CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction :

A discussion of the conceptual framework and operational definitions of interest, theoritical issues concerning the development and structure of academic and vocational interests and the existing methods of measuring these with a special reference to inventories are discussed in the beginning part of this chapter. In the followint part a review of some standard Inventory measures, are presented. Lastly the synthesis of all studies in comparison with the present study is described.

2.1.1 MEANING OF INTERESTS : A concept.

Interest is an aspect of behaviour, not an entity itself. Experimentally an interest is a response of liking, an aversion is a response of disliking. In words of Monroe by strong (1963).

> - - - Interest is essential as the starting point of educative process, effort is essential as its outcome.

Herbert (1776) stressed virtue as the ultimate purpose of education but recognised the "many sided interests" as the means to that end.

Williamson (1939) emphasized,

> The more happiness is stressed, and not more efficiency, the more concern educators must have for interest, for they are indicators of what activities bring satisfaction.

Strong (1947) also supported,

> Human behaviour involves, first, wants or desires which are to be satisfied by reaching some goal and second means to be used in reaching the goal.

Thus Interest can be identified as an expression of satisfaction. Interest is the greatest word in education. Interest is a feeling that accompanies the idea of self-expression. It has its origin in the exhilaration, the sense of power, of mastery, that goes with every internally impelled effort to realise a condition for the survival of the self, whether such survival touch one aspect of the man or another. It is therefore dynamic in character.

2.1.2 Learning and Interests :

Teaching procedures are largely based upon the three laws of learning, stated as the law of readiness, the law of effect, and the law of exercise. According dto the law of readiness, one learns what one is ready to learn. An interest, a purpose, a desire, a need of readiness for some specific learning must be felt before learning takes place. This partly accounts for the emphasis placed upon motivation or the development of interest in pupils. Good teachers and counsellors often use an individual's special interests as means for reinforcing learning or awakening motivation to learn. For this reason, tests and inventories for discovery of student's

interests have been used for schools since long.

Interest is also defined as an attitude or state of mind which causes us to give attention and which determines our thinking about a given matter and how intently we will think about.

2.1.3 Personality Development and Interest :

A person's interest really affect his education. They determine what knowledge he will acquire and keep. They determine too the ideals or goals, towards which he will strive throughout life, since ideals are born out of interests. Interests and ideals, two together are the motivating forces which determine what understandings eah person will attain and what abilities he will acquire. His emotional responses and attitudes appear to depend upon all of these combined. Interests as the direct or indirect determiners of all the essential parts of true education, influences greatly the formation of virtually every person's character. The development of enduring, worth-while interests in young people is a work of transcedent importance. These interests shape their lives, and in a true sense fashion the destinies. Many behavioural scientists have drawnout similarities between the concepts of personality and that of interest.

Smith (1961) defines,

> A personality is an organism environment field, each aspect of which stands in a dynamic relation to each other aspect. There is organisation within the organism and organisation within the environment. But it is the cross

organisation of the two that is inevestigated in personality research. This may be true due to the fact that the two constructs are very closely related with that interests are important dimensions of personality. Tiedman and O'haya (1962) comment, "Interest and value measurements really portary the result of ordering phenomena of relevance to one's life situations.

2.1.4 Heridity and Environment :

Adams (1964) explained the fact that an interest inventory merely categorizes his own responses helps the student to interpret his scores as a mirror of his own reactions, rather than a mysterious dictum from some authority. According to him a person's interests are the production of interaction between (i) inherited bases of ability and temperament and (ii) many environmental factors, notably the opportunities he has had for pursuing certain interests and the value placed on their development by persons whose approval he values.

2.1.5 Interest and Abilities :

All interests apparently has its original source in the so called natural impulses, urges or drives, such as competition, love of nature, creativeness, Gregariousness, and by altrurism. That is interesting which affects ourselves, others about us, or humanity at large. Interest increases with an increase in related knowledge of any subject, provided such knowledge is well understood. Interests increase with the acquisition of any given ability or skill. Interest flows, or spreads from any interesting thing into any uninteresting thing whenever two are clearly connected in thought.

2.1.6 Development of Interest :

Ginzberg (1951) and other recognize three levels of interest development roughly related to chronological age. Before the age of eleven, interests tend to be transitory and unstable, between eleven and seventeen they begin to crystallize and might be termed "tentative" where as after seventeen they become stable and realistic.

2.1.7 Interest Factors :

Consolidating the results obtained from the seven studies on the instrumentation and their interrelationships of interest and value factors; Super and Crites (1962) report their own list of consisting of six interest factors : (i) Scientific (ii) Social welfare (iii) literacy (iv) material (v) systematic and (vi) contact.

2.1.8 Measurement of Interests :

Measurement connotes quontification of something. Coomb (1970) defines measurement to be consisting of four steps; (a) conceiving an entity to be measured, (b) transforming the entity into numbers according to some rationale (c) making certain arithmetical operations on those numbers and finally (d) interpreting the numbers back into the language. In education and psychology the measurement of human attributes or the mapping of variables into numbers is

done with the help of tests, questionnaires or similar tools. Educometrics, Psychometrics, Sociometrics, Econometrics, Biometrics are the branches of knowledge dealing with the development of measurement tools and techniques in different fields of study, using the common language of mathematics. Philosophers like Discartes, however knew that all quantities are not equally susceptible to measurement and, therefore, made three divisions of quantifiable human entities, (a) Primary, like height, weight, (b) secondary, like colour, odour, sound, pain and (c) tertiary, like feelings, emotions, sentiments, values. Whereas most of the human attributes are either nominal or ordinal in nature, the refinements of measuring tools result in higher order measurement scales.

Quantification of a characteristic aids in its understanding, control and use. Experimentation and verification of results depend for their efficacy and precision on the amenability of the variables involved to measurement. The inter-relationships between variables and the effect of causative factors or the independent variable(s) on the depedent variable(s) can be fully known with the help of measurement.

2.2 Types Of Interests :

Super and Crites (1964) distinguish four major interepretations of the term "Interests" associated with four methods of obtaining data on students' interests.

[a] Expressed Interests :

These are verbal expression of interests in an activity or occupation. The student simply expresses a liking, or indicates his dislike, for a particular activity or vocation. The significance of such expressions of interest varies with the maturity and experience of the individual. In some cases, expressed interests represent temporary whims or fantasies.

[b] Manifest Interest :

They are interpreted as evidenced by participation in an activity or occupation. A person who is active in dramatics club is manifesting his interests through actual participation. Manifest interest tend to be more stable than expressed interests since they are based on actual experience. This approach to the identification of interests however has similar limitations. The manifestation of interests may be limited by financial considerations or other environmental factors. Hence, these interests provide clues to possible educational and vocational goals, the absence of a specific interest may reflect only lack of environmental opportunity to develop that interest.

[c] Tested Interest :

These are measured by objective tests of vocabulary or other information rather than an inventory of reported interest. The use of such test as the Michigan vocabulary profile test as a measure of interest is based on the assumption that a stable interest results in an accumulation of relevant information and corresponding growth in specialized vocabulary.

[d] Intentoried Interests :

These interests are measured by lists of activities or occupations to which the student responds by an expression of liking or preference. In answering the inventory items the examinee records a series of self perceptions that are summarized in such a way as to reveal their similarity to those of workers in different occupations. The scores of each student can be interpreted as reflecting a pattern of relatively high or low interests in various fields.

