CH-2
Theoretical Perspective
and
Review of Related Literature
CHAPTER – 2

CH-2 Theoretical Perspective and Review of Related Literature

2.0 Introduction

2.1 Concept of Interest

2.2 Classification of Interest

2.3 Importance of Review of Related Literature

2.4 Historical Perspectives

2.5 Review of Previous Studies

2.5.1 Studies in India

2.5.2 Studies in Abroad

2.6 Distinctiveness of the Present Study
2.0 Introduction

The insight of an investigator regarding the field in which he investigates is developed as well as the information and knowledge of that particular field is strengthened by an intensive visual survey of the realm of the research works done in that field. The investigator is given the opportunity to gain insight in to some aspects of research as other investigators employ them. The investigator studied the following aspects or points of previous study. They were:

- objectives,
- problem,
- limitations,
- operational definitions of terms,
- tools,
- population & samples,
- sampling technique,
- statistical calculations, and
- findings of the study.

After a close study of the literature & previous studies pertaining to the same field, the investigator develops a keen insight and gains something new which enables him to improve his study significantly. At
the same time a careful consideration of recommendations for further research in various studies guide the investigator for the suitability of the problem and also enables him to delimit his research problem. So researches done on the interest of students was reviewed by the investigator.

Some of the significant researches that are also related to the present study had been tried to review by the investigator of the present study.

2.1 Concept of Interest

The task of defining and giving the meaning of any term in any field of study is quite a difficult one as different persons from different perspectives view the term. The above said statement is also applicable to the term of interest. Rigorous efforts have been made by the psychologists to define the term interest. The term interest is very complex in nature. Those who have studied the nature of interest tried to put the nature of interest in their own words. The simple notion of interest is a sense of attachment or attraction towards a particular object or lesson. Everyone possesses some type of interest to which he/she has some liking. He always gives preference to that particular object. These likings may be permanent or temporary depending on the attitudes and aptitudes. As Crow and Crow stated “Interest may refer to the motivating force that implies us to attend to a person, a thing or an activity, or it may be effective experience that has been
stimulated by the activity itself”. In other words interest can be the cause of an activity and result of participation in that activity.

In other words, interest can be taken to be a great dynamic force that determines person’s behavior. John Dewey writes, “Interest is first active, projective or persuasive .... Interest projects itself towards an object which has conceptual existence outside the limits of the sphere of interest itself.” Interest has a reference to needs, desires and motivation. It is a set of forces predisposition towards a particular object or item. Super writes, “Interests are the product of interaction between inherited aptitude and endocrine factors on the one hand and opportunity and social evaluation on the other”.

D. Fryer writes in “The Sense of Measurement “subjective interests are likes or dislikes which are estimated experiences, characterized by feeling of pleasantness or unpleasantness.”

Jones defines interests “as a feeling of liking associated with a reaction, either actual or imagined to a specific thing or situation.” The concept of vocational interest is defined from the notion of interest itself. The vocational interest is a person’s likes and dislikes towards a particular profession, job or vocation. The individual performs most of his vocational activities because of his interest in that vocation, while he avoids doing those vocations in which he has no interest. When he is sometimes forced by circumstances into performing certain profession or vocation that dose not interest him, it is done as a matter of
Vocational interest is a tendency, which motivates the individual to engage in a particular vocational activity. The individual tries to perform that activity under any circumstances, which interests him, and for that reason, he employs all his mental and physical powers in its performances. For example, if an individual is interested in music, he is more likely to be successful in music. Berdie points out “Vocational interest both as measured by tests and as indicated by occupational choices are expressions of liking and disliking as directed towards activities, objects and characteristics of the environment.” Vocational interest is an indeterminate indicator of success in a particular area of vocation, profession or job.

The complexity of interest is indicated by historical surveys and the need for objective definitions is pointed out while the earlier conceptions of interest brought out the feeling aspect involved in interest. The cognitive aspect in explaining the term is emphasized by McDougall. He further explains that interest being essentially cognitive, is a matter of enduring the setting of our cognitive tendencies or impulses. Instincts and sentiments are thought to be the determinates of interest.

Fryer tried to give the operational concept of interest and pointed out a clear demarcation between subjective and objective interest. The subjective interest in the opinion of Fryer can be regarded as a cognitive experience influenced by the appreceptive mass in question and the intensity of
stimulus arousing it, on the other hand objective interest have been interpreted in a measurement sense as positive or negative reactions to stimulating object and activities in the environment.

The Hormic School of psychology has emphasized the conative aspect and described interest to be active and projective thus, both the conative and cognitive factors appear to comprise interest as a complex whole. Interest is thus a word with different shades of meaning.

2.2 Classification of Interest

The complexity in nature of interest makes the classification of interest quite difficult since different psychologists and educationists tried to classify under different captions.

(1) Thurstone classified interest under four heads viz:

1. Sequences 3. Language
2. People 4. Business

(2) Allport and Vernon classified interest under six areas:

1. Theoretical
2. Social
3. Economic
4. Political
5. Aesthetic
6. Religious
(3) Kuder classified interest under ten areas:

1. Outdoor
2. Mechanical
3. Computational
4. Scientific
5. Persuasive
6. Literary
7. Musical
8. Artistic
9. Social service
10. Clerical

(4) Surekha Amin classified interest under ten areas as Kuder did.

There are different four methods of classifying interest that are discussed below.

(1) Expressed Interest:

When a person expresses simply his interest in verbal form, it is known as expressed interest. When individual is asked he simply states that he likes, is in different to, or dislikes the activity or profession.

As far as the research activity is concerned in the field, it is said that little research won has been carried out. Foyer’s retailed review in 1931 has been shown in the review by Carter and Beritic. This is quite interesting that the conversion drawn by the previous and later is quite same. The limitation that can
be stated is that the expressed or specific interest of children and adolescents are unstable and useful data for diagnosis or prognosis are not provided.

(2) Manifested Interest :

The other type is the manifested interest which implies the participation in activity or an occupation. The avoidance of subjectivity is highly achieved by the study of the objective manifestations of interest or the implication that interest is static is avoided. According to Kristen the verb “to be interested” should be used indicating a process and activity are involved. In this approach it is assumed that the teacher who is actively engaged in teaching has also computational or outdoor interest and that a doctor busy in surgery is also interested in music concept also. It is also assumed that such manifested interest are the consequences of interest in the dominants or by-products of the activity rather than the activity itself. It is also believed that the opportunities for the manifestation of an interest may be limited by the environment or by financial considerations. So an expressed interest has no manifest counterpart. This is the reason why in many studies the manifested interest has not been considered as a predictor of interest, although it has been often served as a criterion where the reason that is advocated is that anything as dynamic as interest should find an outlet.
(3) Tested Interest

Interests are to be measured by objective tests are known as tested interest. The basic difference between tested interest and inventories is the previous is objective one where as the totter one based on subjective self estimate. It is believed that interest in any vocation or profession is likely to manifest itself in action. It should also result in an accumulation of relevant information. Thus interest in account lead a person to acquire and retain were information about account from each sources than the other persons. Fryer has reviewed the attempts which are made by other researchers and others during and after World War I to measure interest by means of the amount and type of information retained. Fryer has pointed out that these were not followed up because of the cumbersomeness of memory and information tests.

The drastic improvement of testing and statistical techniques enables the co-operative test service. It bought out a general information test which Flanagan described as a measure of interest in several areas. The aviation psychology programme during work war II made it possible to bring together many psychologists who had been wonder along these lines. The efforts of these psychologists resulted in the development of a general information test which gave differential scores for pilots, navigators, and bombardiers. That test proved to be the most valid single test in the air force selection and classification battery. The selection of pilots for commercial airlines was carried out by the similar test
constructed by super for the American Institute for research. The process of selection and counseling was made easier by such type of test. Apart from those, other civilian which consequently proved fruitful.

(4) Inventoried Interest

The forth type of inventoried interest. It is assessed by means of lists of activities and occupations which bear a superficial resemblance to some questionnaires for, each item in the list is responded to with an expression of preference. The basic and vital difference is that in the inventory each possible response is given an experimentally aver mined weight. After the completion of responses the weights corresponding to the answer given by the sample are added so that a score is to be yielded. In the expressed interest it is a single subjective estimate where as in this inventory it is a stable pattern of interests. There was one logical objection that no statistical combination of unstable elements can yield a stable total. But this objection was met by Strong’s study of the effect of changes of responses to specific items on an inventory scores, although changes of expression of liking or disliking of as many as 125 of his 400 items were found. It was found that these shifts did not affect significantly the sores for occupational interests. The reason for this is that shifts are one direction are balanced by shifts in the other direction. It was also proved that the underlying pattern of trend of interest is constant. Credit goes to Strong’s work to provide the foundation for many studies in psychology and measurement of
interest and made possible the development of practical instrument for use in counseling and selection.

2.2.1 Sex and VI

Several studies have been carried out in order to study the relation of sex with the vocational interest of a person. S. Samalthied to study the effect of sex on the vocational interest with the help of self developed vocational interest inventory. It has been found that sex plays a vital role in the vocational area. It was found that sex had significant effect on administrative business social science and arts. J.P.S. Tomar carried out his study on the sample of 600 students with a view to finding out the impact of sex in vocational interest area they found that agriculture, literature, fine arts, science, crafts, outdoor activity technology, medicine, sports and household matters were the dominant vocational choices of ways in descending order, while fine arts, literature, crafts, technology, science, household matters, sports outdoor activity agriculture and medicine were the dominant vocational interest area of girls in descending order. C. Ronald and others studied that sex differences in career interest of high school students. Or the lack of them seemed to remain stable over a three year period. The same findings were found out by Broday and B. Tlansen also. Multis, L. Ronald and other found that female scored significantly higher than males on the social artistic, and conventional themes on the other hand the males scored higher on the realistic occupational theme. Tien hsin – lan studied the vocational interest
structure of high school student using Chinese vocational interest. Inventory based on the studied sample of 1861 students. It was found that high school boys prefer realistic and investigative type of interest while the girls prefer artistic and investigative type of interest. Kath Sexton-Ragek focused on the effect of gender. It was found in the study that when at risk. Hispanic female were compared to that the normative from of Hispanic females, significant difference were found for the realistic, investigative, social, enterprising and conventional. When compared to the normative from of high school females, similar results were found. When at risk Hispanic males were compared to the normative group of Hispanic males, significant differences were revealed for the investigative, artistic, social, enterprising and conventional. When compared to the normative group of high school males, similar results were found.

2.2.2 Residential Area and VI

One of the interesting area of study is to study the impact of residential area of a person on the vocational interest area as geographical variations have their own impact on the personality and character of people which has in affecting vocational patterns of a person R.K. Ready studied 1671 samples and drawn the condition that in the case of urban subjects the percentage making occupation. Choice increased with grade level. He also found that there was more realism in urban groups. It was also found that the urban
subjects of occupations which were in aggrieve with their self concept. That place wise satisfaction had no impact on variation of interest scores was found by S.Samuel. Bhavnagar studied that no significant. The sample displayed a very high degree of interest in social, agriculture and science cant difference was found amongst urban and semi urban girls in the conference of their occupational choices and vocational interest. J.P.S. Tomar studied that the dominant occupational interest of urban adolescents, in descending order, were literature, fine arts, science, crafts, sports, outdoor activities, technology, medicine, household matters and agriculture while the dominant occupational interest trends of the oral adolescents were agriculture, fine arts, literature, technology, crafts, science, outdoor activities, household tasks, sports and medicine.

2.2.3 IQ and Vocational Interests

I.Q. sometimes plays vital role in the personality, academic achievement, occupational choice and many other aspects. Therefore, this leads us to study the relation between I.O. and its impact on vocational interest of a person. In this direction, H.B.L.Vohra contributed. He found that the means obtained on I.Q. and aptitude tests were comparable and in some cases higher in the case of polytechnic students than in the case of other general academic course students. It was also found that intelligence played little role in their choices for technology group of occupations and there was low correlation.
between personality and intelligence for these courses. According to S.Samal none of the interest scales correlated significantly with intelligence and there was no marked difference in interest of high and low intelligence groups. It is essential to note down hereby the observation by R.L.Bhardwaj. He found that creativity components were interest demoting in bright adolescents but remained prominently promoting in less intelligent adolescents of his category.

