CHAPTER IV

METHOD
The primary aim of the present study was to standardize Personality Questionnaire (by Eysenck and Eysenck, 1978) on students undergoing professional courses. Equal number of subjects were taken from each of the faculties i.e.: Architecture, Arts, Bio-Sciences; Commerce and Business Management, Education, Engineering, Fine Arts, Home-Science, Language, Nursing, Sciences and Social Sciences. The number of subjects in each group were 50 i.e. the total number of subjects being 600.

The questionnaires employed were: Personality Questionnaire (Eysenck and Eysenck, 1978); Eysenck Personality Inventory (Eysenck and Eysenck, 1964); P.E.N. Inventory (Eysenck, 1970); in addition to these - vigilance task; Backward Alphabet writing and Hand Dynamometer (for persistence) were used.

The data was analysed to find means, SDs and intercorrelations. Item-analysis was performed using the point-biserial correlation.

SUBJECTS:

Present sample included 600 subjects drawn equally from the following 12 faculties viz. Architecture,
Arts, Bio-Sciences, Commerce and Business management, Education, Engineering, Fine arts, Home-science, Languages, Nursing, Sciences and Social Sciences (i.e., 50 subjects from each faculty).

**SCORING:**

The questionnaires (i.e., P.I., E.P.I. and P.E.N.) were scored by using the appropriate scoring sheets. The scoring sheet measures each of the dimensions (i.e., P, E, N and L, however, for the E.P.I. we have the scoring sheet for measuring the dimensions - E, N & L). The scoring sheet should be placed over each page with respect to the appropriate questionnaire. When the key lines in the questionnaire are aligned with the corners of the columns on the scoring keys, the form is in a position to be scored by counting one point for each answer which is endorsed in the same direction as that given in the key. The total score is the sum of these points. The scores are entered into the boxes provided in the questionnaire.

The scoring of the backward alphabet writing was done by calculating the number of alphabets written by the subject in each trial. The reminiscence was measured by subtracting the scores of the fifth trial (i.e., pre-rest) from that of the sixth trial (i.e., post-rest).

For the vigilance task, the scoring was done by
calculating the number of seven digits cancelled by the subject per trial the reminiscence was measured by subtracting the number of digits cancelled in the fifth trials from that of the sixth trial (i.e. post-rest and pre-rest).

For the hand dynamometer, the scores were taken on the basis of the persistence of the subject on a particular mark (on the kg mark of the hand dynamometer), the time taken by each subject was noted with the help of stop-watch.

**PROCEDURE:**

All the subjects were personally contracted and requested to volunteer for the testing schedules. Rapport was established with each subject and they were assured that the results and any information they would give would be kept strictly confidential. They were requested to co-operate and answer truthfully.

The testing session was started by asking the subjects to fill the Personality Questionnaire. Later, after a lapse of one month, to establish the reliability, validity and norms of this particular questionnaire - the P.Q., E.P.I., P.E.N. inventory, vigilance task, Backward alphabet writing and the Hand dynamometer were
administered to a sample of 50 subjects from the Commerce and Business Management faculty.

PARADIGM OF THE STUDY:

There was no time limit for the questionnaires used (i.e. P.Q., E.P.I., P.E.N.) although the subjects were requested to answer as quickly as possible. But in the case of vigilance task and Backward Alphabet writing - each subject was required to work for two periods of the duration of 5 minutes and 2 minutes. The two work periods were separated by one minute rest period. Rest was instituted to provide an opportunity for extinction of the most of the inhibition developed during the first work period. Using the hand dynamometer, the level of persistence was studied on the basis of the two-thirds of the maximum pulls.

TESTS AND TOOLS:

(i) Personality Questionnaire (Eysenck and Eysenck, 1978)- Personality Questionnaire (P.Q.) is a development of various earlier personality questionnaires, it differs from the earlier inventories by including an additional scale. It consists of 101 questions. It consists of questions which help to measure the Extraversion, Neuroticism, Psychoticism and Lie-scores of the individual.
The P.Q. has been found to be highly reliable questionnaire. As used by Eysenck and Eysenck (1978) its test-retest reliability has been found to range from .76 (psychoticism), .89 (Extraversion), .90 (Neuroticism and Lie scores). However, the internal consistency has been found to be within the range of .68 to .85.