Experience and research suggest that interest inventories can be valuable aids in vocational guidance. Evidence from the first three sources, however is useful in studying the validity of published inventories and in supplementing inventory results in the counseling of individual students.

The interest inventory does have the advantage of obtaining the students' reactions to a large sampling of items and of providing, through the use of converted scores, a means of comparing the student's interests with others of his sex and age. Berdie (1950) stresses the importance of considering with both expressed and inventoried interests :

> As long as measured interests have a relevancy for vocational satisfaction and as long as self-estimated (expressed) interests play an important role in the deliberation of individuals, both type of interests must be considered.

2.3 Approach Of Inventoried Interest :

There have generally been two approaches followed in item selection and key development for an Interest inventory, the rational approach like that in Kuder Preference Record (KPR) - Vocational form C by Kuder (1956) and the empirical approach as that in Strong Vocational Interest Blank (SVIB) by Strong (1959).

[a] Rational Approach :

The items are selected and weighed according to some preconceived notions about the characteristics or requirements of different vocations concurrence of a few experts in these fields determines the item wieghts on the basis of the content or the face validity of the tiems in respect of a particular

occupation or education. Internal consistency procedures are then followed for the purpose of improvement of scales. Items and scales are so chosen that the items within a scale have very high relationship but bear a very low relationship with the other items in the inventory. The adequacy of the number of scales is determined by the proportion of total variance explicated by the scales. Frequently there are restrictions on the number of items within a scale.

[b] Empirical Approach :

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 idiosyncrasies and statistical differences of preferences between two or more independent groups, for example a control group and an experimental group, are of major import in deciding upon the items and their weights in any scale. The reference group or the control group is called by Strong (1959) the men-in-general (m.i.g.) group. If an item discriminates between a criterian group and the m.i.g. group it is given a proportionate weight in respect of the interest scale in that occupational area. Generally this limit is the difference accruing due to chance.

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. Kuder (1957) states in this regard -

> The relative effectiveness of different possible ways of building keys is a complex function of a large number of variables, which probably include the number of cases, the composition of the inventory, the homogeneity of groups and the extent to which items can be considered to be uniformly distributed in the domain represented.

While responding to an inventory an individual may happen to vary his responses to the same item, over time. This is due to the fact that conditions change within an individual or that the content of the item is such that it reflects different meanings at different intervals of time. Regarding these fluctuations in inventory-scores, Super and Crites (1962) remark,

> The apparantly logical objection that no statistical combination of unstable elements can yield a stable total is met by Strong's Study (1943 P.871) of the effect of changes of responses to specific items on inventory scores, although changes of as many as 125 of his 400 items were found, these shifts had no appreciable effect on the Scores of occupational interests. The reason for this is that shifts in one direction are balanced by the shifts in the other direction, the underlying pattern or trend of interest being constant.

The inventory technique being more direct, convenient, successful, methodical and scientific as compared to other

techniques is used in the measurement of human attributes. It has stood the test of time from the utility point of view. The significant place that inventory measures occupy in fundamental and applied research is brought out by knowing how extensively the interest inventories are used by teachers, counsellors, educationists, psychologists and other behavioural scientists.

2.4 Studies Carried Out In Abroad

Getzels (1966) defined interests,

> An interest is a disposition organized through experience which impels an individual to seek out particular objects, activities, understandings, skills or goals for attention or acquisition - - - Interest are feelings that are generally of high intensity. Despite this general level of high intensity, they can range from no interest to high interest in terms of direction and intensity. Interests typically are directed towards some activity (target) and the relationships between feelings and the targets are learned.

A brief discussion of the available interest scales is necessary before they are presented. Despite the fact that interest is believed to be an important affective characteristic within the context of schools, interest scales are not abundent. "The scales that do exist usually do not meet the standards for technical quality described, has yet to be established" stated Getzels (1966).

2.4.1 Studies Related to Expressed Interests

i) A picture choice, by members of IOX is one of the few interest scales available for young children. Two forms - one for kindergarten and first grade student contains 28 items, the other one for students in second and third grades, contains 30 items. Both forms are intended to be orally administered to small groups of children. The format is forced choice and pictorial in nature. The children are presented with three pictures and asked to place an "X" on the one picture that shows what they would rather do. The set of three pictures are similar to the following :

Listen to story about a whistle.
Make a whistle.
Find out how a whistle works.

Use Pebbles to spell short words.
Watch what happens when pebbles are heated.
Count the pebbles in a dish.

Total scores are obtained in four subject areas, (language, Mathematics, Science and Aesthetics). These scores can range from 0 to 21, with higher scores indicating greater interest and also greater preference in the particular subject area. No reliability data are available for this scale.

ii) What I like to do, (Myers) is appropriate for intermediate

grades (4-8). Three of the four subscales contained within the instrument - "play", "Academic", and "Arts" - are especially pertinent for assessing school-related interests. The items on all these are written in the force-choice format.

The "play" subscale contains 36 pairs of activities. The students are intended to assess whether studentsare more interested in active or quiet games, and whether they are more interested in playing with friends or by themselves. Items on the scale are similar to the following :

Would you rather swim ten lengths
of a pool ?

OR

Tell jokes with some of your
friends ?

Four scales are available for each student active-social, active-solo, quiet-social, and quiet-solo. Total score can rang from 0-18. Higher scores indicate a greater interest in the particular type(s) of activities. This "play" test requires approximately twelve to fifteen minutes to administer.

The "Acedemic" subscale contains 48 pairs of activities. The items are intended to assess students' interest in four fairly global academic areas, mathematics, physical sciences, biological sciences and social sciences. Items on the scale are

similar to following :

Would you rather find out how a stereo works?

OR

Find out the difference between your school and a school in another country?

Four scores are available for each student, one in each of the four academic areas. Scores in each area can range from 0 to 24. Higher scores indicate a greater interest in the particular academic area. The "Academic" subscale requires approximately fifteen to twenty minutes to administer.

The "Arts" subscale consists of 30 pairs of activities. Each activity is meant to represent one of three areas; the performing Arts, the visual Arts, and Music. Items on the scale are similar to the following :

Would you rather learn to write folksongs ?

OR

Learn how actors and actress learn their lines ?

Three scores are available for each student, one in each of the three areas which can range from 0 to 20. Higher scores indicates a greater interest in the particular area. The "Arts" subscale requires approximately 10 to 12 minutes of administration time.

2.4.2 The studies regarding student's expressed choice in relation to Scholastic Achievement :

Expressed choice has been made with regard to -

[a] preferred school subject and

[b] the occupation which one expects to enter as described by Strong.

(i) The early studies of Thorndike (1912) utilized data based on Memory for past events and self-ratings of ability. They postulated a high relationship between interest and ability.

> What is the significance of the statement by a student, 'I want to study this course. I don't like that course ?' Do they obtain better grades in courses, they like than in courses they dislike ?

(ii) As soon as school grades were used instead of self-ratings of ability the correlations dropped appreciably (1920). Terman (1925) reported for correlations between rank of interests in a list of school subjects and rank of school subjects based on teacher's ratings of the quality of school work as follows :

[a]	For gifted boys	0.44
[b]	Gifted girls	0.18
[c]	Control boys	0.48
[d]	Control girls	0.55

(iii) Columba found small differences between the achievement of those 6th to 8th grade pupils preferring a subject and the remainder of the class.

(iv) Commins and Shank (1926) reported that fifth-grade students preferring arithmetic averaged better in it than in reading but the reverse did not hold.