Intelligence consistently denoted vocational interests on the high level of SEs. It was more interest promoting on the middle socio-economic level in general. It’s promoting capacity was negatively correlated with intelligence. Interest on middle SES was interest promoting. It tended to correlate positively with creativity in promotion and demotion of vocational interest on this SES level. Intelligence was less interest demoting with low SES as well as with low creativity. Intelligence at high creative level promoted vocational interest the best at the middle level of SES. Intelligence was more vocational interest promoting in low creative on the middle SES level. Intelligence promoted agriculture interest of high creative when they belonged to the middle SES level but denoted it when they belonged to high SES. Intelligence promoted artistic interest in highly ingenious solutions to problems or low originality.

Ramaswamy Balgopal, James E. McLean and Alan S.Kaufman write that the relationships observed in the canonical correlation analysis between intelligence and both personality and vocational interest reflect overlap with
general intellectual ability especially the kind of general ability that is associated
with schooling and overall acculturation experiences. The relationships do not
seem to donate on overlap with fluid ability, the kind of intelligence that is
demonstrated when people are able to solve novel problems that are largely
unaffected by schooling, nor do the relationships seem to denote correspondence
to intellectual abilities that are less saturated.

2.3 Importance of Review of Related Literature

A review of related literature is much more than an annotated bibliography or a
list of separate reviews of articles and books. It is a critical, analytical summary
and synthesis of the current knowledge of a topic. Thus it should compare and
relate different theories, findings, etc, rather than just summarize them
individually. In addition, it should have a particular focus or theme to organize
the review. It does not have to be an exhaustive account of everything published
on the topic, but it should discuss all the significant academic literature
important for that focus.

The specific organization of a literature review depends on the type
and purpose of the review, as well as on the specific field or topic being
reviewed. But in general, it is a relatively brief but thorough exploration of past
and current work on a topic. Rather than a chronological listing of previous
work, though, literature reviews are usually organized thematically, such as
different theoretical approaches, methodologies, or specific issues or concepts involved in the topic. A thematic organization makes it much easier to examine contrasting perspectives, theoretical approaches, methodologies, findings, etc, and to analyze the strengths and weaknesses of, and point out any gaps in, previous research. And this is the heart of what a literature review is about. A literature review may offer new interpretations, theoretical approaches, or other ideas; if it is part of a research proposal or report it should demonstrate the relationship of the proposed or reported research to others' work; but whatever else it does, it must provide a critical overview of the current state of research efforts.

A research project is often undertaken in response to a literature review. Doing the literature review for a topic often reveals areas requiring further research. In this way, writing the literature review helps to formulate the research question.

A literature review helps to establish the validity of a research project by revealing gaps in the existing literature on a topic that offer opportunities for new research.

A literature review…

• Provides an overview and a critical evaluation of a body of literature relating to a research topic or a research problem.

• Analyzes a body of literature in order to classify it by themes or categories, rather than simply discussing individual works one after another.
• Presents the research and ideas of the field rather than each individual work or author by itself.

A literature review often forms part of a larger research project, such as within a thesis (or major research paper), or it may be an independent written work, such as a synthesis paper.

Purpose of a literature review situates your topic in relation to previous research and illuminates a spot for your research. It accomplishes several goals:

• provides background for your topic using previous research.
• shows you are familiar with previous, relevant research.
• evaluates the depth and breadth of the research in regards to your topic.
• determines remaining questions or aspects of your topic in need of research.

A literature review may consist of simple a summary of key sources, but it usually has an organizational pattern and combines both summary and synthesis, often within specific conceptual categories. A summary is a recap of the important information of the source, but a synthesis is a re-organization, or a reshuffling, of that information in a way that informs how you are planning to investigate a research problem. The analytical features of a literature review might:

• Give a new interpretation of old material or combine new with old interpretations,
• Trace the intellectual progression of the field, including major debates,
• Depending on the situation, evaluate the sources and advise the reader on the most pertinent or relevant, or

• Usually in the conclusion of a literature review, identify where gaps exist in how a problem has been researched to date.

• Place each work in the context of its contribution to the understanding of the research problem being studied,

• Describe the relationship of each work to the others under consideration,

• Identify new ways to interpret, and shed light on any gaps in previous research,

• Resolve conflicts amongst seemingly contradictory previous studies,

• Identify areas of prior scholarship to prevent duplication of effort,

• Point the way in fulfilling a need for additional research, and

• Locate your own research within the context of existing literature.

2.4 HISTORICAL PERSPECTIVES

The credit of being a pioneer of Interest Inventory goes to the Carnegie Institute of Technology as they began to work upon a Standardized Interest Inventory in 1919. In 1919-20, the work in this direction began with a view to collecting the items for the inventory in the graduate students seminar of Clarence S. Yoakum. In 1918 Miller used an interest inventory for the high school students for
orientation purpose. He administered his inventory upon approximately 10,000 high school students. The purpose of his blank was to help to discover special interest and abilities by suggesting how to observe one’s likes and dislikes. Yoakum’s first seminar (1919-20) prepared a list of 1000 questions which covered interest situations from early childhood through the adolescent period up to about thirty years of age. Most of the present inventories are generally the outcome of that list. In order to measure the mechanical and social interest of engineers B.V. Moore (1921) prepared an inventory in which 14 items were included. Later he modified his inventory and increased the items to 20 and measured 10 different occupational groups. In 1924 Ream made an effort to measure and distinguish common interest of successful and unsuccessful salesman. Pryed (1924) continued the research done by Moore to distinguish the interest of mechanical and social group. In 1924-25 several inventories were used by Craig to measure different types of interests of various occupational groups. The noteworthy part of Craig’s effort was that he included various personal questions to indicate affective and emotional conditions. In 1924 Shuttle Worth made an attempt to distinguish between money and non-money interests by means of modifications of the first edition of Assayer’s inventory.

Brainard was the first person who worked upon activity inventories of interest in 1923. He included general and specific activities of
college students in his inventory, such as writing poetry, reading newspapers, speaking in public, exercise and so on. Carnegie’s inventory is considered as the first standardized inventory. In Carnegie’s inventory various statistical techniques were used to establish the validity of it. After the standardization of the Carnegie Interest Inventory, Fryer (1923) published occupational inventory for men and women in which 80 items were for men and 67 items were for women.

The modification work of Carnegie Inventory was undertaken by Paterson at the University of Minnesota. It was used for college students in which both occupational and general items were included. In 1928 Strong revised an extended Cowdery’s inventory for the Validation purpose. The number of items from 263 to 400 in his blanks were increased by himself.

It’s also quite interesting to note in this regard that none tried to study the factors related to interest that are known as interest factors. It was Thurstone who for the first time studied interest factors and applied analysis to 18 occupational scale of Strong’s Vocational Interest Blank. First without rotating the axes (like Thurstone) Strong later made several factor analysis. Allport and Vernon developed their study of values as a measure of the values postulated by Spranger. Lurie also tried to devise an instrument for appraising these values and unlike Allport and Vernon
subjected it to factor analysis. Kuder’s work with his preference record provided further evidence concerning the nature of interest factors. Scores for nine types of interests were given by this inventory and the tenth outdoor interest has been added which can’t be called factors in the statistical sense of the terms as they were not insolated by factor analysis method but which amount to about the same thing as they are based on item analysis are therefore internally consistent and mutually independent.

In order to assess interest, its nature and its factors attempts in this direction have been made in several countries. Fryer brings together most of the researches on interest before 1930 and Strong brings the analysis up to-date. Approaches have also been made to this problem in countries like England, Australia, Holland, Germany, Italy, etc.

2.5 Review of Previous Studies

The focus on the history of researches in India in the field of the study of areas of vocational interest shows that the Indian investigators followed the inventories prepared and developed by the foreign investigators. Kuder’s model seems to be quite popular with Indian investigators. Four investigators have tried to attempt Kuder Preference Record (KPR). Naik (1969) adapted the KPR in Oriya, Sing (1965) in Hindi, Parikh (1971) in Gujarati and Gopalan (1972) in Malayalam. Nazre(1968) adopted the Gorden Personal Profile in Hindi and conducted a survey of interpersonal values of students of class XI in Bihar.
Prasad’s inventory in Hindi of vocational values was standardized for undergraduate and postgraduate students of Patana University. Trivedi (1969) constructed an inventory for undergraduate students and Kaur (1970) developed a battery of tests to assess ability of school students, aptitudes and interests. Palsane (1975) devised inventories to measure interest, adjustment and study habits for Marathi speaking population at school and college leaving stages. Curricular Interest Inventory prepared by S.B.L. Bhardwaj was also based on foreign inventories.

In different universities of India various types of works has been carried out in the field of vocational interest. Bureau of Educational and Vocational Guidance of different states, Indian Statistical Institute, Central Bureau of Educational and Vocational Guidance and National Institute of Education have been attempting on the same line but the striking feature is that they normally follow the foreign tradition.

Three persons especially in Gujarat developed the interest inventories. They were J.C.Parikh from Vallabh Vidyanagar, H.D.Badami and Jyoti Dave from Ahmedabad. Interest Inventory by J.C. Parikh was based on Kuder Preference Record whereas Interst Inventory by H.D.Badami is based on 10 areas given by Thurstone and Jyoti Dave developed Interest Inventory based on Strong’s Inventory.
Review of literatures that are related with the present study has been presented in two categories as shown below:

1 Studies in India

2 Studies in Abroad

2.5.1 Studies in India

1 SINGH, R.P.,

Interest Patterns of Successful Students in different Courses of Study at the Secondary Stage in Uttar Pradesh (India),

Ph.D.

Psy.

Luc. U.

1965.

Objectives:

The study aimed at

(1) establishing and formulating some working proposition which related to the various aspects of interest, and

(2) understanding the nature of interest and the various factors which affected its growth and development.

The Sample:
The sample consisted of 1,436 successful candidates of all the streams – arts, science, agriculture, commerce, etc., at the high school examinations. In order to determine the pattern of interest of students successful in different courses of study, an interest inventory was developed by the investigator. A total of 462 items were pooled in the following seven categories – (1) mechanical interest, (2) business interest, (3) scientific interest, (4) aesthetic interest, (5) social interest, (6) clinical interest, (7) outdoor interest. The final draft of the inventory contained 168 pairs of items. Chi-Square test and Bhattacharya’s method of measuring divergence between the two multinomial population were used to determine the extent of sharpness of interest patterns for different courses of study.

Findings:

The comparison of the two contrasting groups under each course of study brought out significant points in interest patterns under each course of study. It was found that

(1) under ‘literacy course of study’ successful students were marked by a high score on the scientific and a low score on the business and the clerical interest categories

(2) students successful in scientific course of study scored higher on the outdoor and lower on the business and clerical interest categories
(3) the interest patterns of the successful student under the agriculture courses of study were marked by a high score on the outdoor, and a low on the business and clerical interest categories; and

(4) no specific pattern of interest emerged in case of successful students under the commerce course of study.

2 BOSE, U., SINHA S., CHATTERJI, S. And MUKHERJEE, M.,

An Investigation into the Interest Patterns of the Students in Science, Humanities and Commerce Streams at the Higher Secondary Level
Calcutta,
1970
Objectives:

The main aim of the study was to develop typical interest patterns for science, humanities and commerce streams.

The Tools:

For measuring the interest of the students, Chatterji`s Non-Language Preference Record (CNPR) was used.

The Sample:

All the higher secondary schools of Calcutta were classified into several groups on the basis of area, as north, central and 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 11 of the selected schools.

Findings:

The findings of the study were:

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

(2) 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.

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

3 PARLIKAR, R.K., Ph.D.

An Investigation to Study Vocational Maturity of High School Students, Psy.
Objectives:

The important objectives of the study were:

(1) to examine the differences in the vocational maturity of boys and girls;
(2) to find out how the development of vocationally mature and immature individuals differed in some important aspects; and (3) to study the nature and growth of vocational maturity in terms of presumed indices.

Hypotheses:

To study the relationships between the presumed predictors and measures of vocational maturity, the following hypotheses were made:

(1) the maturity indices would essentially be the same for students in grades 8 to 11.

(2) Intelligence, school achievement, level of adjustment, interest, identification and independence would be significantly corrected with measures of vocational maturity.

(3) Vocational development of boys and girls would differ in view of sex role identification.

(4) The developmental history of vocationally mature and immature individuals would differ markedly.

