

(Commerce)

	CODE NO.	L	I	D	CODE NO.	L	I	D
A		OCCUPATIONS			173	85	10	5
	3	85	10	5	183	65	25	10
	13	80	10	10	193	60	35	5
	23	55	25	20		PEOPLE		
	33	80	20	-	203	80	20	-
	43	60	40	-	213	85	15	-
		SCHOOL SUBJECTS			223	65	25	10
	53	50	45	5	233	50	30	20
	63	65	30	5	243	80	15	5
	73	85	5	10		SITUATIONS (Left)	(Neutral)	(Right)
	83	45	35	20	251	50	35	15
	93	75	15	10	252	25	30	45
		CURRICULAR ACTIVITIES			253	15	50	35
	103	100	-	-	254	35	40	25
	113	70	25	5	255	45	40	15
	123	65	30	5	256	35	30	35
	133	65	25	10	257	60	25	15
	143	80	15	-	258	-	35	65
		RECREATION			259	90	10	-
	153	85	15	-	260	90	10	-
	163	85	-	15	261	45	50	5

CODE NO.	L	I	D	CODE NO.	L	I	D
262	10	55	35	287	45	40	15
263	20	40	40	288	50	35	15
264	85	10	5	289	75	20	5
265	40	55	5	290	50	35	15
266	55	35	10	291	50	25	25
267	45	55	-	292	65	35	-
268	20	60	20	293	50	35	15
269	55	35	10	294	65	30	5
270	40	30	30	295	45	25	30
271	25	50	25	296	90	5	5
272	25	40	35	297	90	-	10
273	45	40	15	298	70	15	15
274	60	35	5	299	85	-	15
275	45	45	10	300	75	20	5
276	25	50	25		PERSONALITY (YES)	(?)	(NO)
277	65	15	20	301	90	10	-
278	70	25	5	302	80	10	10
279	70	25	5	303	65	30	5
280	75	25	-	304	20	35	45
281	85	10	5	305	75	25	-
282	65	35	-	306	10	50	40
283	10	40	50	307	45	30	25
284	40	45	15	308	50	40	10
285	35	50	15	309	60	30	10
286	60	25	15	310	65	20	15

CODE NO.	L	I	D	CODE NO.	L	I	D
312	80	10	10	320	45	25	30
313	50	35	15	321	55	25	20
314	45	55	-	322	65	25	10
315	80	20	-	323	90	10	-
316	80	20	-	324	70	15	15
317	65	25	10	325	95	-	5
318	40	55	5				

TABLE - 10 (D)

Criterion Score of Men In Education

(Fine-Arts)

CODE NO.	L	I	D
	OCCUPATIONS		
4	80	8	12
14	56	16	28
24	40	20	40
34	48	12	40
44	72	24	4
	SCHOOL SUBJECTS		
54	88	8	4
64	76	16	8
74	80	12	8
84	88	8	4
94	84	12	4
	CURRICULAR ACTIVITIES		
104	76	24	-
114	60	28	12
124	92	4	4
134	64	36	-
144	92	4	4
	RECREATION		
154	84	12	4
164	80	20	-
174	76	12	12
184	80	12	8
194	72	24	4
	PEOPLE		
204	84	16	-
214	68	28	4
224	72	24	4
234	72	20	8
244	80	20	-
	SITUATIONS		
	(Left)	(Neutral)	(Right)
251	24	28	48
252	44	20	36
253	56	32	12
254	8	40	52
255	12	48	40
256	60	16	24
257	48	24	28
258	24	28	48
259	80	12	8
260	72	16	12
261	24	48	28