INSTRUCTIONS:

Subjects were provided with the P.Q. and were asked to write their name, age, sex, faculty (to which they belonged) and family income (monthly) in the respective columns on the top of the Questionnaire. Then, following instructions were read aloud to them:

"Please answer each question by putting a circle around the 'Yes' or 'No' following the question, work quickly and do not think too long about the exact meaning of the question. Please remember to answer each question. The results of the questionnaire will be kept confidential".

(ii) Eysenck Personality Inventory (Eysenck and Eysenck, 1964):

The Eysenck Personality Inventory (E.P.I) is the development of the Maudsley Personality Inventory (M.P.I., Eysenck, 1959a). The E.P.I. consists of 57 items. Out of these nine items help in measuring the lie-scores and twenty four items are used to measure Extraversion and the rest twenty four items are used to measure Neuroticism.
Bhushan (1969) adapted E.P.I. in Hindi and found:

<table>
<thead>
<tr>
<th></th>
<th>Extraversion</th>
<th>Neuroticism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-half Reliability</td>
<td>.78</td>
<td>.69</td>
</tr>
<tr>
<td>Test-Retest Reliability</td>
<td>.73</td>
<td>.76</td>
</tr>
<tr>
<td>Validity</td>
<td>.89</td>
<td>.84</td>
</tr>
</tbody>
</table>

**Instructions**

Instructions printed in the beginning of each copy of E.P.I. were read aloud to the subject viz-a-viz -

"Here are some questions regarding the way you behave, feel and act. After each question is a space for answering 'Yes' or 'No'.

Try to decide whether 'Yes' or 'No' represents your usual way of acting or feeling. Then put a circle around 'Yes' or 'No'. Work quickly and don't spend too much time over any question; we want your first reaction not a long drawn out thought process. The whole questionnaire should not take more than a few minutes. Be sure not to omit any question.

Work quickly and remember to answer every question. There are no right or wrong answers and this is not a test of intelligence or ability but simply, a measure of the way you behave".
(iii) P.E.N. INVENTORY (Eysenck, 1970)

The P.E.N. Inventory consists of 78 questions, out of which, twenty help in measuring psychoticism, twenty for Extraversion, twenty for Neuroticism and eighteen are for lie-scores. Thus this inventory gives a rough and ready measure of the three dimensions of personality—psychoticism, extraversion and neuroticism. The questions can be replied either as 'Yes' or 'No'.

This inventory was first used on a sample of 606 male criminals taken from several of the main British prisons by Eysenck (1970). This inventory was translated into Punjabi by Mohan and Singh (1976) and its reliability and validity was checked. The test-retest reliability was found to be -

<table>
<thead>
<tr>
<th>Psychoticism</th>
<th>Extraversion</th>
<th>Neuroticism</th>
<th>Lie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>.88</td>
<td>.85</td>
<td>.84</td>
</tr>
<tr>
<td>Validity</td>
<td>.97</td>
<td>.91</td>
<td>.99</td>
</tr>
</tbody>
</table>

INSTRUCTIONS

The following instructions printed on top of the P.E.N. inventory, were read aloud to the subjects:
"Please answer each question by putting a circle around the 'Yes' or 'No' following the question. There are no right or wrong answers; and no trick questions work quickly and do not think too long about the exact meaning of the question".

The subjects were asked to answer each question, there was no time limit for the questionnaire.

(iv) VIGILANCE: (Mohan and Malhotra, 1973).

In the present study vigilance was measured through a number cancellation task. A vigilance task involves the detection of signals. Detection rate is usually regarded as the index of vigilance (Davies & Tune, 1970). The test used in the present study consisted of numbers 1 to 9 written randomly on a plain paper. The signal was the digit 7. The subject was required to cancel digit 7 distributed randomly among these numbers. Each subject worked for 5 and 2 minutes respectively separated by a one minute rest period. Performance record was maintained for each minute during the work period. This test has been used successfully by Kapoor, Mohan and Chander (1979). Malhotra (1974); Gill (1979); Mohan (1980); Mohan and Malhotra (1981); Mohan et al. (1981); Meena (1981); Mohan (1982).

INSTRUCTIONS:

The following instructions were given to the subjects:-
"You have been provided with a pen and plain sheets consisting of numbers 1 to 9 printed randomly on a plain sheet. Your task is to cancel digit 7 distributed randomly among these numbers. There will be 5 minutes and 2 minutes work periods interspersed with one minute rest period. After every one minute a check signal will be given, i.e. you have to just put an oblique next to the digit last cancelled (i.e. / ).