The Sample:
The sample consisted of 600 high school students selected at random from each of the grades 8 through 11 of the sixty three Gujarati medium high schools in the city of Baroda. From each of the four grades, seventy five boys and seventy five girls were sampled. Two categories of tools were used, viz., tools for measuring vocational maturity and tools for measurement of presumed correlates of vocational maturity. Three dimensions of vocational maturity were considered, viz., choice competency, choice attitude and consistency of vocational preferences. The presumed correlates of vocational maturity included in the study were intelligence, school achievement, adjustment, interest, identification and independence.

The Tools:

The tools included an open ended questionnaire for measuring competence, adolescence adjustment test battery and teacher made test for measuring identification and independence orientation. Competence test consisted of eight items developed by the investigator. Consistency was measured in occupational fields, levels, families and time. Aptitude test used in this study consisted of 100 items in Gujarati language and was based on the attitude test of vocational development inventory by Crites. For measuring intelligence the Desai-Bhatt group Test of Intelligence which was standardized in Gujarat State and on Gujarati speaking population was used. Achievement was measured in terms of achievement in academic
subjects at school. Tests from the Adolescence Adjustment Test Battery standardised at the Faculty of Education and Psychology (Baroda) were used for measurement of social adjustment, family adjustment, personality and interest. The interest Inventory consisted of two parts having thirty and fifteen items respectively and was based on the Allport-Vernon-Lindzey’s study of Values.

Findings:

The major findings of the study were as follows:

(1) vocational maturity of the grade 8 boys was characterized by competence as well as choice attitude;

(2) among grade 9 boys competence was related to choice attitude but not to consistency while in grade 9 girls competence was not correlated either with choice attitude or consistency; among grade 9 boys consistency and choice attitude were closely related;

(3) in grade 10 boys consistency and choice attitude were closely associated;

(4) among grade 11 boys as well as girls competence was related to consistency and choice attitude;

(5) girls had higher consistency within the fields as compared to boys, whereas boys had higher consistency within levels;
(6) intelligence was associated with over-all vocational maturity among students of grades 9 and 10;

(7) there was a positive correlation between academic achievement and over-all vocational maturity;

(8) in case of grade 9 students social adjustment was closely associated with over-all vocational maturity;

(9) family adjustment was associated with over-all vocational maturity among grade 9 boys and girls of grades 9 and 11;

(10) neurosis, self-sufficiency, introversion-extroversion and dominance-submission failed to show any consistent relationship with the measures of vocational maturity;

(11) there was a consistent trend of association between mother-identification and the measures of vocational maturity in grade 11 girls, further identification was correlated to some extent with all measures of maturity in grade 8 boys and grade 9 girls; and

(12) intelligence as well as achievement were associated with the measures of vocational maturity.
An Investigation of Some Personality Determinants of Vocational Maturity and Career Indecisiveness

Ph.D.

Psy.

Raj. U.

1974.

Objectives:

The study aimed at determining the relationship between three variables, viz., (1) vocational maturity, (2) vocational indecision, and (3) manipulative treatment affecting personality variable like anxiety.

Sample

The sample consisted of 1,000 female undergraduates in arts and science courses at two women colleges at Ajmer in Rajasthan state. The sample was in the age range of sixteen to twenty one years. Vocational maturity was measured by a scale analogous to the Vocational Development Inventory by Crites. This instrument was prepared by the investigator and it had a reliability index of 0.73. This scale was termed ‘The Vocational Maturity Scale’. The second variable, vocational indecision was measured by a scale entitled The Vocational Indecision Scale, which also was
developed by the investigator and which had a reliability index of 0.58. The third variable of anxiety was measured using an Indian adaptation of the Taylor’s Manifest anxiety scale.

Findings

The main findings were as follows:

(1) informal experience resulted in higher scores on the vocational maturity scale and lower scores on the vocational indecision scale; (2) the scores on vocational indecision scale were lower for the undecided group than for the decided group and the scores on vocational maturity scale increased more for the immature than for the mature subjects;

(3) there was no significant difference on the anxiety scores of the two groups of subjects;

(4) the effect of ‘anxiety induction’ on the vocational maturity scale scores as well as on the vocational indecision scale scores was not immediately manifested, but a duration effect was found after four weeks, wherein significantly higher scores were found on the vocational maturity scale and lower scores on the vocational indecision scale; and

(5) the effect of the combined treatments was to raise the scores on vocational maturity scale and to lower the scores on vocational indecision scale.
Development of Vocational Sense among Adolescents---Socio-Economic and Rural-Urban Variations in the Development of Vocational Sense among High School Boys

Ph.D.

Psy.

Osm. U.

1974.

Objectives:

The objectives of study were:

(1) to investigate the nature vocational development in the high school boys of grades 9 and 11 in the southern states of India;

(2) to investigate possible rural-urban and socio-economic variations in the pattern of vocational development.

Hypotheses:

Hypotheses tested in the study were:

(a) percentage of subjects making occupational choice would increase with increasing grade level;
(b) the number of subjects choosing occupations which are within the reach of their achievement level and intellectual level are likely to increase with increasing grade level;

(c) more number of subjects are likely to choose occupation which are in agreement with their value orientation and self-concept; and

(d) there are likely to be rural-urban and socio-economic variations in the emergence of vocational development pattern.

The Sample:

A sample of 1671 subjects comprising 948 urban and 723 rural high school boys was selected. As many as 568 subjects did not express any occupational choice and hence were excluded.

The Tools:

Tools administered for data collection were (1)a questionnaire constructed by the investigator; (2) the Raven`s Standard Progressive Matrices Test; and (3) the Allport`s Study of Values.

Findings:

The major findings of the study indicated that

(1) in case of urban subjects the percentage making occupational choice increased with grade level;
(2) middle socio-economic group showed knowledge of distinctively higher number of occupations than high or low socio-economic group; and this knowledge increased with increasing grade level;

(3) there was little increase in realism with increasing grade levels in relation to one’s past achievement;

(4) the realism was found to be more in urban and upper socio-economic groups;

(5) there was clear developmental trend with increasing grade levels with regard to choosing right occupations in terms of their intellectual capacity;

(6) there was increasing integration between subjects’ value orientation and their choice of occupation with increasing grade level and socio-economic status;

(7) there was increasing integration between subjects’ self-concept and their chosen occupation with increasing grade level and socio-economic status; and

(8) urban subjects chose occupations which were in agreement with their self-concept.

SIDHU, K.S.,

Standardization of a Vocational Interest Inventory for Diversification of Students at the Matriculation or Higher Secondary Level
Hypothesis

The major hypotheses of the study were:

(1) Individuals differed in their academic and vocational interests.

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

(3) 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.

(4) A vocational interest inventory standardized on a suitable criterion group from amongst the successful student of various streams of semi-vocational subjects, would be reliable and valid tool for diversifying the students in class 9 and guiding them will in time towards the most suitable stream in each case.

(5) The students thus guided 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 Sample:
The inventory was standardized on 2,150 successful students of class 11, taking 300 students in seven criterion group (fine arts, agriculture, commerce, home science, the humanities, medical, non-medical) and fifty students in the technical group, which was the maximum available number in the group. The sample was selected from forty-six different types of schools (government, private, urban, rural, boys, girls, coeducational) from all parts and districts of Punjab.

The Tools:
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 from 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 eight criterion groups, separately. For contrasting 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 individuals belonging to each of the 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.

Findings:

The major conclusions of the study were:

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

(2) The reliability of the inventory in respect of all the scales was fairly high.

(3) It was a valid inventory on the basis of a number of possible evidences.

(4) Individuals differed in respect of their academic and vocational interests.

(5) Individuals tended to do better in the specializations of their liking.

(6) After getting scientifically obtained information about his interest, the student tended to devote wholeheartedly to the courses selected in the light of the interests.
Relation between Range and Depth of Interest

The Bureau of Educational and Psychological Research, Govt. of West Bengal, Calcutta, 1974

Objectives:

The aim was to ascertain the relation between range and depth of interest.

The Sample:

Forty-six teacher trainees, residents of the college hostel, were rated in respect of ten interest areas by three teachers who lived in the same premises. Each judge independently rated each student.

The Tools:

Depth of interest was rated on five-point scale. For each student, the number of area in which the judge had found him to be interested was his range score, and median of the depth values awarded by the judge to these areas was his depth score. The pooled ratings of range and depth were correlated.

Findings:
The study revealed that persons having a larger number of interests, which had been found to be an indicator of high intelligence, also tended to probe deeper into things in which they had interest (the coefficient of correlation between the pooled ratings of range and depth was 0.384, which was significant at 0.01 level of confidence).

8 VOHRA, H.B.L.,

An Investigation of the Relationship among Intelligence, Aptitude, Personality, Academic Achievement and Vocational choice of Polytechnic Students
Ph.D.
Psy.
Pan. U.
1977

Objectives:

The major objective of the study was to investigate the relationship of the psychological variables of intelligence, aptitude, personality, and academic achievement, with the occupational choice of polytechnic students.

The Sample:
The sample comprised 335 polytechnic final year students (males) from the three popular branches of engineering (electrical-100, civil-100 and mechanical-125), selected randomly from six polytechnic institutions.

The Tools:
The tools used for collecting data were Raven’s Standard Progressive Matrices, Space Relations, Numerical Ability, Mechanical Reasoning, and Abstract Reasoning Aptitude Test from the Differential Aptitude Test Battery (Form A) by Bennett, Wesman, and Seashore, Eysenck’s Personality Inventory, Semantic Differential Scale for Occupational Choices by Mohan and Banth; academic achievements were taken from the official records of the institutions. For the analysis of data, statistical techniques of mean, standard deviation, correlation, t-ratios and factor analysis by principal axis and varimax rotation were employed.

Findings:
The major findings of the study were:

(1) The polytechnic students gave definite and well-considered choice for the group of occupations (technology) for which they were undergoing training.

(2) Most of the choices in various other groups and in technology group were given for the first level of occupations.
(3) The means obtained on intelligence and aptitude tests were comparable and in some cases higher in the case of polytechnic students than in the case of other general academic course students.

(4) The scores on H/I and N dimensions of personality were less in the case of polytechnic students than in the case of students of other professional and general academic course groups of equivalent age levels.

(5) Intelligence played little role in their choices for technology group of occupations.

(6) Occupational choice (technology) and aptitude were significantly and positively correlated.

(7) Personality and academic achievement did not play any role in the choice of occupational courses.

(8) There was low correlation between personality and intelligence, personality and aptitude for these courses.

(9) The relationship between academic achievement and personality dimensions H/I and N was found to be negative. The low score on neuroticism and extraversion was associated with high achievement in these difficult, complex courses requiring a lot of persistence to do work at desk and machine.

(10) Academic achievement and aptitude were positively correlated in the whole sample as well as samples in different branches. This was further
supported by the factor analysis as both these variables formed one common factor.

(11) The choice of polytechnic students were not having a rational and scientific basis, as no relationship was found between the occupational choices and personality, academic achievement, and intelligence of the students. Lack of rational basis could be the major reason for wastage in these institutions

, Construction of a Vocational Interest Inventory to Study the Interest Pattern of High School Seniors and its Relationship with their Intelligence, Socio-Economic Status and Academic Success.

Ph.D. Edu.

Sam. U.

1977.

Objectives:

The objectives of the investigation were to have a differential study of the interest pattern of high school seniors sex wise and place wise; and to study the relationship of interest with intelligence, socio-economic status and academic success.
The Sample:

The study was undertaken on a stratified, randomized sample of 570 boys and 580 girls of tenth class of recognized high schools of Orissa.

The Tools:

The vocational interest inventory developed for the purpose was an interactive free response variety of self-reporting instrument giving measures on eight scales of vocational interest, namely, scientific, mechanical, agriculture, business, social service, arts, clerical and administrative. The odd-even reliability of the interest scales ranged from 0.79 to 0.93. Intercorrelations among the scales varied from – 0.06 to 0.31. The instrument was validated against the California Interest Inventory. Assuming that education, occupation, and income are the potential contributors of one’s socio-economic status, a scale was devised to measure this variable. Intercorrelation among three aspects of the scale ranged from 0.36 to 0.62. Correlation coefficients between partial and total weighted scores were 0.85 for education, 0.75 for occupation, 0.77 for income. The CFIT scale 3 was used to measure the subjects’ intelligence. School examination marks in three consecutive examination in five curricular subjects were processed to give estimation of the subjects’ academic success. Correlation between vocational interest and other variables was computed by the product
moment and chi-square methods. F test and t test were applied for
differential study in respect of interest.