CODE NO.	L	I	D	CODE NO.	L	I	D
262	16	32	52	287	88	8	4
263	16	32	52	288	56	32	12
264	68	12	20	289	60	32	8
265	20	40	40	290	68	24	8
266	60	20	20	291	40	40	20
267	44	36	20	292	44	40	16
268	40	48	12	293	40	44	16
269	32	24	44	294	36	32	32
270	24	64	12	295	56	12	48
271	24	56	20	296	80	20	-
272	40	44	16	297	84	16	-
273	20	52	28	298	56	16	28
274	56	36	8	299	80	16	4
275	56	28	16	300	72	24	4
276	20	56	24		PERSONALITY (YES)	(?)	(NO)
277	44	40	16	301	52	28	20
278	48	44	8	302	84	4	12
279	72	28	-	303	44	40	16
280	72	28	-	304	32	32	36
281	76	20	4	305	84	8	8
282	64	32	4	306	24	32	44
283	16	32	52	307	52	32	16
284	12	60	28	308	44	36	20
285	36	36	28	309	68	28	4
286	44	40	16	310	68	16	16

CODE NO.	L	I	D	CODE NO.	L	I	D
311	64	28	8	319	76	24	-
312	48	36	16	320	52	36	12
313	56	24	20	321	76	16	8
314	60	28	12	322	88	12	-
315	68	28	4	323	68	20	12
316	76	12	12	324	84	12	4
317	56	32	12	325	76	16	8
318	52	28	20				

TABLE - 10 (E)

Criterion Score of Men In Education

(Home-Science)

CODE NO.	L	I	D
	OCCUPATIONS		
5	80	15	5
15	60	30	10
25	60	25	15
35	65	25	10
45	65	15	20
	SCHOOL SUBJECTS		
55	40	45	15
65	40	35	25
75	80	20	-
85	55	35	10
95	70	15	15
	CURRICULAR ACTIVITIES		
105	70	25	5
115	80	10	10
125	70	15	15
135	75	15	10
145	85	5	10
	RECREATION		
155	95	5	-
165	90	10	-
175	60	30	10
185	70	15	15
195	65	35	-
	PEOPLE		
205	50	50	-
215	95	5	-
225	95	-	5
235	95	-	5
245	65	35	-
	(Left)	**SITUATIONS (Neutral)**	**(Right)**
251	35	25	40
252	15	50	35
253	20	55	25
254	60	25	15
255	50	15	35
256	20	40	40
257	5	45	50
258	65	20	15
259	-	-	100
260	15	25	60
261	-	55	45

CODE NO.	L	I	D	CODE NO.	L	I	D
262	80	10	10	287	10	15	75
263	70	15	15	288	30	25	45
264	-	35	65	289	-	25	75
265	10	65	25	290	15	15	70
266	-	35	65	291	-	60	40
267	15	15	70	292	15	35	50
268	55	35	10	293	10	10	80
269	40	35	25	294	55	35	10
270	20	60	20	295	20	25	55
271	5	80	15	296	-	-	100
272	40	25	35	297	-	10	90
273	15	50	35	298	15	10	75
274	15	50	35	299	-	-	100
275	10	15	75	300	15	25	60
276	55	25	20		PERSONALITY (YES)	(?)	(NO)
277	20	20	60	301	40	45	15
278	15	20	65	302	65	30	5
279	-	30	70	303	65	30	5
280	-	15	85	304	50	30	20
281	-	10	90	305	85	10	5
282	10	35	55	306	25	50	25
283	50	30	20	307	70	20	10
284	10	75	15	308	70	10	20
285	40	25	35	309	60	25	15
286	25	45	30	310	95	5	-

CODE NO.	L	I	D	CODE NO.	L	I	D
311	80	10	10	319	85	15	-
312	70	15	15	320	65	25	10
313	75	10	15	321	70	20	10
314	70	25	5	322	80	5	15
315	65	30	5	323	90	10	-
316	85	10	5	324	80	15	5
317	55	30	15	325	90	10	-
318	35	50	15				

TABLE - 10 (F)

Criterion Score of Men In Education

(Medicine)