(v) While studying the relationship between expressed occupational choice and scholastic achievement Kefauver (1926) found no difference in the achievement of high school students who had or had not made vocational choice, and this conclusion held whether or not students were equated for intelligence.

(vi) Odell (1930) tested 11,500 high school seniors and later obtained the college freshmen record of 1,677 and the complete college record of 486 of them. He concluded that the school grade average for those who had not made vocational choices was enough below that of those who had made such choices that the difference was statistically significant.

(vii) Garretson (1930) gave his preference questionnaire to several hundred boys in a high school of commerce, an academic high school, and a technical school. Scoring keys were developed from approximately 150 boys from each group

whose grades were above the mean. This procedure reduced but did not eliminate ability differences, when critical interest scores were set upon the data from three new groups of students scored on the three scales, these groups were distinguished as follows :-

- 84.3 % commercial from 71.0% academic & technical-
- 79.0 % technical from 81.2 % commercial & academic
- 66 % academic from 79.3 % commercial & technical.

The data indicated not much grade boys can be differentiated on the basis of interests among three curricula, but not to the same degree that Professional College men can be distinfuished with occupational interest scales. The technical curricular is the best differentiated the academic curricular is least differentiated. Scores on these interest scales do not correlate particularly with corresponding school grades (of .29 between technical interests and achievement, .15 for academic and .03 for commercial).

(viii) Langlie (1930) had college freshmen indicate the two subjects they had liked in high school, two subjects they had disliked, and the two in which they expected to be interested in college, these preferences were checked against grades after one semester in college. He concluded that there is a tendency to get the best grades in the subjects liked and thd dislike is not predictive of lowest grades although

students get their best grade in these subjects one half as frequently as do unselected subjects. The fact that he found that expectation of interest is not as predictive as interest based on past experience explains, the fairly high correlations.

(ix) Nemoitin (1932) reported statistically significant differences between Achievement, as measured by grade, in the subjects the high school students state they liked best and achievement in all the remaining courses.

(x) Chauncey (1932) utilised several hundred cases from the carnegie Foundation follow-up study in pennsylvania, Principally of seniors at the University of pennysylvania. He reported that those who claimed "special ability and liking for English" made significantly higher scores on the literature test than those who reported "they should never care to study English again". The same was true for four other school subjects, all that were investigated. Bi - serial r ranged between .50 to .76 for the five subjects) The positive preference students had taken significantly more units in the subject than the negative preference students. Both preference and number of credits were found to be independently associated with achievement. The data do not indicate any relationship between general college achievement and direction of student preference. The conclusion is that "The attitudes

which students hold toward their collegiate tasks, have a direct relation to their academic success".

In this investigation it is assumed that selection of courses is an expression of interest. As has been repeatedly pointed out, a single expression of interest, such as saying one likes arithmetic best, is not very reliable. If preference for a school subject is to be used as a basis for selecting that subject, investigation as to the validity of such relationships should be based upon stated preference versus subsequent achievement, instead of previous achievement as based by most of the studies.

(xi) As far as the validity of expressed choice for a vocation can not be accepted as a proof that, that is the occupation student should enter. One example of how inadequate expressed choice is appeared in the Data of Stuit (1938) :

> Of 94 women in a teachers' college only 10 obtained an A or B + rating in teacher interest on the Vocational Interest Blank. He emphasized expressed choice must be replaced by carefully considered measures of the individual's abilities and interest.

2.4.3 Studies Regarding Vocational Interest Inventories :

An exhastive account of the various inventories is not possible in the present report and hence not given here. The purpose of the

review is to give some details about the development, the construction and a few salient features of important tools in this area to enable one to draw a simple comparison between these and the present Educational Interest Inventory highlighting the need, the importance and requirements of standardized tools for use in the vocationalized innovative pattern of school education in India. The fundamental and applied research with the SVIB and the KPR by the authors, and their associates is reported very extensively in literature on one hand and on the other hand, the work and the state of reporting in our own country is so scattered and scant that it becomes difficult to know fully the actual efforts undertaken in the explorations of interests.

i) The Strong Vocational Interest Blank :

Edward K Strong; Jr. brought his interest in Vocational interest measurement from the carnegie Institute to standford University and published, in 1927, the first edition of the SVIB, and in 1938 its second edition. The later revisions appeared in 1959, 1966 (Men's form M) and 1969 (Women's form W). SVIB has been translated into many languages of the world.

The SVIB consists of 400 items split up into seven sections, occupations, school subjects, Amusements, Activities, Pecularities of people, order of preference of Activities,

Comparison between Two actitivities and your Abilities and characteristics. There are 263 items that are common to the two forms M and W. The SVIB is self-administering, without time limit, where the respondent is required to indicate his first impressions of his preferences in respect of each object or activity contained in each item, generally on the Like-Indifferent-Dislike (LID) pattern on a seperately provided answersheet. A completed men's blank can be scored on 48 occupations, 6 occupational groups and 4 special scales. A women's blank may be scored on 29 occupational scales and a scale for faminity - masculinity. For purpose of development of keys the weighting of items is done on the basis of statistical differentiation achieved between the members of a criterian group and m.i.g. group. The m.i.g. group is obtained by weighted pooling of samples of men from different occupational groups. The item weights range from -4 through +4 depending upon the extent of differences in proportions - differences in percentages measured in Units of their standard erros - of the preferences of any one criterian group and the m.i.g. group. A criterian group is constituted by the returns of mailed questionnaires from men in a particular occupation.

The test-retest reliability co-efficients are reported to vary from 0.48 to 0.79 in respect of different (men's) scales over a period of 18 years, whereas the odd-even co-efficients range from 0.74 to 0.94 for nineteen (women's) scales. The

validation is reported by counting the men entering an occupation who had varying degrees of inventory scores on that occupational scale at any previous point of time. The obtained scores can be transformed into grades A, B+, B, B-, C+ and C or standard scores with a mean 50 and Standard deviation (Sd) 10. Strong (1959) recommends -

> A person should consider seriously those occupations in which he received A or B+ ratings on the strong Vocational Interest Blank before entering some Unrelated Occupation. Conversely he should scrutinize critically any occupation in which he receives C rating before accepting it as a final choice.

Such a summary recommendation is based on Strong's (1955) follow up of the careers of 884 men who were administered SVIB once during the college career and again 18 years later in their occupational careers. Strong shows that there are 78 chances to 22 that a man with an A rating in an occupation is found engaged in that occupation 18 years later; and 17 chances against 83 that he is engaged in that occupation where he makes a C rating.

ii) The Strong - Campbell Interest Inventory (SCII) :

The SCII developed by Campbell (1974) contains 325 items (merged form) all taken from SVIB and, therefore, has the same seven sections and the LID type format of response patterns. A response sheet can, however, be scored on 124

occupational scales, 23 Basic Interest Scales, and 6 General occupational Themes of Holland's (1973) typology. For the first time the revised SVIB measures are correlated to a theory with the help of SCII. Other indices, like the total responses, the percentages of likes, indifferences, dislikes and the unpopular responses are obtainable. Standard scores with a mean of 50 and standard deviation 10 can also be obtained. Out of seven sections, the inventory booklet contains 131 items occupations, 36 items on school subjects, 51 items on Activities, 39 items on Amusements, 24 items on types of people, 30 items on preference between Two activities and 14 items on your characteristics.

