CHAPTER - IV

METHOD AND PROCEDURE

Design

The design of present study aims at assessing differences in vocational maturity of IX, X and XI class students belonging to Armed Forces personnel as well as Civilians in relation to their personality, differential abilities (intelligence and aptitudes) and academic achievement. The study intends to identify which independent variables out of personality, differential abilities and academic achievement have an effect on vocational maturity (career choice attitudes and career choice competencies total). A factorial design 3 x 2 x 2 of unequal number was also employed to gauge the three levels of classes (IX, X and XI) of the two groups of males and females belonging to Civilians as well as Armed Forces personnel.

Sample

The sample for this study was obtained from two Higher Secondary schools known as Kendriya Vidhyalayas. Children of Armed Forces, Central Government employees and other civilian population are admitted to these schools. In present study, under Armed Forces children of the Indian Army and Air Force personnel were taken, whereas children of persons in the Border Security Force, Central Reserve Police Force and Indian Navy were excluded. Thus present
sample consists of children belonging to two working
categories viz. Civilian and Armed Forces personnel.

To begin with, 1000 students from grade IX, X and XI
between ages 13 and 17 years, were included for the conduct
of study. As the testing progressed, certain students
dropped out. Besides, some of the students had to be
eliminated due to their incomplete answer sheets. The
final sample consisted of 694 students, involving 318
students from IX class, 292 students from X class and 84
students from XI class. The break up of the sample is
presented below:

### TABLE - 1

Showing Distribution of Samples Grade-Wise

<table>
<thead>
<tr>
<th>Grade</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>IX Grade (N = 318)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Civilian (N = 60)</td>
<td>Armed (N = 105)</td>
</tr>
<tr>
<td></td>
<td>X Grade (N = 292)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boys (N = 160)</td>
<td>Girls (N = 132)</td>
</tr>
<tr>
<td></td>
<td>Civilian (N = 60)</td>
<td>Armed (N = 100)</td>
</tr>
<tr>
<td></td>
<td>XI Grade (N = 84)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boys (N = 45)</td>
<td>Girls (N = 39)</td>
</tr>
<tr>
<td></td>
<td>Civilian (N = 15)</td>
<td>Armed (N = 30)</td>
</tr>
</tbody>
</table>

Grand Total = 694
Tools

The selection of tools was based on their suitability to the school sample and their fulfilling vigorous standards of reliability and validity as psychometric instruments. The tools used in the present study are enumerated below:

1. **Career Maturity Inventory - CMI (Crites, 1973)**
   (An Indian Adaptation in Hindi by Chand, 1979)

   The Career Maturity Inventory by Crites (1973) based on Super's Vocational Development Inventory was adapted and standardized on Indian population by Chand (1979). Career Maturity Inventory is a group test. Chand (1979) and Saxena (1984) found CMI to be valid and reliable test for the Indian population. To assess the vocational behaviour, as a person grows up during career choice maturing years, the CMI provides two types of measures: - (a) Attitude Scale and (b) Competence Test.

   a) **Attitude Scale**

   Attitude Scale was constructed to elicit feelings, subjective reactions and dispositions which an individual has towards making a career choice. Attitude Scale of Crites (1973) adapted by Chand (1979) has following five attitudinal clusters, (i) Involvement in the Career choice process; (ii) Orientation toward work; (iii) Independence in decision making; (iv) Preference for Career choice factors; and (v) Conception of the Career choice process. Attitude Scale consists of fifty-five statements defining each of the five attitudinal clusters...
described above. Chand (1979) has reported that internal consistency reliability ranged between .70 and .74 for VIII, IX and X grades.

b) Competence Test

Competence Test of vocational maturity measures cognitive variables involved in selecting an occupation. This test consists of five sub-tests and comprise of seventy-five items. Each sub-test consists of fifteen items and measures the following career choice competencies:

i) Self-appraisal (Part-1: Knowing Yourself)

It involves making judgements of a hypothetical person's assets and liabilities for vocational success and satisfaction (Crites, 1973 and Chand, 1979).

ii) Occupational Information (Part-2: Knowing About Job)

It includes items on job duties and tasks, trends in occupations, and future employment opportunities (Crites, 1973). Certain additions and revisions were made by Chand (1979) to make it as representative as possible of the world of work according to the Indian Conditions.

iii) Goal Selection (Part-3: Choosing a Job)

It requires a person to choose the best (most realistic) occupation for a fictitious individual described in terms of his aptitudes, interests and personality characteristics. Operationally defined, goal selection is the ability to correctly match people with jobs (Crites, 1973 and Chand, 1979).
iv) Planning (Part-4 : Looking Ahead)

It means evaluation of logical and temporal inconsistencies in the steps leading to various vocational goals (Crites, 1973 and Chand, 1979).

v) Problem Solving (Part-5 : What Should They Do ?)

It intended to assess the ability to resolve conflicts among the factors usually involved in vocational decision making (Crites, 1973 and Chand, 1979).

Chand (1979) reported that reliability coefficients of sub-tests of competence test ranged between .63 and .81 for VIII, IX and X Grades.

The validity (Criterion related) of coefficients between sub-tests of competence test ranged from .40 to .74 and the mean correlation was found to be .57 which indicates the construct validity of the test (Chand, 1979).