CODE NO.	L	I	D
	OCCUPATIONS		
6	45	25	30
16	65	30	5
26	35	25	40
36	40	35	25
46	55	20	25
	SCHOOL SUBJECTS		
56	90	10	-
66	50	30	20
76	60	30	10
86	45	20	35
96	45	25	30
	CURRICULAR ACTIVITIES		
106	85	15	-
116	45	25	30
126	60	30	10
136	85	15	-
146	55	30	15
	RECREATION		
156	80	10	10
166	75	15	10
176	75	20	5
186	65	30	5
196	50	25	25
	PEOPLE		
206	90	5	5
216	90	10	-
226	80	20	-
236	75	25	-
246	55	30	15
	SITUATIONS (Left)	(Neutral)	(Right)
251	55	20	25
252	30	35	35
253	60	10	30
254	25	20	55
255	20	40	40
256	80	20	-
257	35	20	45
258	45	5	50
259	100	-	-
260	85	10	5
261	35	45	20

CODE NO.	I.	I	D	CODE NO.	I.	I	D
262	20	5	75	287	70	15	15
263	20	10	70	288	70	15	15
264	65	25	10	289	75	10	15
265	35	35	30	290	55	40	5
266	65	20	15	291	35	20	45
267	45	30	25	292	60	20	20
268	35	40	25	293	40	40	20
269	55	20	25	294	55	20	25
270	25	65	10	295	35	20	45
271	30	50	20	296	75	10	15
272	10	25	65	297	80	5	15
273	25	25	50	298	65	5	30
274	45	50	5	299	80	15	5
275	90	-	10	300	90	5	5
276	20	30	50		PERSONALITY (YES)	(?)	(NO)
277	35	40	25	301	40	10	50
278	65	30	5	302	80	10	10
279	90	5	5	303	75	15	10
280	90	10	-	304	50	15	35
281	85	10	5	305	85	10	5
282	45	35	20	306	55	25	20
283	20	35	45	307	60	25	15
284	20	45	35	308	40	30	30
285	15	55	30	309	70	20	10
286	40	30	30	310	80	10	10

CODE NO.	L	I	D	CODE NO.	L	I	D
311	75	15	10	319	70	25	5
312	65	10	25	320	40	30	30
313	60	25	15	321	80	15	5
314	65	20	15	322	85	10	5
315	75	10	15	323	75	10	15
316	70	5	25	324	80	-	20
317	45	40	15	325	80	10	10
318	40	35	25				

TABLE - 10 (G)

Criterion Score of Men In Education

(Performing Arts)

CODE NO.	L	I	D	CODE NO.	L	I	D
	OCCUPATIONS			177	80	20	-
7	68	16	16	187	60	40	-
17	60	20	20	197	80	10	10
27	68	24	8		PEOPLE		
37	48	28	24	207	80	10	10
47	52	36	12	217	80	-	20
	SCHOOL SUBJECTS			227	80	10	10
57	92	4	4	237	100	-	-
67	64	24	12	247	80	10	10
77	32	44	24		SITUATIONS (Left)	(Neutral)	(Right)
87	88	8	4	251	20	40	40
97	64	20	16	252	20	80	-
	CURRICULAR ACTIVITIES			253	20	80	-
107	68	16	16	254	-	-	100
117	84	16	-	255	-	80	20
127	56	36	8	256	100	-	-
137	44	40	16	257	-	80	20
147	56	44	-	258	20	80	-
	RECREATION			259	100	-	-
157	60	20	20	260	60	40	-
167	80	20	-	261	60	40	-

CODE NO.	L	I	D	CODE NO.	L	I	D
262	-	80	20	287	80	10	10
263	-	20	80	288	100	-	-
264	100	-	-	289	60	40	-
265	-	80	20	290	60	30	10
266	60	40	-	291	20	60	20
267	20	40	40	292	80	20	-
268	-	40	60	293	20	70	10
269	20	40	40	294	100	-	-
270	60	40	-	295	100	-	-
271	-	80	20	296	80	20	-
272	10	80	10	297	40	40	20
273	-	60	40	298	80	20	-
274	20	60	20	299	60	20	20
275	40	60	-	300	80	10	10
276	60	10	30		PERSONALITY (YES)	(?)	(NO)
277	80	20	-	301	60	20	20
278	80	-	20	302	40	60	-
279	20	80	-	303	80	20	-
280	100	-	-	304	20	80	-
281	20	-	80	305	100	-	-
282	80	20	-	306	80	20	-
283	80	20	-	307	100	-	-
284	100	-	-	308	-	40	60
285	100	-	-	309	40	60	-
286	80	10	10	310	20	60	20

