CHAPTER VI

CONSTRUCTION OF THE INSTRUMENTS: A THEORETICAL FRAME-WORK

A variety of techniques is used for measuring interest because of its various dimensions. As discussed earlier, interest may involve cognition, affection and conation at different levels. As such, the investigator feels justified in including in his test battery, different types of tests designed to cover the various aspects of interests. In addition to questionnaires, she has attempted to have also objective measures based on direct observations of reactions of the subjects by devising information and other situational tests including projective types of tests. The following background is assumed in developing materials for interest tests:

(1) The cognitive processes of perception, selection and discrimination could be involved.

(2) The element of feeling should also be aroused by the situation.

(3) The classes of objects and ideas forming the stimuli should be presented so as to evoke a conative element of actual participation in certain activities in preference to others. The investigator is conscious of the fact that these aspects of interest measurements are by no means comprehensive. It has been recently proposed by Bharadwaj(1) that there exists twenty hypotheses having a bearing on the theory of interests. All these suggest measures both in the sphere of overt behaviour and feelings of interest by means of short measuring x instruments.

Rationale of the Tests

The construction of the instruments was guided mainly by the pragmatic approach although it was quite understood that no single instrument is free from limitations. That every aspect has to be covered was taken into consideration while evolving the test battery. This is why various approaches have been made to the assessment of interest from different points of view. For example, in the first subtest the traditional approach was made to

1 Bharadwaj, S.B.L.: "Vocational Interest Patterns of Prospective Teachers of Higher Secondary Schools in Uttar Pradesh", Ph.D. Thesis, 1959, Lucknow University.

assess interest at the cognitive level and the limitation of the forced choice technique was partly reduced by keeping it open-ended. Any assessment is rather delicate particularly at the affective level and it is extremely difficult to attack that level by means of a paper and pencil tests of traditional type. A new approach has been made in the form of a projective test in the line of Cattell's "How much how many" embodied in the SMAT (1a). One might be sceptical about the efficacy of such a test, but there is adequate research evidence in support of a projective test for the measurement of personality. Providing a seven point scale for projection by means of speculation is, of course, deliberate for the sake of uniformity and practical convenience in scoring.

For measurement of interest at conative level, however, a new technique was evolved in the form of news items for getting to know preferences in reading. This test has been built up in the form of a situational test presenting pairs of items for forced choice. That one's interest finds its expression through choice of reading materials is the main consideration behind the construction of the test. Although new in this field, this appears to be worth trying as a technique for attacking a different level. Inspite of its reference

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1a Cattell, R.B., et. al.: "SMAT" Published by Institute of Personality and Ability Testing, Illinois, U.S.A.,1961.

to culture context the basic approach remains justifiable.

Ability tests differ from interest assessment considerably and the difference lies in the fact that in interest assessment one is not concerned with the quality of the performance. There is no right or wrong answer in interest test. Thus, in all these three tests account was taken of the preferences of one type of activity or occupation in relation to others. The fourth test, however, was different from all the three in the sense that it partly measured one's knowledge or information of certain special areas or objects or ideas. The main criticism against such a test is that one is not sure as to what extent this is measuring interest. As an advocate of such an instrument one could easily cite so many cases where information tests have been used for measurement of interests. In fact, such a test is more objective and strongly supported by the consideration that one's keeping specific information or meeting the curiosity is prompted by his interest in the particular field. This not only gives an indication of one's interest, it also bespeaks the degree of one's involvement in the area of interest.

In short, the techniques adopted in this investigation for measuring interests consisted of the following:

(1) Inventory

(2) Projective device (How much how many test)

(3) Information test

(4) Situational test demanding participation in reading material.

The questionnaire method involves a series of questions combined into a single measuring scale. But one should first discuss the justification for believing that responses to a few questions will faithfully reflect one's feelings disposition or traits. In general, alternative choices in different forms are supplied and the subject's response to a statement at its face value is treated as an index of his actual characteristics under similar circumstances. When an individual acts in a consistent manner on different occasions, it means that groups of stimuli presented on these occasions have the same significance for him. This fundamental fact forms a basis of Allport's assumption of generalized tendencies within the organism which he described, in short, as traits.Cattell's view of traits is also similar as in his opinion, a trait is nothing but a collection of reactions or responses bound by some kind of unity which permits the responses to be gathered under one term and treated in the same fashion for most purposes.