The SVIB-SCII booklet is designed to be used with a seperate answer sheet. Computers read the answers from the answer sheets, calculate scores on scales and administrative indexes, and print out the results on pre-printed profile forms. Since each Scoring agency uses its own scoring machine and each machine works from its own adaptation of the SVIB-SCII answer sheet, the specific sheet used depends on which agency is scoring the inventory. Thus each agency provides its own answer sheets, under license from the publisher. Users should contact the scoring agencies directly for information on costs and services.

For years, the SVIB-SCII manual and its predecessors have

emphasized

> Both user's manuals and respondent's materials should make it clear that interest - inventory scores provide only one kind of helpful information, and that this information should always be considered together with other relevant information - skills, accomplishments, favoured activites, experiences, hobbies, influences, other tests scores, and the like - in making any career decision. However, the possible biases of these variables should also be taken into consideration.

The new IE scale for the SCII booklet (Introversion - Extroversion) was constructed by using the items from the two earlier scales that survived the screening for the merged booklet. Again, as with the new Academic Orientation Scale (AOR) only those items common to both the former male (Form T399) and Femal (Form TW398) booklets were used, so that the occupational criterian groups could be scored on this scale. The same form is to be used for both the sexes with seperate norms. Test-retest median reliabilities for all scales are above 0.90 for a two-week interval and above 0.86 for a 30 day interval. The estimation of predictive validities are likely to take some time. The content validity is built-in due to item selection procedure. Each scale has, however concurrent validity that is persons in specific occupations score high on appropriate scales.

(iii) The Kuder Preference Record (KPR):

After a tryout, beginning school year 1934-35, KPR Vocational Form A was first published by Kuder (1956) in 1939 and included seven vocational interest areas. KPR vocational Form B carried nine scales in its publication in 1942 and KPR Vocational Form C appeared in 1948 with scales in ten broad areas and an additional verification scale. In the series was also published the KPR Personal Form A in 1948, the KPR Occupational Form D in 1956 and lastly the Kuder Occupational Interest Survey Form DD, in 1956.

The KPR Vocational Form C consists of 168 triads of statements and the respondent is required to indicate the one most preferred and the least preferred statements in each triad on a seperate answer sheet provided with the test booklet. Activities contained in each triad tap three or more interest dimensions. The ten broad areas for which the scales have been developed are :

0. Outdoor, 1. Mechanical, 2. Computational, 3. Scientific, 4. Persuassive, 5. Artistic, 6. Literary, 7. Musical, 8. Social Service, and 9. Clerical; together with a verification scale. These scales have been developed until a high degree of homogenity is achieved within the items of a scale. At the first instance item consistencies were looked for

in the responses of about 8,000 school going boys and girls, and at the second instance in a sample of 1,000 telephone subscribers with the assumption that these men received counselling services more often than cross-section of the general population. No occupational groups were made out at this stage. However, with the publications of various editions and forms, different samples of boys and girls from schools as well as men and women from different occupational groups were considered from time to time for the purposes of item analysis, development of homogenous scales, estimation of scale reliabilities and the computation of percentile norms, etc.

The KPR Personal Form A, however is a personality inventory to measure (a) Preference for being active in groups (sociable), (b) Preference for familiar and stable situations (Practical), (c) Preference for working with ideas (Theoretical), (d) Preference for avoiding conflicts (Agreeable), and (e) Preference for directing or influencing others (Dominant).

The purpose of introuducing KPR occupational Form D is to provide a relatively short interest inventory with an empirical base for specific occupational scales. The inventory, therefore, consists of 100 triads, some of the items having been modified from the other forms. The

responses of 22 occupational groups are discriminated against the 'norm' group on the lines of SVIB. However, a total of 39 scores are obtainable including the verification score. The raw score of a subject is transformed int a Differentiation Ratio (DR) which is interpretable in terms of probability of belonging to an occupational group. Test retest and internal consistency estimates of reliability, based seperately on the norm group and combined with criterian groups range from 0.42 to 0.92. In this regard the namual reports,

> When the purpose is to differentiate between groups reliability within groups is relatively unimportant and there has some times been a tendency to over emphasize reliability at the expense of validity. In the construction of the occupatiion, (KPR occupational Form D) the emphasis has been on improving the prospects of obtaining good differentiation even though some reliability might be sacrificed.

The last tool in the Kuder Series is the Kuder Occupational Interest Survey Form DD consisting of 100 triads, again requiring the subject to pick up the one most preferred and the one least preferred statements in each triad. There are 114 ocupational scales, 77 developed on male criterian groups, and 37 using female criterian groups. In addition there is another set of 48 scales, 19 scales for female college majors and 29 for male college majors, together with a verification scale to judge the degree of carelessness or insincerity on the part of the respondent. Reliabilities of scales have not been worked out in this Form DD but instead

reliabilities of individual profiles over two weeks period are reported to have a median value of 0.90. Although predictive validity coefficients are not available, the concurrent validity in terms of misclassification of employed subjects impresses better than any other type of validity coefficients.

(iv) The Self Directed Search (SDS) :

The SDS is the improvised version of the original tool, the Vocational Preference Inventory (VPI) by Holland (1970) to provide the user with a 'Vocational Counselling Experience' in the absence of a Counsellor. The SDS has 228 items in various item formats spread over five sections, occupational Day-dreams, Activities, competencies, occupations and self estimates. On the basis of his responses the subject scores the SDS himself and arrives at a code. In VPI it is a 3-digit code whereas in SDS it is a 3-letter code giving the rank order of the following six personality types due to Holland (1966). Each personality type bears a direct association with a group of occupations.

Personality type	Preference for
1. Realistic (R)	Technical and skilled occupations.
2. Investigative (I) Intellectual	Scientific occupations.
3. Artistic (A)	Artistic, musical and literary occupations.
4. Social (S)	Teaching and helping occupation.
5. Enterprising (E)	Supervisory and sales occupations.
6. Coventional (C)	Clerical occupations.

(v) The Minnasota Vocational Interest Inventory (MVII) :

The MVII, developed by Clark and Compbell (1965), is specifically for non-professional occupations consisting of 158 triads. In each triad the subject selects the most preferred and the least preferred statements. The inventory has 29 occupational Activity Scales, like the printer, metal sheet worker, baker etc. In addition, it has 9 (homogenous) Area Scales - Mechanical, health service, carpenter, clean hands, outdoors, sales officer, office workers, electronics and food service. The standardisation samples consist of adolescents from non-professional occupations undergoing training at industrial training institutes.

(vi) Some other Inventories, like the GPII and VISA, are nonverbal pictorial inventories in forced choice form. GPII has 44 triads and 11 interest scales - persuassive, clerical, mechanical, musical, scientific, outdoor, literary, computational, artistic, social service, dramatic and personal service.

(vii) IEA Inventories (Kifer) were developed by Several well known educators for use in large-scale, cross cultural studies conducted under the auspicious of the international Association for the Evaluation of Educational Achievement, in the areas of mathematics, science, literature reading and French. The inventories were designed for use with 8 and 12th grade students, although it is very likely that they are appropriate for students in grade 7 through 12. The mathematics Inventory is entitled, "Mathematics in school : Like" contains seventeen items written in modified likert format. The items deal with various mathematics activities such as solving word problems, using charts and graphs, and getting information from statistical tables. The response options are "like alot", "like", "undecided", "dislike" and "dislike a lot". The scale requires from seven to ten minutes to administer. Total scales can range from 17 to 85 with lower scores representing more positive interests. The scale possesses an adequate degree of reliability with an internal consistency estimate of 0.83 being obtained for scores of a sample of American students.