Findings:
The findings of the study were as follows: sex wise difference was found
significant in administrative, business, social service and arts scales of
interest. Place wise stratification had no impact on variation of interest scores.
The sample displayed a very high degree of interest in social, agriculture
and science. Interest in agriculture, business and clerical activities correlated
negatively with socio-economic status. None of the interest scales correlated
significantly with intelligence and there was no marked difference in
interest of high and low intelligence groups. Trend of relationship between
academic success in any curricular subject required interest in related
vocational area.

10 SINHA, J.C.,

Role of the Family as a Unit and Vocational Interests of the Intermediate
Students
Ph.D.
Edu.
Agra U.
Objectives:

The study proposed to answer the question as to what extent the family as a unit (parent-child relationship, socio-economic status and parental values) predicted the vocational interests of intermediate students. The main aims of the investigation were:

(1) to study the vocational interests of students,

(2) to study some components of the family environment, and

(3) to study the role of the family as a unit in the vocational interests of the students.

The Sample:

The sample of the study consisted of 460 male students having an average intellectual level and studying in higher secondary schools/intermediate colleges of Mathura and Agra cities. The sample was selected from three types of institutions- government, aided and general, and those offering five different optional courses.

The Tools:

Under dependent variables, the interests of the students in ten vocational fields were taken into account. These were physical science (Ps), biological science (Bs), computational (C), business (B), executive (Ex), persuasive (Pe), linguistic (L), humanitarian (Hu), artistic (A), and musical (M) fields. Thurstone’s
Interest Schedule was used to measure the vocational interests of students. Independent variables selected were parent-student relationship, socio-economic status and parental values. Parivarik Sambandh Suchi was adapted and standardized and Home Adjustment Scale of Saxena was used. An adapted form of Kuppuswami’s SES scale (Urban) was used to study the parents’ socio-economic status. Sherry and Verma’s personal value questionnaire was also used to study the personal values of parents. Five extraneous variables, namely, intelligence, sex, urban-rural differences, institution types and courses of study, were controlled. Tandon’s Verbal Test of Intelligence was used to study the average students.

Findings:

The findings of the study were:

(1) Family environment characterized by amicable parent-student relationship inculcated among studentren love and liking for vocations in the scientific and executive fields.

(2) Family environment characterized by parental avoidance and high economic and social values motivated the students for vocations in computational, business and persuasive fields.

(3) Interest for vocations in artistic and musical fields was engendered in the family environment where children were not accepted by the parents and there was an absence of parental democratic values.
OBJECTIVES:
The objectives of the study were:

(1) to determine and study the impact of components of creativity and intelligence upon the vocational interests of Indian adolescents at various strata of socio-economic status,

(2) to study interaction among creativity, intelligence and socio-economic status on bi-variate and trivariate levels of operations while influencing the growth of vocational interests,

(3) to structure the patterns of growth to vocational interests during adolescence

(4) to assess the potentiality and usefulness of vocational interests for purpose of ‘roles’ and ‘statuses’ in the current national aspirations and venturesome planning framework

(5) to formulate basic issues to be discussed to provide a broad and integrated framework for harnessing vocational interests of adolescents, and
(6) to make a sound appraisal of higher education, in terms of ‘problems’ and ‘prospect’ of vocational adjustment of the youth.

Sample

The sample of 240 college-going students of Agra town, both boys and girls, of urban areas, graduates and postgraduates of the arts, science and agriculture faculties was selected through multi stage random sampling.

Test

The creativity test developed by Chauhan and Tivari was used for measuring creativity. The split-half reliability coefficient ranged from 0.59 to 0.83. Intelligence was measured with the help of a group Test of Intelligence for Adults by Tandon. The split-half reliability coefficient ranged from 0.59 to 0.99. Its relationship with Jalota Test of Intelligence was 0.60. A Socio-economic Status Scale [Urban] developed by Kulshrestha was used to measure socio-economic status. The test-retest reliability was 0.87. Vocational Interest was measured with the help of Vocational Interest Record Developed by Shrivastava and Bansal. The split half and test-retest reliability coefficient ranged from 0.73 to 0.83 and 0.74 to 0.86 respectively. The data were analysed with help of factorial design analyses of variance with equal cell size followed by t-test.

Findings
1. Creativity components – creativity production (CP), fluency (FL), Originality (ORG), and flexibility (FX) were interest demoting in bright adolescents but remained prominently promoting in less intelligent adolescents of this category.

2. Intelligence consistently denoted vocational interests on the high level of SES. It was more interest promoting in less creative and less interest promoting on the middle socio-economic level in general. Its promoting capacity was negatively correlated with intelligence.

4. Intelligence on middle SES was interest promoting. It tended to correlate positively with creativity in promotion and demotion of vocational interest on this SES level. Creativity on low SES level remained interest demoting with less of intelligence. Intelligence was less interest demoting with low SES as well as with low creativity.

5. Creativity remained a consistent promoting agent of vocational interest in bright adolescents of middle SES. Its promoting role was reduced both by high and low level of SES in bright adolescents.

6. SES consistently promoted vocational interests in low creativity bright adolescents.

7. The role of creativity in promoting vocational interests in less intelligent adolescents was best facilitated by the high level of SES. The middle level of SES followed it but the low level tends to change its role.
8. SES promoted vocational interest when adolescents possessed high creativity with low intelligence. Both creativity and intelligence, when uniformly low retarded the promoting role of SES.

9  Intelligence at high creative level promoted vocational interest the best at the middle level of SES.

10  Promotion of vocational interests by SES was facilitated the best when high creativity was accompanied by less intelligence. It became more demoting when both were uniformly high.

11  Intelligence was more vocational interest promoting in low creative on the middle SES level.

12  SES in less creative adolescents promoted vocational interest in the best manner when accompanied by brightness of intelligence.

13  Intelligence promoted agriculture interest of high creatives when they belonged to middle SES but demoted it when they belonged to high SES. Agriculture interest of low creativity brights was promoted by SES but was demoted in the case of high creative brights. Fluency, independent of SES, promoted the interest.

14  Intelligence promoted artistic interest in highly ingenious solutions to problems (ISP) or low originality Adolescents of high SES.
An Analytical Study of Inventoried Interests

Ph. D.

Edu.

MSU

1980

Objectives:

The specific objectives of the investigation were:

(1) to construct new keys on empirical basis from normative data,
(2) to determine the most efficient measure,
(3) to study the parsimonious nature of vocational interests,
(4) to compare the criterion group profiles,
(5) to determine the overall relationship between the occupational membership and the vocational interest,
(6) to determine the profile reliability,
(7) to examine the applicability of the normal model in the vocational interest measures, and
(8) to provide a classificatory procedure.

The Sample:
The ten occupational groups of the normative sample of the Co-operative 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 of 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. They were validated comparing with the original keys. The interest factors were extracted using the principal component factor analysis method.

Findings:

The major findings of the study were:

(1) When the set of original keys were compared with the new keys, in this cross sample comparison of interest patterns, varying degrees of stability of vocational interests were found.

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

(3) These differential weights have three distinct merits namely, (a) they reflected the efficacy of each format in differentiating the criterion group from the reference group, (b) they provided coefficients which could be used associated regression weights in order to combine, linearly, the
subscores of the four parts of the NII in an optimal 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 sub score distributions were non-normal.

(4) The most important factor, the first one, was a bipolar factor with technical interest on one extreme and literary interest on the other.

(5) The second important factor was also a bipolar one with interest economic and business pursuits as one pole and interest in educational and teaching occupations as the other. (vi) The third important factor represented outdoor interest in protective services opposed to those with interest in medical. (vii) The forth factor 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 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.

13       SENAPATI, B.B.

A Study of Interest and Ability of the Secondary School Students in Science,
Objectives:

The objectives of the study were:

(1) to determine the exact nature of relationship between interest and ability, and (2) to suggest some dependable criteria for guiding students in the science stream of the present school education.

The Sample:

The sample consisted of 207 students of age group 17+ chosen at random from among students of class 11 (science stream) of twelve randomly selected higher secondary schools in West Bengal.

The Tools:

Data were collected with the help of intelligence test by Pal and Bose, the Bengali adaptation of Strong Vocational Interest Blank by Deb, Scientific Aptitude Test by Gosh and Achievement Test in physical science designed on the basis of questions used in the Higher Secondary Examination, 1975 of West Bengal Board of Secondary Education. Those scores obtained by the subjects in physical science in the school annual examination as well as in the higher
secondary final examination were also collected. Correlational methods were used in the analyses of data.

The finding that emerged from the study was that intelligence and interest taken together were a better predictor of achievement in science than interest or intelligence alone.

14 SAHEB, S.J.,

A Study of Academic and Non-academic Abilities in Relation to the Vocational interests of the Entrants to the +2 Stage of Schools in Tamilnadu Ph.D. Edu. MKU 1980

Objectives:

The objectives of the study were:

(1) to investigate the differences between the academic and the vocational stream students with respects their academic abilities, non-academic abilities and vocational interests,

(2) to investigate the difference between the academic and the vocational stream students who have shown primary interest in the same areas with respect to their academic abilities and non-academic abilities,
(3) to investigate the inter-relationships between the academic and the non-academic abilities in the case of the academic stream students and the vocational stream students,

(4) to investigate the inter-relationships between the success criterion variables, namely, the examination marks and teacher rating and the academic abilities and non-academic abilities, and

(5) to find out whether the socio-economic status of the students had any influence on the choice of stream.

The Tools:

The academic ability variables studied were vocabulary, verbal reasoning, numerical ability; and the variables of non-academic abilities were leadership, social service, arts, writing, dramatics, music, games and sports and science talents; the non-academic abilities were measured at three level, namely, appreciation, participation and contribution. Vocational interests in ten spheres were considered. The success criteria were teachers’ rating, marks of the final examination of standard 10 and quarterly marks.

The Sample:

The sample of the study comprised 98 boys (532 belonging to the academic stream and 455 to the vocational stream) of the English medium higher secondary schools in Tamil Nadu.

Tools
The tools constructed and standardized for the study were Academic Ability Test (AAT), Non-academic Ability Evaluation Questionnaire (NAAEQ) and an adapted version of Thurstone’s Interest Schedule.

Statistical Techniques

The statistical techniques used were t-test and chi-square and correlation.

Findings:

The major findings of the study were:

(1) The academic and the vocational stream students differed markedly in their academic abilities, the academic stream students being higher.

(2) As far as the non-academic abilities were concerned, the academic stream students were better in leadership, writing and science talent and the vocational stream students were better in social service, music and games and sports.

(3) The academic and the vocational stream students were quite different in their distribution of primary interests. Most of the academic students evinced primary interest in the areas of physical science and biological science whereas the vocational stream students indicated primary interests in the areas of business and computations. Students of both the streams showed equal interest in the musical area.
(4) Students of both the streams indicated marked differences in academic abilities, namely, vocabulary, verbal reasoning and numerical ability, irrespective of their area of primary interests.

(5) Students of the academic stream who displayed primary interests in physical science and in being executives were high in their abilities of leadership, science talent and writing. Similarly, students of the vocational stream who displayed primary interest in computational, literary, humanitarian and musical areas were higher in their non-academic abilities like games and sports, social service and music.

(6) The success criterion variables, namely, quarterly marks, final marks and teacher ratings, were significantly related to the academic abilities but not to the non-academic abilities both in the case of the academic and the vocational stream students.

(7) The choice of the stream by the students was not dependent on their socio-economic status.

MARY JOHN

Future Time Perspective, Self Concept and Vocational Interests of Adolescents

Ph.D.

Psy.

Madras U.
1981

Objectives:

The main objectives of the study was to investigate the extent to which institutionalized adolescents differed from non-institutionalized adolescents on future time perspective, self-control and vocational interests.

The extent of extension of thought into the future, the density, organization and coherence of future outlook, the extent one could think of moving forward of future and the degree of concern with future events were the aspects studied under future time perspective. The stability of self-concept and the discrepancy between the actual and the ideal self-concept were studied. The three variables were studied with reference to sex and social class of the institutionalized and non-institutionalized adolescents.

The Tools:

Future time perspective (FTP) was measured using three tests; Wallace Future Time Events Test, Eson Test of Recording 20 Different Things that the subject thought about or talked about during the preceding two weeks and their time perspective, past, present or future and Cattell Circles Test. Sharma`s Self-Concept Inventory was used to study the self-concept and Kulshreshta Vocational interest Record to study the vocational interests.