Construction of the Questionnaire or Inventory (Sub-Test No. 1)

This questionnaire was constructed for the purpose of selecting information about how they spend their time, money, in different situations or what they prefer to read, to listen to or to visit. It was expected that the response to a number of situations on the basis of past experience or anticipated reactions would reveal their patterns of interests or values in various interest areas. It has, therefore, been considered that different situations should be presented for eliciting responses in the form of preferences. Under each situation some alternatives have been placed at the disposal of the subjects so that they can make the choice. Forced or multiple choice have been tried out by 'Kuder' and 'Strong' as well for measurement of interests, but the tests have been exposed to a number of criticisms on the ground that (2) there is an element of authoritarianism in the basic principle underlying the test construction. The subject is not allowed any freedom to express his preferences even ignoring the alternatives provided. This is why in our present test a column "Any other....." has been provided for obtaining the free response of the

2 Heim, A.W. and Watts, K.P. "The Brook Reaction Test of Interests", British Journal of Psychology, May, 1966, Vol.57 (Parts I and II), pp. 171-185.

subject in case he does not find any of the alternatives upto his choice. It is rather difficult to overlook the fact that the test could not completely do away with the limitations of the previous tests of Strong and Kuder as the subject is not allowed to place equal weightages or values to the items presented. This was not possible because of the complications peeping in the principle of scoring. So far as the free responses allowed under the column "Any other....." there has been a need for classifying them under any of the six interest areas. When, however, the responses do not come under any category then there is no alternative but to treat them as irrelevant for our purpose. The original test contains 20 groups of items, each group covering all the six areas of interest.

For example:

(14) I prefer visit to.....

- a farm ( )
- a machine tool factory ( )
- a commercial exhibition ( )
- an art gallery ( )
- a national library ( )
- a science laboratory ( )
- any other.....

(19) I would like to select books on.....

- literature ( )
- economic problems ( )
- modern art ( )
- farming ( )
- scientific inventions ( )
- construction and uses of tools ( )
- any other.....

Interest Sub-Test: 1

(Original)

The Arrangement and Distribution of Items

Item No.	Interest					
	F	T	C	A	H	Sc
1	a	d	b	c	e	f
2	c	d	e	f	b	a
3	b	e	f	d	a	c
4	a	f	c	d	e	b
5	a	c	f	e	b	d
6	e	c	f	d	(a)	b
7	a	b	f	d	e	c
8	a	e	d	b	f	c
9	b	a	d	c	e	f
10	a	b	c	d	e	f

Item No.	F	T	C	A	H	Sc
11	b	e	d	f	a	c
12	b	a	f	e	c	d
13	a	c	d	f	b	e
14	b	f	c	a	d	e
15	a	d	f	b	c	e
16	a	c	d	e	b	f
17	a	c	e	f	b	d
18	(a)	e	(f)	c	b	d
19	a	e	d	f	c	b
20	d	f	c	e	a	b

N.B.: The items in brackets proved insignificant, owing to poor validity (chi-square) values.

Administration and Scoring

Inspite of the written directions at the top, it was considered to get things clarified by means of standardized instructions. Although no time limit is fixed up for completion of entire test, the subject is expected to finish it as soon as possible without much inhibition for the sake of obtaining spontaneous response to each item.

The scoring principle has been determined on an

ad hoc basis and it was decided that the subject would receive '1' as a score for each item tickmarked as an indication of their choice. The scoring is, of course, deliberate for arriving at the estimate of one's relative standing on various fields of interests.

Sub-Test 2 "Situational Test"

The construction of this test was guided by the consideration that the students' interests is reflected through his choice of reading material in the form of news items pertaining to different fields of interests presented in different combinations in 30 pairs. Thus, 60 items comprised the situational test and 10 items were designed to tap each interest area. For example, the subject is asked to choose one of the items in each pair under the following headings:

(a). Music Academy in Goa urged:

The Goan Patriots through an
organization of Goan freedom fighters
urged Goa Government to establish
an academy of music and art on
the line of Shantiniketan to teach both

eastern and western music styles. The academy would definitely promote art and encourage artistic pursuits.

(b) Machines which Protect Earth

> An anti-erosion machine, developed by some engineers, does simultaneously two jobs. The machine is designed for planting trees on steep slopes. It digs trenches and leaves behind small mounds of earth and furrows in which water from melting snow and rain collects. Such an anti-erosion system helps to fix the surface layer.