(viii) Crowley Occupational Interest Blank (1976) has been briefly reported by Levy (1984) for 13+ and average as well as less able pupils. The four page blank has two parts. In Part-I pupils are asked to indicate their preferences among job titles. Scores are derived to assess interest in the following five areas of occupational activity. Active/Outdoor, office, social, practical and artistic. In Part-II the pupils choose one from each of 20 pairs of statements which represent five sources of satisfaction, namely financial gain, stability/security, companionship, working conditions, and interest (in trinsic).

(ix) The COIB by Closs (1980) takes about 30 minutes to administer to a group, including the time needed for the pupils to be led through the scoring procedures. Scores on Part 1 and 2 are graded A to E according to percentile norms. These are based on a sample of over 1200 pupils with average to below average abilities from different parts of the country their average age was 15' (Manual P.10). Lists of jobs related to the score categories of Part I are given. These and sources of satisfaction scored in Part 2 are intended to form the basis of discussion with a group or with an individual.

(x) JIIG CAL (Job Ideal & Information Generator) - (Computer Assisted Learning) Occupational Interests Guide reported by Levy developed by Closs (1980) is used for +14 pupils

through group administration. The guide is a revised and extended Unisex version of the APU Occupational Interests Guide (which itself is unlikely to stay in print). 'It may be used on its own as a conventional Interest TEst' and Scored by hand or machine. It also forms an integral part of the JIIG-CAL system for Computer Assisted Career Guidance (Program available under licence). Children make choices among activities, rate likes and dislikes, etc. Six general interest types are identified : working with hands, working with living things, clerical and sales work, handicraft work, Practical work, helping people, meeting and talking to people.

(xi) A. D. Crowley (1976) developed "occupational check list (Advanced) for pupils of +14 having above-average ability in 1972 (Levy), again revised in 1976 for group administration. It is a 2 page-check-list having two parts. In part 1, the pupil underlines these of 108 occupational activities he/she would like. The activities represent the following six vocational interest categories : Practical, enterprising, scientific, clerical, artistic and social. In part II, Pupils rate the importance to them of 15 aspects of a careet (e.o. good salary, using one's initiative). Although the check-list can be scored and some reliability and validity data are given, it is suggested that the main purpose of the OCL Is to provide a basis for discussion in thelight of occupations,

interest groupings, specific likes and dislikes, and so on.

(xii) Brimer also gives brief report in Levy's book on his "occupational Interest Rating Scale", undated for pupils of +14 by group administration. A reliable booklet contains two parallel forms, form 1 and 2. Each form consists of a list of activities presented in 53 pairs. For any pair the pupil rates both activities on a scale of one (very disinterested) to five (very interested), the pair merely providing a temporary frame or focus for judgement. About 35 minutes are required. Scores are obtained by scoring key for seven occupational areas. Business, Technical Care, Aesthetic, Scientific, Numerical and Field, - and for five types of interaction or 'direction of involvement' - Persuasive, operational, Empathic, making (Goal directed) and intellectual. To obtain scores for the latter groups of scales, responses from both Forms must be used. Raw scores are converted to scale scores which assume a Rasch model. Interpretation is by use of 'highs' and 'lows' in the profile of interests (and directions of involvement) best grades in the subjects liked and that dislike is not predictive of lowest grades although students get their best grades in these subjects one-half as frequently as do unselected students.

Responses to individual items by persons (963) in ten occupational groups were analyzed using a chi-square technique to determine which items differentiate among occupational groups since the four out of fourteen home economics occupations selected weights of 4, 3, 2, 1 and 0 were tentatively assigned to the levels of response to items selected for the scoring keys. Occupational groups proved to be too few for satisfactory study the analysis was limited (to 100 random sample from each of) of ten occupational groups such as i) Extension home economist, (100) Food Product Promotion, Food Service director, Group work with young children, Home economist in social welfare, Home service director, Hospital dietition, Teacher (High school), (94) Journalist of radio home economist, and (69) Restaurant and tea room manager. The median age ranged from 28.2 to 39.8 and median years of experience ranged from 5.00 to 12.5. Ninety two percent of the 448 items in the inventory were significant at or beyond the 5 percent level and 89 percent were significant at or beyond the 1 percent level. Most of the items included in the trial form were of value in differentiating among those ten occupational groups. Items were selected for ten scoring keys by determining which items most successfully differentiate each occupational group from other home economists, In the first study.

2.4.4 Scales to Discriminate Courses of Study and Scholarship

i) Since it is possible to differentiate occupations in terms of interests, it would seem possible to differentiate courses of study in the same manner. In a very real sense the latter is accomplished for certain professional courses by occupational interest scales. Data already presented by strong indicated that Dental Engineering, Law and Medical students score quite similarly to members of those professions.

ii) Walters and Eurich (1934) developed scale for science - mathematics, social science and English based upon criterion groups of 64, 67 and 59 upper-class college woman, respectively. Items were given a weight of one if the differences in response of two major groups amount to three times the probable error of the difference. A weight of two was employed if the item thus was separated one group from both the other two groups. Again the natural science scale proved to be the most valid, the social science the lease valid. "Students majoring in foreign language & music have interests similar to English majors" Freshmen groups which

had evidenced preferences for certain major fields were differentiated by significant mean differences in four out of six comparisons, proving the scales accomplish fairly well what they were designed to do it revealed correlation between scores on science-mathematics interest and achievement in general science. (r of .30)

A good educational interest scale based on professional students in one institution should function fairly well in another institution. It is not surprising that in these investigations educational interest scales for the natural sciences have been more effective than those for the social sciences.

Many an investigation has shown, however, that there are many good, as well as poor, students who are in the wrong course of study. First class educational scales might prove to be of value in calling attention to those students whose interest are out of harmony with the curricula in which they are enrolled.

(iii) The VISA is, however standardized on mentally retarded educable adolescents, male form having 85 pictures and female form having 60 pictures. The male form gives scores for seven occupational areas - garge, laundry, food service, maintanance, farm and grounds, material handling and

industry. Only four scores are available for women - business and clerical, house keeping, food service and laundry and sewing.

(iv) Johnson (1952) developed a Home Economics vocational Interest Inventory at Down state college of which the items in a special vocational interest inventory are a sample of the interests which bear upon occupations within one field and the inventory may be used to compare the vocational interest of a student who has selected this field with the interest patterns of the specialists in it.

Items for a special vocational interest inventory in the field of home economics were selected by analyzing occupations in the field reading vocational guidance literature interviewing persons who had had vocational experience, analyzing data collected in a previous study, and studying general vocational interest inventories in current use. The 448 items in the trial form of the inventory were grouped into three sections. (i) Activities, to which reading were to be indicated on the five-point scale; (ii) Job characteristics, and environmental factors having five point scale; and (iii) with miscellaneous items combined into series to be vaniced in order of preference. The tentative form of the Home Economics Interest Inventory was mailed to 1,884 Professional home economists and returned by 1,175 (654) of them.