CODE NO.	L	I	D	CODE NO.	L	I	D
311	60	40	-	319	60	10	30
312	40	40	20	320	-	40	60
313	60	40	-	321	50	20	30
314	80	20	-	322	100	-	-
315	20	40	40	323	80	20	-
316	40	-	60	324	-	20	80
317	60	10	30	325	40	60	-
318	-	40	60				

TABLE - 10 (H)

Criterion Score of Men In Education

(Science)

CODE NO.	L	I	D
	OCCUPATIONS		
8	65	30	5
18	75	15	10
28	85	15	-
38	70	20	10
48	40	50	10
	SCHOOL SUBJECTS		
58	70	20	10
68	50	15	35
78	60	25	15
88	60	25	15
98	100	-	-
	CURRICULAR ACTIVITIES		
108	80	20	-
118	70	20	10
128	65	30	5
138	65	30	5
148	55	30	15
	RECREATION		
158	80	15	5
168	60	30	10
178	65	20	15
188	65	25	10
198	70	15	15
	PEOPLE		
208	70	15	15
218	75	25	-
228	80	15	5
238	85	10	5
248	65	35	-
	SITUATIONS (Left)	(Neutral)	(Right)
251	40	40	20
252	55	40	5
253	55	45	-
254	10	40	50
255	25	30	45
256	35	40	25
257	55	25	20
258	15	40	45
259	80	20	-
260	80	15	5
261	45	50	5

CODE NO.	L	I	D	CODE NO.	L	I	D
262	10	35	55	287	80	15	5
263	25	30	45	288	40	20	40
264	95	5	-	289	55	30	15
265	15	80	5	290	75	15	10
266	65	30	5	291	60	25	15
267	50	40	10	292	60	30	10
268	25	40	35	293	60	20	20
269	15	35	50	294	20	60	20
270	20	50	30	295	50	5	45
271	45	45	10	296	100	-	-
272	25	35	40	297	95	5	-
273	15	40	45	298	50	30	20
274	30	60	10	299	85	15	-
275	65	35	-	300	75	25	-
276	30	35	35		PERSONALITY (YES)	(?)	(NO)
277	55	25	20	301	65	30	5
278	60	35	5	302	80	20	-
279	90	10	-	303	70	20	10
280	80	20	-	304	35	45	20
281	95	5	-	305	80	20	-
282	45	55	-	306	35	45	25
283	15	30	55	307	65	25	10
284	20	55	25	308	70	20	10
285	45	35	20	309	75	25	-
286	50	40	10	310	80	15	5

CODE NO.	L	I	D	CODE NO.	L	I	D
311	80	10	10	319	75	20	5
312	85	-	15	320	45	35	20
313	65	30	5	321	80	20	-
314	40	35	25	322	80	15	5
315	75	20	5	323	80	10	10
316	85	10	5	324	90	10	-
317	40	30	30	325	75	15	10
318	60	35	5				

TABLE - 10 (I)

Criterion Score of Men In Education

(Social Work)

CODE NO.	L	I	D
	OCCUPATIONS		
9	60	32	8
19	60	20	20
29	60	24	16
39	64	20	16
49	56	20	24
	SCHOOL SUBJECTS		
59	68	16	16
69	68	12	20
79	64	28	4
89	76	20	4
99	68	24	8
	CURRICULAR ACTIVITIES		
109	64	28	4
119	88	12	-
129	80	20	-
139	68	24	8
149	56	32	12
	RECREATION		
159	76	16	8
169	56	32	12
179	68	24	8
189	64	32	4
199	72	20	8
	PEOPLE		
209	68	24	8
219	68	28	4
229	76	8	16
239	76	24	-
249	68	16	16
	SITUATIONS (Left)	(Neutral)	(Right)
251	20	28	52
252	56	28	16
253	48	40	12
254	8	16	76
255	48	32	20
256	84	16	-
257	52	36	12
258	12	28	60
259	72	20	8
260	52	36	12
261	48	36	16