The Sample:
A stratified sample of 720 students was selected, 540 non-institutionalized and 180 institutionalized. The non-institutionalized adolescents were drawn from three different social strata: upper, middle and lower.

Statistical Techniques

Analysis variance, correlations and factor analysis (principal factor method with varimax rotation) were used for data analysis and hypothesis testing.

Findings:
The main findings were:

(1) The institutionalized and lower income groups adolescents had shorter future time perspective and lower coherence than the middle and upper income group adolescents.
(2) The middle class adolescents had a more extended future orientation than the other groups.
(3) Adolescents listed more present events than future or past events,
(4) Lower income group boys listed more past events than present or future events. (5) Institutionalized adolescents had low temporal relatedness than the non-institutionalized.
(6) Institutioned adolescents were most past-present oriented in comparison with the upper and middle class adolescents who were present-future oriented.

(7) Four significant factors emerged from factor analysis with high loadings on spontaneous extension, FTPs core, past predominance, and coherence.

(8) The ideal-actual discrepancy in self-concept was more for the institutionalized than for the non-institutionalized lower group.

(9) The middle class adolescents were more stable in their self-concept than those from the upper class.

(10) The lower income group adolescents evidenced higher interest in scientific pursuits than the institutionalized.

(11) The institutionalized evidenced interest in fewer vocations than the lower income group.

(12) Vocational interests of adolescents were directly related to their socio-economic status.

The implications

The implications of the study are:

(1) The structuring of institutions and re-education of caretakers in the best interests of the inmates were required.

(2) The institutional environment should be rectified through the development of a community-oriented approach.
(3) Caretakers in institutions should attempt to enhance the growth of self-esteem.
(4) More funds and talented personnel should be allocated to institutions.
(5) Institutionalization should be the last resort for a child in need; possibilities of family aid should first be explored.

Study of the Relationship between Intelligence Level of Standard 10 Students of Rajkot City to Their Vocational Aspiration and to Their Fathers’ Education and Occupation,

Dept. of Edu.,
Sau. U.,
1981 (Sau. U. – financed)

Objectives:

The study had the objective of analysing the relationship between the level of intelligence and

(1) the vocational aspiration of the subjects,
(2) the fathers’ education and
(3) the fathers’ occupations.
The Sample: Involving the three independent variables (vocational aspiration, father’s education and father’s occupation), nine null hypotheses were framed, three for the total subjects (irrespective of sex), three for boys and three for girls only. From twenty-two out of the forty-two high schools of Rajkot City, 1,143 students of standard 10 were selected, including 718 boys and 425 girls. The schools and their divisions were selected randomly. Out of the selected twenty-two schools, eleven were boys’ schools, six were girls’ schools, and five were coeducational schools.

The Tools:
The intelligence level of the subjects was determined with the help of Desai-Bhatt Group Test Intelligence. Certain data, such as associated name, age, sex, vocational choice, fathers’ education and father’s occupation, were collected on data sheet. The null hypotheses were tested with the help of t-test. Overall relationship of the intelligence level with the vocational aspiration, father’s education and with father’s occupation were checked through chi-square test.

Findings:
The major findings of the study were:

(1) Boys with higher level of intelligence selected higher-level occupations.

(2) Girls who aspired for higher-level vocations possessed higher level of intelligence.
(3) The vocational aspirations of the subjects (irrespective of sex) were related to their intelligence level; the subjects of higher intelligence level possessed higher vocational aspiration. (4) The intelligence level of boys with better educated fathers was higher than that of boys with less educated fathers.

(5) Girls having higher educated fathers possessed higher intelligence level than the girls having lower educated fathers.

(6) The intelligence level of the subjects (irrespective of sex) had relation with the educated of their fathers; the higher the educational level of fathers, the higher was the intelligence level of their students.

(7) The intelligence level of boys having fathers in higher occupations was higher than that of boys with fathers in lower occupations.

(8) The intelligence level of girls with fathers in higher-level occupations was higher than that of girls with fathers in lower occupations.

(9) The intelligence level of subjects (irrespective of sex) was related with the occupation of their fathers; the students of fathers working in higher-level occupations had higher level of intelligence.

TOONG, S.,

Vocational Aspirations in relation to Creativity, Personality, Achievement and Socio-economic Status of High School Students,
Ph.D.
Edu.,
Pan. U.,
1982

Objectives:

The main objective of the study was to answer the questions

(1) whether school students aspired differently in relation to different fields and levels of vocation.

(2) whether vocational aspirations of students were realistic or unrealistic,

(3) whether significant differences existed between realistic and unrealistic aspirants for vocations in respect of creativity, personality, achievement and socio-economic status, and

(4) whether creativity, personality, achievement and socio-economic status taken separately accounted for significant differences among groups aspiring for different fields and levels of vocations.

The Sample:

A sample of 1039 students of class nine was selected on the basis of multi-staged randomization of clusters from 12 urban higher secondary schools of three district headquarters of Punjab.

The Tools:
The students were administered the following tools: the Torrance (1966) Test of Creative Thinking, the Jalota (1972) Group Test of General Mental Ability, Raven’s (1960) Standard Progressive Matrices, the Cattell (1963) High School Personality Questionnaire-Hindi version, the Chadha (1979) Vocational Aspiration Blank, and the Chadha (1979) Classificatory System of Occupation. The percentage of total score obtained by students in the eighth grade public examination was taken as the measure of achievement.

Findings:

The findings of the study were:

(1) The highest percentage of students aspired for the teaching and welfare field; the lowest percentage of students aspired for artistic fields, close to which was also the percentage of students aspiring for a literary field.

(2) The highest percentage of students (47.65 per cent) aspired for level-2 vocations and level-1 vocations ranked 3 with 24.83 per cent aspiring for it.

(3) Although the highest percentage of students in the field of engineering and health aspired for high-level vocations and in the teaching-and-welfare field the highest percentage of students aspired for low-level vocations, yet the percentage of students aspiring for medium level vocations in these fields was significantly higher than the percentage of students aspiring for low level vocations in the fields of engineering and health, and high level vocations in teaching and welfare field.
(4) The significant percentage difference was observed between realistic and unrealistic aspirants for vocations.

(5) On verbal fluency, flexibility, originality and verbal creativity total, significant mean differences were observed between ten, one, four and two pairs of combinations respectively, out of 55 possible pairs of comparisons for groups aspiring for eleven fields of vocations.

(6) The significant mean differences were observed between nine, five, three and four of the pairs of combinations out of 55 possible comparisons for groups aspiring for eleven fields of vocations on figural fluency, flexibility, originality and figural creativity totals respectively.

(7) The aspirants for an artistic field obtained higher scores on all verbal and figural creativity measures, barring verbal originality, which the aspirants for the health field got higher scores as compared to aspirants for other fields of vocation.

(8) The levels by field analysis on verbal creativity measures revealed significant mean differences among the aspirants for different levels within three vocational fields, namely, health, administrative and clerical and protective fields out of eight vocational fields.

(9) For fields taken conjointly significant mean differences were shown among levels on figural fluency, flexibility and originality.
(10) The level by fields approach showed significant mean differences among the aspirants for vocational levels within five vocational fields, viz., engineering, health, administrative and clerical services and outdoor, out of eight fields of vocations. (11) The mean differences obtained on personality factors revealed that out of 14 personality factors only eight (B,D,E,F,G,H,Q3 and Q4) significantly differentiated between 11, two, one, 13 and five, and one pair of combinations out of 55 possible pairs of comparisons for groups aspiring for different fields of vocation.

(12) For the fields taken conjointly, the students who aspired for level-1 vocations differed significantly, with higher scores on personality factors B and C from those who aspired for level-2 vocations. But the aspirants for level-2 vocations achieved significantly higher scores on personality factor P and J than the aspirants of level-1 vocations.

(13) The level by field analysis showed that all personality factors, except the personality factor Q4, differentiated significantly among groups of students aspiring for vocational levels within the four fields only-engineering, health, administrative and clerical, and services.

(14) In respect of achievement, significant mean differences were elicited between ten pairs of combination out of 55 possible comparisons for aspiring for different fields of vocations.
(15) For fields taken conjointly, significant mean differences were observed in respect of achievement among aspirants of all three vocational levels.

(16) The level by field analysis on achievement depicted significant mean differences among the aspirants of different vocational levels within all vocational fields except the outdoor field.

(17) On measures of socio-economic status, significant mean differences were observed between 17 pairs of combination out of 55 possible comparisons for aspirants for fields of vocations.

(18) For fields taken conjointly significant mean differences were revealed among all the three vocational levels on the measure of socio-economic status.

(19) The level by field approach depicted significant mean differences in socio-economic status among the aspirants of different levels of vocations within all fields, except the outdoor field.

(20) Non-significant mean differences were observed between realistic and unrealistic vocational aspirants on all the measures of verbal and figural creativity. (21) In case of personality factors, only three out of 14 personality factors (C, H and Q3) significantly differentiated between realistic and unrealistic aspirants of vocations, with higher mean scores in favour of realistic vocational aspirants. On achievement and socio-economic status too, significant mean differences were found between both the realistic and
unrealistic groups of vocational aspirations, falling in favour of the realistic group.

(22) On all measures of verbal and figural creativity non-significant mean differences were found, except for verbal flexibility which revealed significant mean differences between realistic (low intelligence and low vocational aspirations) and unrealistic groups (low intelligence and high vocational aspirations).

SHARMA, K.D.

Construction and Standardization of a Vocational Interest Inventory in Hindi for the Secondary School Pupils of Haryana

Ph.D.

Edu.

Kur. U.

1982

Objectives: The main objective of the study was to construct and standardize a vocational interest inventory for class 10 students of Haryana.

The Tools:
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 in 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 consideration. The items belonged to ten interest areas, viz., outdoor, mechanical, scientific, literary, artistic, musical, social service, clerical, business and management and household.

Samples

The first draft of the inventory was administered to 100 students of class 10 of school in Haryana. The items were scored by allotting 2, 1 and 0 for ‘like’, ‘indifferent’ and ‘dislike’ responses respectively. The analysis of items was done on twenty-seven per cent 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 students (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 t- ratio for difference between the means of criterion group (persons who were already in service) and normal group (students ) which was significant. The coefficient of correlation between the scores of criterion and normal groups was found to vary between 0.70 and 0.90 for different interest areas. The final form of the interest inventory was found to be a reliable and valid tool for knowing the interests of secondary school students of Haryana.

19      BHATNAGAR, H.,

A Study of Occupational Choices of Adolescent Girls and Factors Influencing Them
Ph.D. Edu.
HPU
1983

Objectives:

The main aims were

(1) to find out the occupational choices of the girls,

(2) to find out the factors which influenced the occupational choices of girls,
(3) to study the extent of divergence between the occupational choices and vocational interests of girls, and

(4) to study the differences among different groups of female students in occupational choices and factors influencing them, along with their interests.

The Tools:

An open-ended list containing 199 occupations for women was prepared on the basis of a survey conducted in 100 public and private establishments. Similarly, a list of factors influencing occupational choices was also finalized on the basis of an experimental study. An interest inventory in 11 areas was also constructed, validated, and standardized.

Findings:

The findings were:

(1) The girls had diversified occupational choices.

(2) The highest factor influencing occupational choices was ‘interest’, followed by ‘serving humanity/society’, ‘serving poor/backward’, ‘serving sick/disabled’, ‘to see different places’, ‘to please oneself’, ‘to be a model for youngsters’, ‘economy’, and so on.

(3) Only ten percent of the girls were able to make occupational choices in accordance with their vocational interests.

(4) No significant difference was found amongst urban and semi-urban girls in the congruence of their occupational choices and vocational interests.
However, girls belonging to higher income group were found to have more congruence in their occupational choices and vocational interests.

20

JOSHI, R.R.,

An Investigation into the Interest of Higher Secondary School-going Pupils in the Context of Some Psycho-Socio Variables

Ph.D.

Edu.

SPU

1983

Objectives:

The objectives of the study were

(1) to study the interests of the higher secondary school-going pupils, and
(2) to study the difference in the interests of these students in relation to their parents’ education, socio-economic status, location and personality traits, namely, emotional stability and self-sufficiency.

The Tools:

The Interests Inventory constructed and standardized by J.C. Parikh, Socio-economic Scale constructed and standardized by Udai Pareek and G. Trivedi for rural areas, and Socio-economic Scale constructed and
standardized by Kuppuswamy for urban areas were used for data collection. Besides, the High School Personality Questionnaire (HSPQ) for 12 to 18 years by R.B.Cattell translated into Hindi by S.D.Kapoor and K.K. Mehrotra was also used for collecting data about two traits of personality.