2.5 Studies Regarding Interest Inventories In India :

In the field of educational and vocational guidance, occupational selection and educational research, the users have preferred to take advantage of the tools developed and standardized in the west. At a smaller scale, however, tools have been developed, adapted and standardized on restricted samples. Mitra (1972) in "The Survey of research in psychology", refers to two measures - the interest inventory in Hindi developed by Jhingran on SVIB's lines and the Chatterji's Non-language Preference Record on KPR pattern. 'The first mental measurement yearbook for India" by Long and Mehta (1966) gives particulars of a number of interest inventories constructed or adopted in this country. Another Source book is "The Handbook of psychological and social Instruments" by Pareek and Rao (1974) which gives the latest available information about the availability, parameters and the use of these tools in India. Relevant information about Vocational and educational interest inventories standardized on Indian samples is summarized below :

i) The Chatterji's Non-Language Preference Record by Chatterji (1962) is meant for high school and college students. The Record is for ten broad interest areas, namely, fine arts, technical, crafts, outdoor, sports, household work, literary, agricultural, scientific and medical on a sample of 900 school children. The reliability coefficients range from 0.69 to 0.95 for the ten scales. The scales are reported to

be discriminating between students in different disciplines and the validities of four scales (outdoor, scientific, literary and artistic) and the figures with KPR range from 0.22 to 0.45 (rho) or 0.13 to 0.29 (person's r). CNPR (962) is a concrete step in eliminating cultural bias of dress, age, sex etc. which bears close resemblance with certain jobs and vocations, chatterji uses stick figures in the CNPR. He has tried to transform the verbal content of KPR Form C with suitable alterations relevant to Indian conditions into small activity pictures.

ii) The Curriculum Interest Inventory by Das and Amanta is in Oriya for age range 13 to 16 years. It has 168 items and the reliabilities range from 0.80 to 0.88 for different interest areas. Norms are developed on a sample of 200 students. Validities with self-ratings are reported to be ranging from 0.50 to 0.64.

iii) The Interest Inventory by MasCarenhas (see Long & Mehta 1966) is for the students in English of age range 14 to 18 and contains 150 items to measure interest in medicine, engineering, commerce, arts and fine arts. This was standardized on a sample of 700 students of Bombay. Percentile norms have been worked out and reliabilities range from 0.81 to 0.90 for the five areas.

iv) The Interest Inventory in Hindi is developed by the Vocational Guidance Bureau of the Prantiya Shikshak Mahavidyalay, Jabalpur. This is meant for the students of age range 13 to 18 years.

v) The Interest-Parisuchi published by M/s. Rupa Psychological Corp. Varanasi, is a quick measure of seven interest areas viz. arts and humanities, science, commerce, agriculture, home science, fine arts and technology, with respective stability coefficients of 0.78, 0.88, 0.81, 0.85, 0.77, 0.83 and 0.79. The scores are validated against friend's ratings. Norms are worked out on a sample of 900 students of 8th class and 600 of 10th class.

vi) The Interst Test by Haffez is for high school boys.

vii) The Occupational and Avocational Interest Record by Bhardwaj (1958) is for college graduates. It consists of two scales, the occupational and the avocational each scale containing 140 items for the seven categories arranged in 25 tetrads. Content and Construct Validities have been worked out. Reliabilities range from 0.83 to 0.94 for different categories of interests.

viii) The P.S.M. Interest Inventory constructed by the college of Educational Psychology and Guidance, Jabalpur (1965) is in

Hindi on the model of Strong for the school grade 8-11. The inventory consists of 65 items of the LID type and measures interests in 3 fields - Science, Agriculture and technical. The reliabilities respectively, are 0.83, 0.86 and 0.67.

ix) The Vocational and Educational Record by Kulshrestha and Damale (1965) is for use with high school and college students. It contains 200 Vocational, 90 Educational activities covering ten vocational areas and 7 those of education. The reliability coefficients range from 0.79 to 0.90 for the educational interest record and from 0.75 to 0.89 for the vocational interest record. Norms are calculated in the form of stanine scores. The forms are validated against the ratings of parents, peers and teachers.

x) The Vocational preference Record is by U.P. Bureau of Psychology, Allahabad (1956). This is meant for 10th and 12th grade students and developed ten scales.

xi) The Vocational Interest Inventory is by Mathew. The inventory is meant for college students and possesses seven scales, outdoor, mechanical, clerical, persuassive, aesthetic, social work, and scientific. It contained 92 forced choice triads. The reliabilities range from 0.78 to 0.90 and T. score norms have been worked out.

xii) The Vocational Interest Inventory by Badami is for high school and college students in Gujarati for various occupations. It is reported to have been validated against several occupational groups and average profiles for comparison are available. The reliabilities range from 0.78 to 0.90.

xiii) Vyavsaya Ruchi Ki Janch by the Central bureau of Educational and Vocational Guidance is for boys and girls of age range 11-16.

Vyavasaya Ruchi Ki Janch by Jhingran (1956) consists of eight sub-tests in Hindi and is validated against actual occupations entered by 73 subjects after graduation. Its reliabilities range from 0.59 to 0.95 and is stated to be for use at all levels. The standardisation sample consists of 811 adults in 14 occupations.

xiv) THE NCERT INTEREST INVENTORY (NII) :

Ten broad occupational areas were selected for the development of NII to measure the vocational interests in these fields of work such as (1) Economics, (2) Secretarial, (3) Legal and administrative, (4) Technical (5) Outdoor, (6) Science, (7) Literary, (8) Protective, (9) Education, and (10) Medical. The standardization samples of occupational

groups are drawn from four states of Bihar, Karnatak, (earstwhile Mysore), Maharashtra and Uttar Pradesh. Members selected from these ten occupational areas constitute the criterian groups with the following criteria -

a) The individual being male in the age range of 25 to 55 years,

b) the individual is in the same occupation for a minimum period of five years,

c) he is satisfied with his present job, and

d) he is successful on the job.

With the tryout sample (2257), the items were selected for the final form and key was developed. The normative sample was used for the preparation of the norms and the estimation of the test parameters. The m.i.g. group was constitued by a staratified random sample of 400 subjects drawn from the said four states and the ten occupational groups (ten subjects per occupation per state). Four item types on the basis of mixed approach were finally decided upon. These were multiple choice (situational - 145), LID (Statement) - (810), Paired Associate - (120), and Checklist (11). This tryout form was printed in different languages of four selected states at the cooperating centres. Item selection for the final forms is based on the significance of the chi-square value, obtained from a contigency table containing the

frequencies of members of criterian groups opting different possible responses to an item, and the item differentiated relatively larger number of occupations. The weights to its various alternatives, for the purpose of keying, were assigned on the basis of the differences in the observed and the expected frequencies in its respective contingency table together with the apparent validity of an item to discriminate an occupation. Thus the content contained in the items of NII is rationally determined and empirically evidenced. Two final forms of the NII, the Junior form for age range 15 to 18 years and the senior form for 18 to 25 years were developed in this process in four languages - Hindi, Kannada, Marathi and English. This is self-administering which takes about 20-30 minutes where the preference to various statements were made on a separate answer sheet; going through quickly and recording spontaneous impressions. The final form contained 250 items on senior form, 180 items on junior form having 26 common items on all four types. Differential weights thus determined ranged on a seven point scale from minus three to plus three, which was reduced to a 3 point scale (+1 to -1) due to the enormous amount of task involved in scoring the inventory on 7 point scale. The internal consistency estimates of reliability using Cronbach alpha coefficient in respect of the senior - form of NII ranged from 0.46 to 0.89. Validity of the scales is evaluated in terms of the differences in the means of the criterian groups and the m.i.g. group when

scored on the respective scales. Norms in the form of T-scores with a mean of 50 and standard deviation 10 are also available.

xv) Bhasin (1980), at the fag end of the (NII) NCERT project strongly felt the need to extract the potential information of psychometric value from the NII data to answer certain fundamental questions regarding the nature of Vocational interests and their instrumentation, conducted an analytical studyon inventoried interests as he had already worked as one of the members of NCERT project.