CODE NO.	L	I	D	CODE NO.	L	I	D
262	16	32	52	287	60	40	-
263	24	12	64	288	44	24	32
264	80	12	8	289	64	24	12
265	16	60	24	290	72	20	8
266	84	8	8	291	44	48	8
267	52	28	20	292	44	32	24
268	16	36	48	293	68	20	12
269	12	24	64	294	40	36	24
270	28	60	12	295	60	20	20
271	24	64	12	296	92	4	4
272	-	20	80	297	96	4	-
273	28	32	40	298	60	20	20
274	36	52	12	299	80	16	4
275	56	32	12	300	68	32	-
276	52	24	24		PERSONALITY (YES)	(?)	(NO)
277	40	44	16	301	68	20	12
278	44	48	8	302	80	16	4
279	76	16	8	303	76	20	4
280	84	12	4	304	40	20	40
281	84	16	-	305	80	16	4
282	64	36	-	306	12	48	40
283	12	40	48	307	60	20	20
284	24	60	16	308	76	16	8
285	20	48	28	309	60	24	16
286	20	52	28	310	88	8	4

CODE NO.	L	I	D	CODE NO.	L	I	D
311	76	16	8	319	80	12	8
312	68	16	16	320	76	20	4
313	60	24	16	321	84	8	8
314	56	32	12	322	80	16	4
315	80	16	4	323	92	8	-
316	72	20	8	324	88	4	8
317	56	36	8	325	56	32	12
318	40	28	32				

TABLE - 10 (J)

Criterion Score of Men In Education

(Technology & Engineering)

CODE NO.	L	I	D
	OCCUPATIONS		
10	64	12	24
20	68	24	8
30	60	32	8
40	52	20	28
50	72	8	20
	SCHOOL SUBJECTS		
60	84	-	16
70	72	12	16
80	68	12	20
90	84	4	12
100	72	4	24
	CURRICULAR ACTIVITIES		
110	52	32	16
120	72	16	12
130	72	20	8
140	88	12	-
150	84	4	12
	RECREATION		
160	48	24	28
170	72	16	12
180	48	28	24
190	52	20	28
200	76	-	24
	PEOPLE		
210	44	32	24
220	36	36	28
230	64	24	12
240	52	16	32
250	68	24	8
	SITUATIONS (Left)	(Neutral)	(Right)
251	76	16	8
252	68	20	12
253	56	24	20
254	24	28	48
255	48	32	20
256	52	32	16
257	28	40	32
258	8	28	64
259	80	16	4
260	84	12	4
261	56	36	8

CODE NO.	L	I	D	CODE NO.	L	I	D
262	16	36	48	287	68	20	12
263	8	16	76	288	72	12	16
264	76	16	8	289	60	32	8
265	12	48	40	290	64	16	20
266	72	28	-	291	76	8	16
267	32	24	44	292	68	20	12
268	36	52	12	293	64	28	8
269	40	12	48	294	24	48	28
270	32	44	24	295	72	12	16
271	20	36	44	296	84	12	4
272	28	8	64	297	88	8	4
273	32	24	44	298	36	8	56
274	64	32	4	299	84	4	12
275	64	20	16	300	56	24	20
276	36	28	36		PERSONALITY (YES)	(?)	(NO)
277	76	20	4	301	72	16	12
278	64	28	8	302	56	28	16
279	88	8	4	303	76	20	4
280	80	4	16	304	32	36	32
281	88	12	-	305	76	12	12
282	76	12	12	306	36	12	52
283	16	28	56	307	52	28	20
284	36	48	16	308	44	16	40
285	40	32	28	309	72	20	8
286	44	20	36	310	72	24	4

CODE NO.	L	I	D	CODE NO.	L	I	D
311	72	24	4	319	56	28	16
312	68	24	8	320	72	12	16
313	64	16	20	321	72	8	20
314	52	36	12	322	88	12	-
315	72	20	8	323	76	20	4
316	28	52	20	324	72	20	8
317	64	24	12	325	76	8	16
318	80	16	4				

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