The Sample:

The data were collected from a sample of 1000 students selected at random.

Statistical technique:

A factorial design was formulated and analysis of variance was used for drawing conclusions.

Findings:

Some of the major findings were:

(1) The pupils of the urban area were more interested in administrative, computational, scientific and literary topics than those of the rural area.

(2) The pupils of the higher socio-economic status group were more interested in the administrative, natural and outdoor, scientific and fine arts topics than those of the lower SES group.

(3) The children of highly educated parents were more interested in the administrative, computational, mechanical, natural and outdoor, scientific and fine arts topics than those of less educated parents.
(4) The pupils having a high score on the personality traits of emotional stability were more interested in mechanical areas than those having a low score on emotional stability.

(5) The pupils having a high score on the personality trait of self-sufficiency were more interested in the computational, scientific, fine arts and literary areas than those having a low score on self-sufficiency.

(6) Area of interest and socio-economic status factors appeared to be dependent on each other so far as administrative, fine arts and literary interests were concerned, (7) Area of interests and parents’ education factors were found to be dependent on each other so far as the computational, mechanical and teaching interests were concerned.

(8) Socio-economic status and parents’ education were found to be dependent on each other so far as the mechanical interests were concerned.

(9) Socio-economic status and emotional stability were dependent on each other so far as the fine arts were interested concerned.

(10) Parents’ education and self-sufficiency were found to be dependent on each other so far as the computational and teaching interests were concerned.

(11) Emotional stability and self-sufficiency were found to be dependent on each other so far as the mechanical interests was concerned.
(12) The interaction of area of interest, socio-economic status and parents’ education were significant at .01 level in the case of natural and outdoor and teaching interests, and at .05 level in the case of scientific interests.

(13) The interaction of area of interest, socio-economic status and self-sufficiency was significant at .05 level in the case of scientific interests.

(14) The interaction of socio-economic status, parents’ education and emotional stability was significant at .05 level in the case of administrative and at .01 level in the case of computational interests.

(15) The interaction of SES, parents’ education and self-sufficiency was significant at .01 level in the case of computational, mechanical and literary interests.

(16) The interaction of parents’ education, emotional stability and self-sufficiency was significant at .05 level in the case of computational interests.

(17) The interaction of parents’ education, emotional stability and area of interests was significant at .01 level and .05 level in the case of administrative and natural and outdoor interests respectively.

(18) The interaction of emotion stability, self-sufficiency and area of interest was significant at .01 level in the case of scientific interests.

(19) The interaction of area, parents’ education and emotional stability was significant at .05 level in the case of mechanical interest.
(20) The interaction of area of interest SES, parents’ education and self-sufficiency was significant at .05 level in case of administrative and computational interests. (21) The interaction of parents’ education, emotional stability, self-sufficiency and SES was significant at .05 level in the case of mechanical interests.

21 TOMAR, J.P.S.,

A Study of Occupational Interest Trends of Adolescents and their Relation with Prevalent Job Trends of Employment in Eastern Uttar Pradesh

Ph.D. Edu.

Avadh U.

1985

Objectives: The investigation was designed to study the occupational interest trends of adolescents in relation to sex, rural/urban residence, socio-economic background and prevalent job trends of employment in Eastern Uttar Pradesh.

The Tools:
Chaterjee’s Non-language Preference Record was used for assessment of occupational preference and a Socio-Economic Status Scale was used for assessment of socio-economic status.

Sample:

The sample consisted of 600 students (400 boys and 200 girls) studying in class 12 of an intermediate college in Eastern Uttar Pradesh.

Findings:

The main findings of the study were:

(1) The dominant occupational interest trends of boys; in descending order were agriculture, literature, fine arts, science, crafts, outdoor activity, technology, medicine, sports and household matters.

(2) The dominant interest trends of the girls, in descending order were fine arts, literature, crafts, technology, science, household matters, sports, outdoor activities, agriculture and medicine.

(3) The dominant occupational interest trends of urban adolescents, in descending order, were literature, fine arts, science, crafts, sports, outdoor activities, technology, medicine, household matters and agriculture.

(4) The dominant occupational interest trends of the rural adolescents were agriculture, fine arts, literature, technology, crafts, science, outdoor activities, household tasks, sports and medicine.
(5) There were marked differences in occupational interest trends of adolescents belonging to different socio-economic groups.

(6) There was conformity between the occupational interest trends of adolescents and the prevailing job trends of employment.

A Study of Vocational Aspirations as a Function of Aptitudes, and Motivational Patterns among the Boys and Girls Studying in 9th, 10th and 11th Grades in Nagpur District,

Ph.D.

Edu.,

Nag. U.,

1986

Objectives: In this research an effort was made to study how aptitudes, motivation, socio-economic status and aspirations were related to one another. The hypotheses examined were:

(1) Vocational aspirations were essentially consistent with aptitudes.

(2) High scores on different types of aptitude will significantly influence the aspiration regarding type of vocation.
(3) There is an interaction between achievement motives and vocational aspirations.

(4) Hierarchy of motives leads to hierarchy of vocational aspirations.

(5) Some motives may form a cluster/pattern and function collectively to determine vocational aspirations.

The Sample:

The sample for the study comprised 1080 students of classes 9, 10 and 11 studying in Nagpur district including Nagpur city.

The Tools:

The tools used were the Occupational Aspirations Scale (OAS) by Grewal, the Differential Aptitude Tests Battery (DAT) by cattell (adapted by ), the Achievement Motivation Test by Prayag Mehta, Edward’s Personal Preference Scale (EPPS) BY Edward (adapted by Tripathi), and the Socio-economic status (SES) Scale prepared by the investigator. Statistical procedures used to analyse the data were coefficient of correlation, partial correlations, multiple regression equations and cluster analysis.

Findings:

The major findings were:

(1) The first hypothesis was only partially supported by the study.
(2). It was found that the relationship between socio-economic status and vocational aspiration was predominant. It seemed that vocational aspirations were not merely a function of aptitudes but a function of the socio-economic status of the subjects.

(3) The positive and significant values of r’s between vocational aspirations and achievement motivation suggested that achievement motivation was likely to generate the vocational aspirations of the subjects.

(4) The hierarchy of needs was associated with hierarchy of vocational aspirations of the school-going youth.

(5). Some clusters of needs were found to be associated with vocational aspirations.

(6). The n achievement, n deference, and n nurturance constituted the most closely knit cluster of needs out of the 15 needs studied to determine the vocational aspirations of boys.

(7). The n achievement, n autonomy and n charge formed a cluster associated with vocational aspirations of girls.

(8). The socio-economic status of boys associated well associated girls contributed most considerably to vocational aspirations.

(9). Of the eight aptitudes studied had considerably high positive association with vocational aspirations.
Vocational aspirations were generated more by the socio-economic status of subjects than any other variable studied in the project.

The educational implications

The educational implications are:

1. The school-going youth need to be made realistic as far as vocational aspirations are concerned. If he knows the quality and magnitude of his aptitudes at the school stage, his aspirations will be consistent with his capabilities.

2. Once parents know the types of aptitudes their students have, they are likely to generate in them aspirations consistent with the aptitudes of the youth.

3. Students belonging to the low socio-economic status group need to be exposed to a greater range and variety of job possibilities.

4. The level of achievement motivation of school-going youth needs to be controlled so far as its quality, magnitude and direction are concerned.

5. There should be programmes like work experience and visits to places of work, so that the youth has a taste of world work in its mundaneness.

6. Teachers and parents should devote serious thought to the causes of the low level of aptitudes of school-going youth.

7. If the needs associated with level of aspirations are accepted as the causative factor, then the educational planners, policy markers, teachers and
parents should evolve ways and means to induce needs as are associated with realistic vocational aspirations of school-going youth.

23 Gautam, Vimalesh.
An Investigation into the Educational and Vocational Interests of Students at the Delta Stages, and their Implications for Future Curricula.
Ph. D., Edu.
Uni. Of Lucknow.
1988

Problem:
The study makes an attempt to investigate the educational and vocational interests of students of classes 8 and 10 so as to arrive at implications for their future curricula.

Objectives:
(1) To compare the educational and vocational patterns of students at the two delta stages, (2) to see the effect of sex difference on the educational and vocational interests of students, (3) to compare the educational and vocational interests of urban and rural students, and (4) to arrive at the implications of the educational and vocational interests of students at the delta stages for their future curriculum.

Methodology:
One thousand students (600 of the class 8 and 400 of class 10) were included in the sample by following the random sampling procedure. Of those selected from class VIII, 300 (150 boys and 150 girls) were from rural areas, and an equal number from urban centers. Of the class 10 students, all the 400 (200 boys and 200 girls) belonged to the urban areas as there were no schools of the 10+2 pattern in the rural areas.

The tools used included the Educational and Vocational Interest forms of S.P. Kulshrestha and an Information Form developed by the investigator. The statistical techniques used for data analysis included mean, SD, correlation and ‘t’ test.

Major findings:

(1) A significant correlation was found in the preference orders of boys of classes 8 and 10 in both educational and vocational interest areas. (2) No significant correlation was found in the preference orders of girls of classes 8 and 10 in the educational interest area, while in the vocational interest area a significant correlation was noted. (3) In most of the interest areas, significant differences were noted between the scores of the two classes. (4) At the class 8 level, no significant correlation was found in the interest preference orders of boys and girls in both educational and vocational interests areas, which means that the two groups had different interest preferences. (5) At the class 10 level, no significant correlation was found in
the preference orders of boys and girls in educational interests, while in the
field of vocational interests a significant correlation was noted between
these groups. (6) Significant differences were found between the scores of
boys and girls in all the areas of educational and vocational interests. (7) A
significant correlation was noted in the preference orders of urban and
rural students of class 8 in both educational and vocational interest areas,
which means that their interest preferences were similar. (8) Significant
differences in most of the interest areas were found between the scores of
rural and urban boys, while in case of girls significant differences could be
noticed only in a few interest areas. [RJS 0685]

24    Sodhi, T.S.

Vocational Interests and Occupational Choices of Adolescent Girls of
Chandigarh.


1988

Problem:

The study centres around the problem of congruence of vocational interests
and occupational choices of girls.

Objectives:

(1) To study the extent of congruence between the occupational choices and
vocational interests of girls, and (2) to study the extent of the congruence
between the occupational choices and vocational interests of adolescent girls on some demographic variables.

Methodology:

A stratified random sample of 1,015 adolescent girls of class 10 in 20 schools from the revenue area of the Union Territory of Chandigarh was selected.

The tools used were an Interview Schedule and an Interest Inventory developed by the author. Percentages and ‘t’ values were calculated to treat the data.

Major findings:

1. A very small fraction of adolescent girls was able to make correct occupational choices in accordance with their vocational interests.
2. The occupational choices and vocational interests were comparatively more congruent for girls of urban background and those belonging to the high income group as against their counterparts from the semi-urban areas and the low income group. [JPM 1422]

25 Gaikwad, Kanchanbala S.

A Descriptive and an Experimental Study of Educational and Vocational Choices of the Students after Passing Standard 10, and of the Efficacy of Guidance Services at Different Levels
Ph.D., Edu.

Univ. of Pune.

1989

Problem:
The purpose of the investigation is to study the factors that affect standard 10 students’ decision making related to education and vocation and also to study the effect of vocational guidance on their choices.

Objectives:
(1) To study the relevant factors that affect students’ choice-making namely, the agencies parallel to guidance services, parent’s influence, information services from career masters or counselors, counselling services, and (2) to study the usefulness of exposure of individual potentialities in a group and the effectiveness of group guidance and the students’ views of self-concept.

Methodology:
The sample comprised 951 students from five school with career masters, 590 students from seven schools with no career masters, and 106 students from schools with career masters and counselors.

Questionnaires were used for students, career master and counselors.

Statistical techniques such as mean percentages, chi-square and ‘t’ test were used for the purpose of analysis of data.