The specific objectives were to -

i) construct new keys on empirical basis from normative data,

ii) determine the most efficient measure,

iii) study the parsimonious nature of vocational interest,

iv) compare the criterian group profiles,

v) determine the overall relationship between the occupational membership and the vocational interests,

vi) determine the profile reliability,

vii) examine the applicability of the normal model in the vocational interest measure, and

viii) provide a classifactory procedure.

The ten occupational groups of the normative sample of the cooperative Test Development Project of the NCERT were used for the analytical purpose of the study. Data were collected from the official records. There had however, been certain cuts on the sample sizes and various criterion groups on account of some untraced data cards, faking and disproportionate samples. The new keys were developed using cos-pi approximation to the tetrachoric correlation and its Standard error item discrimination indices transformed into item weights (-1, 0, 1). They were validated comparing with the original keys. The interest factors were extracted using the principal component factor analysis method.

The major findings of the study were :

i) when the set of the original keys were compared with new keys, in this cross-sample comparison of interest patterns, varying degrees of stability of vocational interests were found,

ii) The differential weights for the item formats used in the NII were determined with the help of two group discriminant function analysis.

iii) These differential weights have three distinct merits namely,

a) They reflected the efficacy of each format in differentiating the criterian group from the reference group,

b) They provided coefficients which could be used as regression weights in order to combine, lineraly, the subscores of the four parts of the NII in an optional way which led to reduction of the forty subscores to ten interest variables, and

c) The composite scores obtained by these differential weights were robust in nature and often resulted in normality even when the composing subscore distributions were non-normal.

iv) The most important factor, the first one, was a bipolar factor (37.67% of total variation) with technical interest on one extreme and literary interest on the other.

v) The second important factor was also a bipolar (24.20% of total variation) one with interest in Economic and business pursuits as one pole and interest in educational and teaching occupations as the other.

vi) The third important factor (22.09% of total variation) represented outdoor interest and interest in Protective Services opposed to those with interest in medical.

vii) The fourth factor (12.68% of total variation) represented interest in secretarial jobs.

viii) All the ten groups under study were found to be distinct from one another when considered on their interest profiles.

ix) Regarding the form of subscore distributions it was found that in most cases the subscores were normally distributed.

x) The reliability coefficients ranged widely and some of the values were found to be negative too.

xvi) Sharma (1982) constructed and standardized a Vocational Interest Inventory in Hindi for the secondary X^{th} grade school pupils of Haryana at Kurukshetra University. The first form of the inventory was prepared with the help of interest inventories of Kuder and Strong as well as keeping in view the job requirements of Haryana. For the purpose of selection of items, the opinions of students, of school teachers, and of experts and the inventories already in the field were taken into considerations. The items belonged to ten interest areas viz. outdoor, mechanical, scientific, literary, artistic, musical, social service, clerical, business and management and household. The first draft of the inventory was administered to 100 students of class X of a school in Haryana. The items were scored by alotting 2, 1, and 0 for like Indifference and Dislike responses, respectively. The analysis of items was done on twenty-seven percent upper and lower group basis. Those items for which the mean differences between the two extreme groups were significant were retained. In all two hundred items formed the final draft of the inventory. Norms were established by administering the final form of the inventory to 800 pupils (400 boys and 400 girls) drawn from rural and urban and government/private schools of Haryana. The norms for the inventory were found in the form of percentiles, standard scores, and T scores. Reliability of the inventory was found out by using split-half and test-retest methods.

The split-half reliability for the different interest areas of the inventory varied from 0.90 to 0.94 and test-retest reliability from 0.87 to 0.97. Criterion validity of the inventory was established by finding the ratio for difference between the means of criterion group (persons who were already in service) and normal group (students) which was significant. The coefficient or correlation between the scores of criterion and normal groups was found to vary between 0.70 to 0.90 for different interest areas. The final form of the interest inventory was found to be reliable and valid tool for knowing the interest of secondary school students of Haryana.

xvii) Sidhu (1983) standardized a vocational Interest Inventory for diversification of students at matriculation or Higher Secondary level at Punjab University with the following hypotheses :-

a) Individuals differed in their academic and vocational interests.

b) They tended to do better in the specializations which were to their liking.

c) It was possible and worthwhile to determine the academic cum vocational interests of an adolescent and offer him profitable and timely guidance in the light of these interests.

d) A vocational interest inventory standardized on a suitable criterion group from amongst the successful students of various streams of semi-vocational subjects, would be a reliable and valid tool for diversifying the students in class IX and guiding them well in time towards the most suitable stream in each case.

e) The students thus guded would not only show better results in their performance in respective streams, but would also enjoy learning the subjects of their interest and would also be able to enter into most satisfying occupations.

The inventory was standardised on 2,150 successful students of class XI, taking 300 students in seven criterion groups (Fine Arts, Agriculture, Commerce, Home Science, The Humanities, Medical and Non-medical) and fifty students in the technical group, which was maximum available number in the group. The sample was selected from forty six different types of schools (Government, Public, Private, Urban, rural boys and girls, co-educational) from all parts and districts of Punjab.

The inventory was designed on the pattern of strong vocational Interest Blank (SVIB) following the same item format categories of items and their number, which was 400. It was prepared in one form, both for boys and girls. The

trial form consisted of 700 items, which was administered to 160 students, each of the eight subject streams contributing twenty to the total number with the help of item analysis, using chi-square test, 400 items were selected for the final form. After this, the final form was administered to the final sample. Data were tabulated in the form of percentages, on a 3 point scale for each of the criterion groups, separately. For constrasting each group with general group, student in-general group of 1,500 was set up, drawn proportionately from all the criterion groups. Separate scoring keys for all the criterion groups were prepared by computing weights for various responses to each item. Then scales of norms were prepared on the basis of the frequency distributions of the scores of the the individuals belonging to each criterion groups. Reliability and validity of each scale was determined. The data were further analysed to draw allied and useful conclusions. This was done by making a comparative study of the ranges of raw scores and standard scores, and the mean raw scores and sigmas of different scales.

The major conclusions of the study were :

a) The inventory was dependable tool for the purpose of diversifying the students into different streams, as it significantly differentiated one criterion group from the other,

b) The reliability of the inventory in respect of all the scales was fairly high,

c) It was a valid inventory on the basis of number of possible evidences,

d) Individuals differ in respect of their academic and vocational interests,

e) Individuals tended to do better in the specilization of their liking,

f) After getting scientifically obtained information about his interests, the students tended to devote whole-heartedly to the courses selected in the light of the interests.

xviii) Bose Sinha, Chatterji and Mukherjee (1970) investigated into the interest patterns of the students in science, humanities and commerce streams at the Higher Secondary level, at Calcutta.

The main aim of the study was to develop typical interest pattern for science, Humanities and commerce streams. For measuring the interests of the students (CNPR) Chatterji's non-language preference Record was used. All the higher secondary schools of Calcutta were classified into several groups on the basis of area as North, Central, South. Then from each area four schools, two boys and two girls were selected at random. Only two other schools were taken in

addition for the commerce stream. The sample included 628 students - 357 boys and 271 girls - studying in class XI of the selected schools.

The findings of the study were -

a) Interest patterns for all groups were not identical and Pair-wise comparison indicated that there was a wide variation between the groups in this respect.

b) There was much similarity between the interest patterns of the commerce and humanities groups but the science groups were much different from both commerce and humanities groups as far as interests were concerned. These similarities and dissimilarities in the interest patterns for different groups could provide adequate aid in a guidance situation,

c) by using the total marks obtained by the students in the higher secondary as a criterion, three new scales of interests in the humanities, commerce and science streams were developed.