The functions or processes which are supposedly involved in taking the competence tests are thus largely what might be designated as comprehension and problem solving abilities as they pertain to vocational choice process (Crites, 1961).

2. Junior Personality Inventory (JPI)

by Mohan, Singh and Kalra (1968)

Junior Personality Inventory constructed and standardized for the Hindi speaking children in India ranging between 11 to 16 years of age. This test consists of 68 items and measures Extraversion/Introversion and Neuroticism.
Each item has its parallel form having similarity in meaning. The items are divided into four parallel forms, two for each dimension, i.e. Ea, Eb and Na, Nb. Each of the sub forms has 17 items each. The subjects' discrepancy in the responses on parallel form for each dimension has been taken as an index of inconsistency. The final score after rejection for inconsistency, is the summation of scores of Na and Nb and those of Ea and Eb.

3. Differential Aptitude Test – (DAT)
(Bennett, Seashore and Wesman, 1966)

According to Bennett et al. (1966), the DAT consists of seven sub tests. These are described briefly as under:-

i) **Verbal Reasoning (VR)**

This test is a measure of ability to comprehend concepts framed in words. It is aimed at the evaluation of the students' ability to abstract or generalize and to think constructively, rather than at simple fluency or vocabulary recognition (Bennett et al., 1966).

ii) **Numerical Ability (NA)**

It is the ability to understand numerical relationships and facility in handling numerical concepts. The problems are framed in the item type usually called "Arithmetic Reasoning" (Bennett et al., 1966).

iii) **Abstract Reasoning (AR)**

It involves the ability to perceive relationships in abstract figure patterns - generalization and education of principles from non-language designs (Bennett et al., 1966).
iv) **Space Relations (SR)**

The ability to visualize a constructed object from a picture of pattern has been used frequently in tests of structural visualization. Similarly, the ability to imagine how an object would appear if rotated in various ways has been used effectively in the measurement of space perception (Bennett et al., 1966).

v) **Mechanical Reasoning (MR)**

Each item consists of a pictorially presented mechanical situation together with simply worded questions. Case was taken to present items in terms of simple, frequently encountered mechanisms that do not resemble textbook illustrations or require special knowledge (Bennett et al., 1966).

vi) **Clerical Speed and Accuracy (CSA)**

It is the ability to measure speed of response in a simple perceptual task (Bennett et al., 1966).

vii) **Language Usage Test**

It contains two parts (a) Spelling and (b) Sentences. In the former each word is marked as spelled either right or wrong, in the latter each sentence is divided into parts, to be marked according to their correctness. The types are familiar, the items chosen by established scientific procedures (Bennett et al., 1966).

4. **Standard Progressive Matrices (Raven, 1960)**

The Raven's Standard Progressive Matrices set A, B, C, D and E was used as a measure of general intellectual
ability (intelligence). The test as a tool for present research was selected for its being culture-free (Anastasi, 1955), for its ease of administration, and its popularity and wide use on Indian sample (Dosa jh, 1958; Mohan, 1972; Mohan and Kumar, 1976; and Mohan and Banth, 1984). It has been found to be valid, reliable and convenient test. This is a non-linguistic test to apprehend meaningless figures presented for observation to see relationships between them, conceive the nature of the figure completing each system of relations presented and doing so, develop a systematic method of reasoning (Raven, 1960). This test can provide valid means of a person's present capacity for clear thinking and accurate intellectual work (Manual). On the whole this test appears to be among the most promising tool and most suitable test for obtaining a non-verbal score of intelligence.

5. Academic Achievement

Academic achievement in terms of acquisition of subject matter is conventionally assessed in our institutions by employing a system of marks or grades. According to Chand (1979), it is generally accepted that marks or grades serve as basis for classification and certification, guidance and evidence of efforts, motivation and measurement of educational performance. Academic achievement is an amalgamation of both cognitive and non-cognitive factors (Mohan, 1972). The importance of academic achievement in the field of vocational psychology
emphasized the need to examine closely the nature and relative role of various factors which determine a student's academic performance. Vohra (1981) reported that the marks in academic subject do influence vocational behavioural pattern of a person. In present study, individual raw scores of annual examinations were taken from the school records for English, Hindi, Mathematics, Science, Social Studies and total academic achievement. Then, these scores were converted into percentages as had been done in some of the studies mentioned above.

Procedure

For ensuring co-operation of the students, testing rapport was established with the subjects and they were assured that information obtained from the tests would be kept confidential and physical comfort was ensured. Students were briefed about purpose, aim of investigation and each test. Students were requested to respond as truthfully as possible to the test items.

The tests were administered to small groups preferably in the morning hours. The time bound tests were timed with the help of a stop-watch. Standard instructions were given for each of career maturity inventory, personality, intelligence and differential aptitude tests as prescribed in respective manuals. It was also ensured that each student fully understood the instructions for performance of the test.

The scoring of all the tests was done according to their respective manuals. For academic achievement, individual raw scores of annual examinations of students were obtained from school records and then these scores were converted into percentages.

After scoring, the data was pooled for computerization. The outcomes of computed analysis were tabulated and some of them were graphically presented in Chapter - V.