Major findings:
Most of the students from different socio-economic backgrounds selected the medical and technical streams. Students from socio-economic backgrounds selected commerce and fine arts. Students who had interest in a particular field did not possess knowledge about the educational and vocational opportunities in the field. Students felt that their choices were appropriate for their aptitudes. Students’ choices were related to their friends’ choices. Teachers and career masters played a significant role in students’ choices. Students with high intelligence showed definiteness and students with low intelligence were not certain about further courses. The higher the intelligence, the more was the occupational information while the lower the intelligence, the less the occupational information gained by students. Due to their parents’ wishes by students chose courses for which they had neither aptitude nor the required level of intelligence. Students’ choices were not related to interest, aptitude or intelligence. [ASB0056]

Chander. Prabhat

A Study of the Educational and Vocational Interest Pattern of Tribal High School Students and their Relationship with Intelligence, Socio-Economic Status and Educational Environment.

Ph.D., Edu.

Himachal Uni.
Problem:

This is a study of the educational and vocational interests pattern of tribal high school students and their relationship with intelligence, socio-economic status and educational achievement.

Objectives:

(1) To construct and standardised an educational and vocational interest inventory for measuring the vocational interests of tribal high school students, (2) to study the relationship of the educational and vocational interest patterns of tribal high school students with their intelligence, (3) to study the relationship of the educational and vocational interest patterns of tribal high school students with their socio-economic status, (4) to study the relationship of the educational and vocational interest pattern of tribal high school students with their educational achievement, and (5) to study the interaction effects among the variables under study, such as sex, intelligence, socio-economic status and educational achievement.

Methodology:

A sample of 232 tribal high school students was drawn from high and senior secondary schools of District Kinnaur of Himachal Pradesh, using a multistage sampling method. The educational and vocational interest inventory constructed and standardized by the investigator, the
general mental ability test by Jalota and the socio-economic status scale by Kaul were used for collecting data. Analysis of Variance (2 x 2x2x2) was used to analyse the data by taking the educational and vocational interest pattern scores as the dependent variable and two levels of sex, intelligence, socio-economic status and educational achievement as the independent variables.

Major findings:

(1) The tribal high school boys were found to be higher in commerce and medical and lower in the home science and fine arts educational interest patterns as compared to the girls. (2) High-intelligent students were found high in the home science and low in the commerce educational interest patterns as compared to low-intelligent students. (3) Students belonging to the high socio-economic status scored high in the mechanical and low in the humanities and arts educational interest pattern as compared to the low socio-economic status students. (4) High and low achievers from the group of tribal students did not differ significantly with regard to their educational interests patterns. (5) The interaction effects of sex x intelligence x socio-economic status x educational achievement on the commerce educational interest patterns were found to be significant, whereas in the case of other areas they were not significant. (6) The tribal boys were found to have scored high in the business and scientific interest patterns and low
in the literacy, artistic and music vocational interest patterns as compared to the tribal girls. (7) High-intelligent students achieved higher scores in the social and lower scores in the mechanical and business vocational interest patterns as compared to the low-intelligent students. (8) Students with high socio-economic status were found to score high in the music and teaching and less in the mechanical and clerical vocational interest patterns as compared to the low socio-economic status students. (9) High achiever tribal students showed high scientific vocational interest patterns as compared to low achievers. (10) The interaction effects of different variables on the various vocational interest pattern were found to be significant. [LK 0245]

27 Singh, Ibotombi H.

A Study of the Vocational Preferences of High creative and low creative high school tribal pupils in Kohima and Mokokchung districts, Nagaland.

Ph.D., Edu.

North-Eastern Hill univ.

Problem:
This study focuses on finding out the vocational preferences and levels of creative thinking of class 9 students from the Ae and Angami tribes, and also on finding out the differences in vocational preferences between the high creative and low creative among those students.
Objectives:

(1) To identify the high creative and the low creative among the high school tribal students in Kohima and Mokokchung Districts, (2) to compare the vocational preferences between the high creative and low creative among the Ae and Angami pupils, and (3) to suggest ways to identify creative talent among Naga tribal students and to provide educational and vocational guidance to them.

Methodology:

From 3,390 pupils, an initial representative sample of 1,000 students of class 9 from the Ae and Angami communities was used to generate final sample of 320 pupils, (160 high-creative and 160 low creative pupils). the tools used were a Battery of verbal and Non-verbal Tests of Creative Thinking called the Nagaland Tests of Creative Thinking (NTCT), Vocational Prestige Scale, Personal Information Proforma, and an unstructured Interview. Mean, SD, ‘t’ test were used for the analysis of data.

Major findings:

(1) There was no significant difference between the Ae and Angami tribal high school pupils, both in their levels of creative thinking and their preference for prestigious vocations. (2) High creative pupils from both the tribal groups generally showed a preference for prestigious vocations. (3) No
significant difference was found between rural and urban pupils in their levels of creative thinking. [PPG 0184]

28 Pennamma, V.V.
Patterns of Occupational Choices of Secondary School Pupils and School Leavers
Ph.D., Edu.
Uni. of Kerala.
1991
Problem:
The study attempts to identify the different types of occupational choices of secondary school pupils and school leavers and to compare the pattern of choices of the two groups.
Objectives:
(1) To measure the relationship between the occupational choices of school pupils and school leavers, (2) to compare the occupational choices of school pupils and school leavers, (3) to identify the factors which are related to the occupational choices of school pupils and school leavers, (4) to describe the patterns of the occupational choices of school pupils and school leavers, and (5) to identify and compare the reasons for the occupational choices of school pupils and school leavers.
Methodology:

Seven hundred and thirty-six school pupils and 400 school leavers formed the sample of the study.

The tools used were Questionnaire A, Part 1 and 2 for school leavers and school pupils, Questionnaire B for school leavers only, the Kerala Socio-economic Status Scale, the Family Planning Climate Inventory, and the Self-Esteem Inventory. Correlation coefficients, mean and SD were used for the purpose of analysis of data.

Major findings:

(1) School pupils and school leavers differed in their choices of ideal, preferred and actual occupations for the total sample, and for the different sub-sample boys and girls, urban and rural pupils, forward and backward, Scheduled Tribe pupils and also for high and low socio-economic status, family climate, self-esteem and maladjustment groups. (2) School pupils and school leavers exhibited similar patterns of relationship between ideal and preferred, ideal and actual and preferred and actual, occupational choices, and repeated relationships for all sub-sample studied. (3) The majority of school pupils and school leavers differed in their reasons for their occupational choices on ‘interest in work’ and ‘financial reasons’, respectively. [VR 1655]
2.5.2 Studies in Abroad

1 Regulation of Learning in Vocational Education: An Exploratory Study

Anne Cordingley, Yok Chi Lai, Mark Pemberton, Julie Smith and Simone Volet

*Murdoch University*

**Sample**

An intact class of 27 students from a vocational education setting participated in the study. Students were in the fourth semester of a two year Associate Diploma of Health Sciences (Enrolled Nursing) Course

**Instruments**

Three instruments were included in the questionnaire: Regulation of Learning Preference (ROLP); Reported use of self-regulation strategies; Tasks-related perceptions of study. *Performance*

Students' performance on the essay and the test were obtained with students’ permission, from their teachers.

**Results**
(i) Development of a scale to measure students’ preference for regulation of learning in the classroom

The majority of students preferred a more teacher directed regulation of learning.

(ii) Relationship of students’ preference for regulation of learning to their reported use of self-regulation strategies, task-related cognitions and achievement

The reported strategies were quite different for each task. Organising and transforming, seeking information, and goal setting and planning were used essentially to complete the essay whereas, memorising and rehearsing and revising (reviewing) records, were used only to prepare for the test. Only a few students reported self-evaluation, seeking assistance and monitoring progress self-regulated strategies.

(iii) Comparing the profile of our group of vocational education students to Zimmerman’s high and low achievers

Vocational students’ Strategy use and Strategy frequency measures varied respectively from .04 to .81 (total 3.46) and .04 to .96 (total 3.74). Overall the group of vocational students was more comparable to Zimmerman & Pons' low achievers (Strategy use total of 3.58 and Strategy frequency total of 4.24) than
their high achievers (Strategy use total of 5.14 and Strategy frequency total of 9.65).

2 Comparison of Vocational and Identified-Gifted High School Students

On the Over excitability Questionnaire

Jane Piirto and John Fraas (247 Dwight Schar College of Education, Ashland University, Ashland, OH 44805, USA)

Published by: http://www.sagepublications.com

Two groups of adolescents (N = 114), 61 identified-gifted adolescents (M = 22, F = 39) and 51 vocational school adolescents (M = 27, F = 26), were compared on the Over excitability Questionnaire. Each of the five over excitability (OE) scores—Psychomotor, Sensual, Imaginational, Intellectual, and Emotional—was subjected to a two-way ANOVA by classification and gender. Any statistically significant interaction effect was further analyzed by testing the group means with six two-group comparison tests. The analyses produced the following results: (a) Differences among the Psychomotor, Sensual, and Emotional OE means were not statistically significant, and (b) the Imaginational and Intellectual OE means of the gifted male students were significantly higher than the means of the vocational female students, vocational male students, and gifted female students. The effect sizes were classified as large. A qualitative textual analysis was also conducted. The results were compared with another study of the same gifted population that
used the Over excitability Questionnaire-II.

**Purpose of Study and Participants**

*Participants*

Two groups of adolescents ($N = 114$) including 61 identified-gifted adolescents ($M = 22, F = 39$, mean age 15.9) and a group of 51 adolescents who attended a vocational high school ($M = 27, F = 26$, mean age 16) were compared.

*Method*

*Hypotheses*

Because the students were identified by their gender and classification, three null hypotheses were constructed for each of the five OEQ scores.

For example, the three null hypotheses for the Psychomotor scores were as follows:

1H0 : The mean Psychomotor scores do not differ between the vocational and gifted students.

2H0 : The mean Psychomotor scores do not differ between the female and male students.

3H0 : An interaction effect does not exist between student classification and gender when accounting for the variation in the Psychomotor scores.

Four additional sets of three null hypotheses were posed for the four remaining OEQ scores. Thus, a total of 15 null hypotheses were posed in this study.
Analytical Procedures

Each set of three null hypotheses was statistically tested through the use of a two-way ANOVA.

Results

Quantitative Results

Test of variances and descriptive statistics. A review of each of the F tests produced by Levine’s Tests of the Psychomotor variances (p = .57) and Sensual variances (p = .11) revealed that the differences among the group variances were not statistically significant. Thus, these dependent variables were not transformed, nor were the total sample size reduced for the analyses of these variables to produce proportional gender-by-group cell sample sizes. The entire sample of 114 participants was used in the two-way ANOVAs of those two types of scores.

A review of the F tests produced by the Levee’s Tests of the group variances for the Imaginational scores (p < .01), Intellectual scores (p < .01), and Emotional scores (p < .01) indicated that the differences among the group variances were statistically significant. Various types of transformations of these three types of scores did not result in no significant F tests of the differences in the variances. Thus, two-way ANOVAs for these three types of scores were applied to a reduced sample. Specifically, 5 vocational male students and 13 gifted female
students were randomly deleted from the sample to produce a sample containing 26 vocational females, 22 vocational males, 26 gifted females, and 22 gifted males.

The $F$ test of the interaction effect between student classification and gender was not statistically significant ($F = 0.01, p = .91$). Because the interaction effect was not statistically significant, the statistical tests of the student classification and gender main effects were examined. Neither the $F$ test of the student classification main effect ($F = 0.92, p = .34$) nor the gender main effect ($F = 1.35, p = .25$) was significant. Thus, differences among the Psychomotor mean scores of the groups were not statistically significant. The partial $\eta^2$ values for the interaction effect, the student classification main effect, and the gender main effect were .01 or less, which are classified as small.

**Sensual scores.** The $F$ test of the interaction effect between student classification and gender for the Sensual scores was not statistically significant ($F = 1.28, p = .26$), and its effect size (partial $\eta^2 = .01$) was classified as small. Based on this result, the statistical tests of the student classification main effect and gender main effect were examined. The $F$ tests of the student classification main effect ($F = 3.06, p = .08$) and the gender main effect ($F = 0.44, p = .51$) were not statistically significant. Thus, the differences among the Sensual mean scores of the groups were not statistically significant. The partial $\eta^2$ value for the interaction effect was .03, whereas the partial $\eta^2$ square values for the gender
main effect and interaction effect were .01 or less. All three partial η² values were classified as small.

*Imaginational scores.* The $F$ test of the interaction effect ($F = 11.19, p < .01$) for the Imaginational scores was statistically significant. Its effect size (partial η² = .11), which was classified as moderate, was larger than all but one of the effect sizes reported by Piirto et al. (2008). Because this interaction effect was significant, the statistical test results of the main effects were not interpreted, but rather the interaction effect was plotted and the six two-group comparisons of group means were conducted.