2.6 Views About Interest Studies In India :

While reviewing the research done in India in the area of educational testing and measurement in 1st and 2nd survey of Research in Education (1974) and (1979) by Buch Mitra and Kumar

reported,

> Most of the studies are adoption of foreign Instruments - - Relatively little work is done on interest measurement, Kuder's model seems to have been popular with Indian Researchers - - - Construction of Interest Inventories have been neglected.
>
> He also reported that -
>
> - - - Adoption of these tests which are available now, may not be equally good and usable.

According to trend report by Kulkarni and Kumar on 'Test and Measurement in 3rd survey of Research in Education by Buch (1986) stated, ---

From 1950 to 1981 only 10 vocational Aptitude tests are published in India, most of so-called scholastic aptitude tests are achievement tests, of very few have a long-term predictive validity. Only 13 interest inventories (27%) are been published decadewise, A large number of tests are constructed for the age group of 13-18. In the context of valididty the problem of relevant criteria (Criterion bias) continues to haunt the test construction. - - - the concurrent validity procedure is easier, but how much biased the external criteria like teacher ratings or school examination marks are, is an unknown (not measured) factor. Not much is done in the context of construct validity - - - Meaningful interpretations of various factor loadings are not reported. Large groups are involved by stratified random sampling procedures.

Bhasin (1980) in his Analytical study of Inventoried Interests, reviewed and reported -

> When one goes in for further details about these tools one finds that, by and large, the tools developed in India are below par and of limited utility. In many a case the manuals are not available and in some others even sizes and other details of samples on which these tools are standardized are not known. Most of the tools are lacking the minimum requirements of a standard instrument. Hardly there is a single interest inventory for which a good number of occupational areas are considered and which uses large samples of occupational groups for foreign made tools are available but the SVIB and the KPR cannot be directly used on account of content, language barrier and differences in cultural and environmental conditions. These shortcomings were realized at the national level and the National Council of Educational Research and Training (NCERT) sponsored a project, in mid sixties, for Interest Inventory for use with outgoing school children and adolescents seeking guidance for a vocational choice.

Bhasin (1980) carried out a study on critical analysis of Interest Inventories in India reported that out of many verbal inventories developed so far, Hindi has found a predominant place, nearly ten tests have been conducted from 1956 to 1977, seven tests in English from 1958 to 1975, seven tests in other regional languages like Bengali, Marathi, Oriya, Kannad, Malayalam and only 3 tests in Gujarati out of which 2 were on KPR Model and Mascarenha's was translated of by Indira Rao which had 5 academic areas.

Bhasin also opioned,

> --- Majority of the inventories developed so far have become quite old and it needs revision, in terms of the changing Societal needs. In Gujarat some of the above ones

are available, but they do not have wide utility. Education systems is also different from the past, the new vocations are coming up, and hence we need to develop a tool which fulfills the present requirements.

Bhasin brought out a few implications that follow from the review that - -

> Verbal tools in regional languages are scarce and there is a need to develop standardised instrument - - - verbal tools are easy to communicate and possess their own merits in the assessment of human attributes - - -
>
> He further pointed out --
>
> - - - because the resources, manpower, requirement and rate of development of different states are different; Such a tool may effectively demonstrate these regional differences in the vocational interests of our growing adolescents.

He further pointed out --

> - - - In spite of the meritorious efforts on the part of investigator some pictures are vague and ambiguous and they do not elicit the same responses to the situations as they are meant by the author.

A test review in Long and mehta (1966) about CNPR (Non-verbal Preference Record) stated - - -

> 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.

2.7 Synthesis Of The Presented Research Studies With Present Study :

The relevant studies quoted in this chapter have common objectives such as to construct and standardise interest inventory either for academic or vocational guidance, to develop an objective reliable and valid inventory/checklist/Test to assess the interest of secondary and Higher Secondary students for vocational or educational guidance. The present investigation also aimed at construction and standardisation of an interest inventory for discriminating Higher Secondary students to the respective field at University Education according to their interest.

Majority of the studies reviewed here contained 3 to 10 scales on either basic interest areas or academic areas. It was observed that the most common pursuits like science, technical/mechanical, business, Aesthetics/Fine Arts, clerical/secretarial of the literate Indian population were taken care of by almost all the inventories. This was followed by outdoor, sports, agriculture and social service interest areas which were covered by many of these. Some of the interest inventories also contain scales for health/medicine, teaching/ education, and protective services like police, home guard etc.

The present study had ten scales of various fields of education at University level available in Gujarat State after 10th grade or 12th grade. Such as - (i) Agriculture, (ii) Arts, (iii) Commerce, (iv) Fine Arts, (v) Home Science, (vi) Medicine, (vii) Performing

Arts, (viii) Science, (ix) Social Work and (x) Technology Engineering. Most of the researchers found an easy access to student population of secondary and Higher secondary schools in the respective states where the study was conducted, and various occupational area groups, Examination marks and friends' ratings of the students were considered as the criterion groups. In the present study Higher Secondary students during 1989-90 of Gujarat State from the five regions, being the area stratified cluster Sample, formed m.i.g. group whereas the final year graduate and post graduate students from the various faculties concerning each selected fields of education formed the criterion group. The size of sample in Previous studies for m.i.g. or reference group varied from 200 to 1436 and for the criterion group varied from 20 to 400. There were in all 825 subjects in m.i.g. group whereas 20-50 students from each field of education making a total of 415 students, as m.i.e. (criterion) group for the present study.

The selected items on the final tool in past studies ranged from 64 to 350, where four studeis had duads, one had triads and majority had 3 point-scale of LID Pattern, very few studies had five and seven point scale of ranking and forced choice multiple items.

The tool consisting 3 point scale with LID patterns in the first five sections of the inventory (250 items), including Left, Right or neutral preference (50 items), Yes, No or in question (25 items)

with sixth and seventh section making a total of 325 items on the final form was employed in the present invenstigation.

Arrangement of items also varied from test to test viz.

i) The items were so arranged that every 10th item belonged to a fixed interest area,

ii) The items were in the form of 10 x 10 matrix - each cell of which consisted of a pair of items.

iii) Items were sequenced in a cyclic order.

iv) A triad of stick/figure pictures where one expressed his choice for one most liked and least liked picture in a set.

In the present Interest Inventory for first five sections 250 items were arranged in omnibus spiral design to avoid set response, faking etc. where every 10th item belonged to a fixed academic interest area. The items for sixth (50) and seventh(25) sections were selected directly from the SCII Blank. All the inventories including the present one were self-administering and self-explanatory. Majority of the researchers used both test retest and split half reliability. The present investigator used only test-retest reliability on the basis of shifts as the total number of item being 325, equal divisions for comparison was not possible.

Items were retained in past studies on the basis of critical ratio, item analysis with 27% upper and lower group and t test,

whereas the items were validated by comparing percentage differences between two independent samples that of m.i.g. and m.i.e. as per Campbell. The ten scales were also validated by comparing the mean differences between the criterion and norm groups. X^2 values were found very significant among 325 items of the whole Interest Blank and thus all were retained on final form. The differences among the rural, urban and male and female responses were also found significant.

To develop the scoring keys the differential weights were determined in previous inventories on the basis of X^2 values, intercorrelations, Phi ϕ values etc. The chart method suggested by Strong was used to determine the differential weights in the present study.

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