Please perform quickly and without making much errors. You have been provided with supplementary sheets so that if you complete cancellation on the first sheet continue your work on the second (and third, if necessary) sheet. The time limit will be checked with the help of a stop watch. A start signal will be given once you are ready to perform the task".

(v) BACKWARD ALPHABET WRITING:

In this task, the subject was required to write English Alphabet in the reverse order, that is starting from Z to A. Plain paper and pen/pencil were used for this purpose. The procedure evolved was five minutes and two minutes work period separated by one minute rest period. Each work period lasted for one minute.

In the present study reminiscence was measured through Backward Alphabet writing task. This has been
earlier used by Heelam (1968); Mohan and Neelam (1969); Mohan and Shashi (1972,1980); Munjal (1972); Mohan and Kumar (1973a; 1973b), Mohan and Mun-jal (1973); Mohan & Dubey (1976); Mohan (1980); Mohan et al. (1981); Meena (1981) and Mohan (1992).

**INSTRUCTIONS:**

The subjects were provided with a plain sheet and a pen and were delivered following instructions:

"You are used to writing the Alphabets as beginning from A and ending with Z. Now you have to adopt a reverse order, i.e. when I say start you have to start writing the alphabet from Z, carry on with Y, X, W and end with A. After finishing it once you have to start writing again from Z and reach A. When a check signal is given, put an oblique ( / demonstrated) next to the alphabet last written and continue your task. The check signal is there merely to denote that a particular trial is over. Continue the task till a stop signal is given, put an oblique after the letter you had written last. Then you will be given rest for one minute. When I say start after one minute's rest interval, continue as before putting an oblique at check signal and stop working when said so. The pre-rest trial is for 5 minutes and the post rest trial is for 2 minutes separated by one minute rest period."
A stop watch will be used to check the time limit. Try to write correctly each and every alphabet and as quickly as possible.

(vi) **HAND DYNAMOMETER**: For measuring the physical persistence hand dynamometer manufactured by C.H. Stoeling Co., Chicago-24, Ill. U. S. A. was used. It consists of a coiled spring which can be compressed by pulling the smaller (inner) stirrup as against the bigger (outer) stirrup. It measures strength in kilograms. The maximum strength it can measure is 100 kgs. Each subject was given three trials of his strength on the hand dynamometer. Inter-trial interval was of 60 seconds. Two thirds of the average strength on three trials was calculated and marked on the dial, the subject was asked to keep the pointer steady at the point for as much time as he could. The time of persistence was measured with a stop watch.

**INSTRUCTIONS:**

Following instructions were delivered to the subjects:

"Handle the hand-dynamometer with your preferred hand, press the grip with maximum strength. When both the pointers will go up then loose your hand grip and put the apparatus on the table, one pointer will remain up, one will come down. This is to know your physical
physical strength, only three chances will be given."

Demonstration was given along with each step of instructions.

After the third trial, subjects were asked to-

"Pull the inner grip and bring the pointer only till the mark placed in front of the kg.no., keep the pointer there without letting it jerk, the moment you loosen the pressure on the inner grip or put more pressure on it, the pointer will jerk. The time of persistence will be noted with the help of a stop-watch, the knob of which will be pressed the moment the pointer jerks even a bit, so try to keep the pointers steady for as long time as you can. In this particular trial, the pointer is placed at a particular point i.e. according to the 2/3rd of the average of the three pulls of the previous test. This is determined according to your physical strength, so don't get nervous about it, do this task with full confidence".

**ITEM-ANALYSIS:**

Item-analysis is the next essential step in the construction of the test, the first being writing and editing of test items. David writes, "The first and fundamentally most important steps in selecting the items for almost any test are taken when an outline is constructed to determine its content and the items are prepared to measure the
skilled abilities tested.

Many statistical techniques have been used to study item validity. Long and Sanford described 21 methods; the most important of which are Biserial correlation, the Vincent method, the McCall Long Bliss technique, Clark's technique, etc. They concluded - "The better technique differ so little in effectiveness that ease of computation may usually be accepted as legitimate consideration in determining which technique to adopt. On the whole Biserial correlation is most recommended (Guilford, 1959).

In order to see the validity of the items, Item-Analysis was conducted on 90 items of the questionnaire. Items devoted to each of the Extraversion, Neuroticism, Psychoticism and lie dimensions were separated and the keyed responses for each of the items were noted. The answers for the respective items were denoted by 1 and 0, 1 for the 'Yes'; and '0' for the 'No'.

Later, Biserial correlation was computed on the data comprising of 120 Ss selected randomly from the total sample.