The items have been collected from the newspapers and their relevance determined against some criteria like the area of interest, language used and the size of the

item. Attempt has been made to keep the size of the items almost uniform, so as to control this factor to a considerable extent. Even the arrangement of the items has to be balanced so as to guard against the possibility of their choice being guided by the order of the item.

Sub-Test No. 2

(Original)

The Arrangement and Distribution of Items

Group	Item No.		Respective Areas of Interest Covered
1	1a	1b	Fine Arts - Technical
2	(2a)	2b	Humanities - Science
3	(3a)	3b	Technical - Humanities
4	4a	4b	Fine Arts - Commerce
5	(5a)	5b	Agriculture - Science
6	6a	6b	Technical - Fine Arts
7	7a	7b	Fine Arts - Agriculture
8	8a	8b	Agriculture - Humanities
9	9a	9b	Fine Arts - Humanities
10	10a	10b	Commerce - Science
11	11a	11b	Commerce - Humanities
12	12a	12b	Technical - Science
13	13a	13b	Technical - Commerce
14	(14a)	14b	Commerce - Agriculture

Group	Item No.		Respective Areas of Interest Covered
15	15a	15b	Agriculture - Science
16	16a	16b	Humanities - Agriculture
17	(17a)	17b	Commerce - Humanities
18	(18a)	18b	Technical - Science
19	19a	19b	Fine Arts - Commerce
20	20a	20b	Humanities - Technical
21	21a	21b	Science - Agriculture
22	22a	22b	Technical - Fine Arts
23	23a	(23b)	Agriculture - Commerce
24	24a	(24b)	Fine Arts - Humanities
25	25a	25b	Humanities - Science
26	26a	26b	Agriculture - Fine Arts
27	27a	27b	Science - Commerce
28	28a	28b	Technical - Agriculture
29	29a	29b	Fine Arts - Science
30	30a	30b	Technical - Commerce

N.B.: The items in brackets proved insignificantm owing to poor validity (chi-square values).

Administration and Scoring

Here also no time limithas been prescribed as it is felt that the subject should first go through the

titles of each pair for making a choice of the particular item before going into details. Thus, the subject has to proceed from item to item after choosing one out of each pair. Moreover, he would be required to underline a few words comprising the item he has chosen to indicate his involvement in the subject matter. For each participation in reading an item designed to measure a specific interest the subject will score '1' in the respective field of interest. This principle of scoring was adopted for simplifying the procedure for scoring and finding out one's relative standing on six main types of interest from the total scores. Each type of interest has been represented ten times by items rotated and arranged in all combinations. The idea is to find out one's preference to one field of interest in relation to other in all possible combinations. Thus, the paired comparison method is considered suitable for spotting out one's interest in relation to others in a more systematic manner.

Sub-Test No. 3

This test has been devised with a view to serving as one of the instruments for assessment of interest on the assumption that one who has greater interest in a particular field would be more alert and curious to know the details about the specific area. This might be

regarded as an indirect measure of one's interest as there is a scope for doubt as to whether the test is measuring interest or ability. This type of testing is nothing very new although not traditional and has been used recently by Peel and others (3). The items used in the present test are in the form of blanks demanding information of certain type which may only be had by those interested in the field. The investigator is, of course, conscious of the fact that the main problem in using an information test is its length and culture saturation. Attempt has been made to reduce the limitations as far as possible by keeping the size handy and at the same time effective. Most of the items demanded one's keen observation and vigilence in respective areas of knowledge. Each area of interest is represented by equal number of items, 'Scattered all through the test'. For example:

(2) The most prominent author of the theory of evolution was.....

(3) There are two kinds of limited firms namely.....and.....

(22) Picasso is.....

(27) A magnet may lose its power to attract after it is.....

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3 Peel, E.A. and Lambert, C.M.: "Assessment of Interest in Practical Topics", British Journal of Educational Psychology, 18, 1948, pp. 41-47.

Sub-Test: 3

(Original)

The Arrangement and Distribution of the Items

	Interest					
Item No.	F	T	C	A	H	Sc
1	(5)	(4)	3	(6)	2	1
2	11	12	8	10	(7)	9
3	15	(14)	13	16	18	(17)
4	22	19	20	24	23	(21)
5	(25)	30	29	28	26	27
6	32	(33)	34	31	35	36
7	40	41	(39)	38	43	37
8	(42)	47	44	45	50	48
9	46	54	(53)	(49)	60	51
10	52	55	59	58	65	57
11	56	62	63	64	72	66
12	61	69	71	(67)	(76)	70
13	68	75	(73)	78	(77)	(74)

N.B.: The items in brackets proved insignificant owing to poor validity (chi-square values).

Administration and Scoring

This is a test framed in simple language with the purpose of exploring interests and not for testing linguistic ability. The subjects were asked not to spend

too much time on an item which they are not sure of and skip over to the next instead of getting stuck. It was also considered desirable to give them an option to write their answers in English, Hindi or Gujarati with a view to helping them to avoid language difficulty.

The subject would score '1' for each correct response in respective area of interest.

Sub-Test No. 4 Projective Test:
"How Much How Many"

This test is rather non-conventional in the sense that this has not been widely used for this purpose. The idea is borrowed from Cattell's (4) SMAT containing a section of this type of test for motivation analysis. The basic consideration underlying the construction of the test is that a person usually reveals his interest while projecting to a stimulus which is ambiguous and where there is no fixed answer. This is why some questions of general nature have been provided and the reactionsto these questions are asked on a seven point scale in terms of percentage. For example:

(5) How many people think that being an artist is a fine career?

(a) 95% (b) 90% (c) 70% (d) 50% (e) 30% (f) 10% (g) 5%.

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4 Cattell, R. B., et. al.: SMAT, op. cit., p. 94.

(12) How much technical education is desired in India?

(a) 95% (b) 90% (c) 70% (d) 50% (e) 30% (f) 10% (g) 5%.

Sub-Test: 4

(Original)

	Interest					
Item No.	F	T	C	A	H	Sc
1	5	4	3	(6)	2	(1)
2	11	12	(8)	10	7	9
3	15	14	13	16	18	17
4	22	19	(20)	23	24	21
5	(25)	30	29	28	26	27
6	32	33	34	(31)	35	(36)
7	40	41	39	38	(42)	37
8	46	47	44	45	43	48
9	52	53	49	54	50	51
10	(56)	55	59	58	60	57
11	61	(62)	63	64	65	66
12	69	(68)	71	67	72	70

N.B.: The items in brackets proved insignificant owing to poor validity (chi-square values).

Administration and Scoring

The subjects would be asked to underline any point of the scale provided which they think appropriate. It is considered to make clear that there is no definite answer in terms of percentage to any question and they are free to speculate according to their own judgment. The scoring principle is, however, deliberate and one might score .2 to 1.4 according to the point of the scale he has marked. One who will underline 5 per cent will obviously score .2 while one underlining 95 per cent will score 1.4, Thus, for each point in the ascending order one would score .2 more at every step.

Another information blank was prepared with a view to collecting personal and environmental data in following respects:

(1) Father's occupation,
(2) Area of residence,
(3) Family tradition,
(4) Parental desire,
(5) Course of studies (Division).

Besides, consideration guiding the choice of the specific course has been included in it as a variable. This has been done with a view to examining its effect on

interests as well as the possible interaction between consideration and a few environmental factors. The blank has been prepared in a simple form and under each item possible alternatives have been provided for eliciting responses under clear cut categories. Construction of items around Father's occupation, Family tradition, and Parental desire was guided by the considerations of the main interest areas, assumed in the present investigation. In case of the item on area of residence five possible categories were kept with a view to bringing out the full implication without any overlap.

The directions as to how to fill up the blanks (on environmental data) emphasised the need for choosing only one alternative every time without any confusion.

Although the data derived would be mainly qualitative in nature, They should be employed for their classification under different categories for finding out the interrelations between each of these variables with interest.

Summary

Any measurement demands certain techniques or instruments for an objective inquiry tests of interest are

varied and techniques employed for subjective study of interest are also quite a few in number. This is because of the complex nature of interest as a variable. Inspite of the wide use of inventory for the assessment of interest, recent trends present on optimistic picture about the possibility of using many other devices for the purpose. It has been felt that interest involves not only the cognitive process of perception, selection and discrimination but it also represents the element of feeling, and its manifestations to certain extent. This is why the need for covering the various dimensions of interest is also being realized for measurement purposes. Among the techniques the objective types of devices like information or situational test show promise inspite of the controversies around the rationale of such tests.