**Discussion**

*Discussion of Between-Group Differences*

In comparing these results with the theoretical discussions about OEs (i.e., that those who are gifted are more intense, having high OEs), the presence of significant group differences in Intellectual, Imaginational, and Emotional OE were expected.

**Identified-Gifted Adolescents Vocational High School Adolescents Textual Commentary**

1. Do you ever feel really high, ecstatic, or incredibly happy? Describe your feelings.

2. What has been your experience of the most intense pleasure?

3. What are your special daydreams and fantasies?
4. What kinds of things get your mind going?

5. When do you feel the most energy and what do you do with it?

6. In what manner do you observe and analyze others?

7. How do you act when you get excited?

8. How precisely can you visualize events, real or imaginary?

9. What do you like to concentrate on the most?

10. What kind of physical activity (or inactivity) gives you the most satisfaction?

11. Is tasting something very special to you? Describe in what way it is special.

12. Do you ever catch yourself seeing, hearing, or imagining things that aren’t really there? Give examples.


14. When do you feel the greatest urge to do something? Describe.

15. Does it ever appear to you that the things around you may have a life of your own, and that plant, animals, and all things in nature have their own feelings? Give examples.

16. If you come across a difficult idea or concept, how does it become clear to you? Describe what goes on in your head in this case.

17. Are you poetically inclined? If so, give an example of what comes to mind when you are in a poetic mood.

In this question, for which Emotional OE is indicated, the gifted female gives a
more intellectual answer, even using a figure of speech (personification), and the odd humorous word, “wee,” whereas the vocational female gives a response that indicates high Emotional OE.

18. How often do you carry on arguments in your head? About what sorts of subjects are these arguments?

This question elicits Intellectual OE. The identified-gifted student gives a straightforward answer, repeating the question; the vocational student gives a response that indicates multi leveledness and a depth of deliberation.

19. If you ask yourself “Who am I?” what is the answer?

This question is answered by the gifted male on an Emotional, Imaginational, and Intellectual level. The vocational male also answers with indicators of Emotional OE, Imaginational OE, and Intellectual OE.

20. When you read a book, what attracts your attention the most?

This question most (surprisingly) often elicited responses that indicate a liking for the cover (Imaginational OE) or the length of the book. Both students speak of morality and of plot. The identified-gifted student indicates a desire for justice whereas the vocational student indicates a need for a fast-moving, well-plotted read.

21. Describe what you do when you are just fooling around. The gifted male indicates an introverted nature, with strong Sensual OE, whereas the vocational male indicates extraversion and Psychomotor OE with a sense of
recklessness and risk taking. Thus, the presence of the Big Three in gifted adolescents was not confirmed. The only other empirical comparison study of adolescents using the OEQ, Ackerman’s (1997) study, found a difference in Psychomotor OE in two groups of Canadian adolescents, but also no difference in Intellectual OE. Thus, it cannot be definitively stated that identified-gifted adolescents are higher in Intellectual, Imaginational, and Emotional OE than those who are not identified as gifted.

**Confirmation of the Big Three OE hypothesis.**

It is worth noting, however, that the present study is the largest comparison study conducted to date using the OEQ with two different groups. The assertion that people identified as gifted and talented are more likely to display higher OEs than people who are not identified as gifted and talented or intensities in all five areas—Sensual, Psychomotor, Imaginational, Emotional, and Intellectual—was also not confirmed by this study. Vocational high school students as indicated in this study, also displayed such intensities, and it is indicated more similarities than differences in intense (score of 3) replies. Whether the identified-gifted and talented high school students were “truly” gifted and whether the not-identified vocational students were “perhaps truly” gifted does not apply here, for the working definitions in this article have used the state definitions, which are situational and political. It might be interesting to speculate that these results show that the vocational students were gifted,
though unidentified, but that speculation is beyond the working definitions in this study. The state of Ohio has mandatory identification in all school districts, and so whether some of the vocational students were missed in the identification process is possible, but unlikely the assertion that gifted and talented students have greater Intellectual, Emotional, and Imaginational intensity than those who are not identified as gifted and talented does not hold.

**Discussion of Gender Differences**

*Differences within the identified-gifted group.* Identified-gifted boys were significantly higher than identified-gifted girls in Intellectual OE. This is surprising. This finding differs from the findings in the international study (Piirto et al., 2008), where there were no international significant differences nor did differences within the U.S. gift group. The latter study used the OEQ-II. Identified-gifted boys in the present study were also higher than gifted girls in Emotional and Imaginational OE, though the results were not significant given the .01 threshold requirement. Gifted girls were similar to vocational boys or girls, even in Intellectual OE. (See Table 2 for a comparison of means and Figures 1, 2, and 3 for a visual display of the differences.) There were no differences between the identified-gifted boys and identified-gifted girls in Sensual and Psychomotor OE.
Differences within the vocational group. Vocational boys and vocational girls showed no differences in any of the five OEs.

3 Development of the Career Indecision Profile: Factor Structure, Reliability, and Validity

Jason Hacker, Andrea Carr, Matthew Abrams and Steven D. Brown (School of Education, Loyola University Chicago, Chicago, IL, USA)

Prior research using a 167-item measure of career indecision (Career Indecision Profile-167 [CIP-167]) has suggested that career choice difficulties may be associated with four major sources of career indecision: neuroticism/negative affectivity, choice/commitment anxiety, lack of readiness, and interpersonal conflicts. The purpose of this study was to develop a shorter and more efficient measure of these four major sources of indecision for future use in research and counseling. The development of the measure (CIP-65) is described and the results of a confirmatory factor analytic study of its structure are presented along with initial reliability and validity data. It is concluded by discussing implications for future research on the CIP-65 and its potential use in counseling individuals with choice-making difficulties.

Development of the CIP-65

Items for the CIP-65 were chosen from the longer CIP-167 on the basis of the strength of their factor loadings in the Brown et al.
Method

Participants
Undergraduate participants were recruited from two Midwestern universities, both of which provided Institutional Review Board (IRB) approval for the study. One institution was located in an urban environment while the other was located in a suburban area.

Data Analyses
A CFA comparing alternative models was completed with LISREL 8.80. Each model was tested using maximum likelihood estimation on the covariance matrix. An assessment of the skewness on items revealed a range of -.40 to 2.26. Two items had skew values greater than 2.00 but were included in the analyses to remain consistent with prior work on the CIP-65. The range of kurtosis values on item responses was from -1.33 to 5.51, but since CFA solutions tend to be robust in the face of kurtosis deviations the items were considered sufficiently univariate normal to precede with the CFAs. In addition, the two nested models (the hypothesized model and the one-factor model) were subjected to a chi-square difference test to determine their comparative fit.

Results
For the one-factor model, two of the fit indices displayed borderline fit. However, there was not a clear consensus across the other fit indices. A closer
inspection of this model revealed that many of the items failed to load saliently (loading >.40) on the single factor. The rational four-factor oblique model based on Brown and Rector’s (2008) meta-analysis also did not fit the data. While two of the four fit indices were acceptable, there was not a clear consensus of fit, suggesting that the model should not be retained as acceptable. Further analysis of this model showed a very high correlation between Factors II and III (r¼ .92), indicating that they might constitute a single construct rather than two separate factors. This finding provided additional evidence that the model was not acceptable.

Discussion

The primary purpose of this study was to develop a measure of career indecision (CIP-65) that would be long enough to adequately represent the four primary factors found in prior research but short enough to be useful for future research and practice.

*All factor loadings are statistically significant (p < .05) to ensure that all major facets of neuroticism/negative affectivity, choice/commitment anxiety, lack of readiness, and interpersonal conflicts were covered with multiple items, yet displayed minimal overlap in content. The results of our CFA suggested that the four-factor model used to develop the CIP-65 fit the data well and that all items loaded significantly and saliently on their assigned factor. Internal consistency estimates of the scores on each of the four scales were all quite
high, and, for the most part, scores behaved as expected in validity analyses. The lone exception was that scores on the interpersonal conflicts scale did not significantly differentiate students enrolled in career classes from those not enrolled in such classes, and the effect size estimate obtained in this analysis was quite small. Scores on this scale did, however, correlate significantly (and moderately) with the self-reported levels of career decidedness. The reason for this apparent discrepancy is not immediately obvious but could be due to the fact that substantially fewer students from collectivist cultures (e.g., Asian Americans) were enrolled in the career class than in the sample as a whole. Past research has shown that interpersonal (i.e., family) conflicts represent a major source of career decision making difficulty among Asian Americans, especially among those who are more acculturated into the mainstream U.S. culture. Thus, interpersonal conflict concerns might not have been as prevalent in the career class as they were in the sample as a whole.

The major limitation of the present study is that the sample was fairly homogeneous. Females and Caucasians were overrepresented and the sample was entirely composed of college. Therefore, important next steps in research on the CIP-65 are to determine whether the structure of the measure is the same across different groups, especially across gender, ethnicity, socioeconomic status, and age. Tests of measurement invariance of the CIP-65 internationally are also warranted before it can be used to explore cross-
country differences in career decision-making difficulties or to assess decision-making difficulties of persons outside of the United States.

4 A Short Form of the Career Futures Inventory

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The purpose of this study was to test the international transferability and structural validity of the Career Futures Inventory (CFI) in a sample of Australian university students (N = 1,566). Exploratory factor analysis of the data from a random half-split of the sample supported a three-factor solution equivalent to the original CFI subscales, Career Optimism, Career Adaptability, and Perceived Knowledge. Confirmatory factor analysis of the data from the remaining random half-split supported the structural validity of a short form, the CFI-9. The subscales of the CFI-9 had acceptable internal consistencies and correlations with measures of academic major satisfaction, career choice satisfaction, and generalized self-efficacy. It was concluded that the properties of the CFI and the CFI-9 were sufficient to explore their application as measures of perceptions of employability. It was suggested that
the CFI-9 has potential as a diagnostic screening tool for counseling and educational interventions.

Method

Participants

This study involved 1,566 students enrolled at the University of Southern Queensland. The university is a multi-campus institution with campus sites in metropolitan and regional Australia. It also has a significant proportion of students who are from a rural/regional background, low socioeconomic status, or taking their degrees by distance education.

Measures

CFI. The initial validation of the CFI (Rottinghaus et al., 2005) on a sample of North American undergraduate students reported an exploratory factor analysis in which the three hypothesized factors accounted for 40% of the variance.

Career Choice Status Inventory (CCSI). The CCSI (Savickas, 1993) is a 6-item measure of satisfaction with choice pertaining to career field, academic major, and occupational choices. Respondents indicate their satisfaction on a Likert-type scale of 1 (very dissatisfied and intend to change) to 5 (well satisfied with choice).

Academic Major Satisfaction Scale (AMSS). The AMSS (Nauta, 2007) is a 6-item measure of career satisfaction with regard to studies (e.g., I often wish I
hadn’t gotten into this major; I wish I was happier with my choice of an
academic major). Respondents indicate their satisfaction on a Likert-type scale
of 1 (strongly disagree) to 5 (strongly agree). The theoretical range of scores is
6–30. Nauta reported internal consistency coefficients of a $\frac{1}{4} .94$ and a $\frac{1}{4} .90$ in
two studies.

**Generalized Self-Efficacy scale (GSES).** The GSES (Schwarzer & Jerusalem,
1995) was a 10-item measure of sense of optimistic mastery for a variety of
situations (e.g., Thanks to my resourcefulness, I can handle unforeseen
situations; I am certain I can accomplish my goals). Respondents indicate their
confidence on a Likert-type scale of 1 (strongly disagree) to 5 (strongly agree).
The theoretical range of scores for this scale is 10–50. Internal consistency
coefficients ranging between a $\frac{1}{4} .76$ and a $\frac{1}{4} .90$ have been reported
(Schwarzer & Jerusalem, 2000). While we accept the proposition that self-
efficacy is specific to certain behavioral domains and that it is not a general
construct (Lent & Brown, 2006), we retained the term generalized self-efficacy
to be consistent with the title of the scale and interpreted the scale as a measure
of general confidence.

**Results**

**Exploratory Factor Analysis**

The data were factorable with Kaiser–Meyer–Olkin measure of sampling at .92
and Bartlett’s Test of Sphericity; $\chi^2 \frac{1}{4} 10079$, df $\frac{1}{4} 300$, p < .000. An exploratory
factor analysis with oblique (Oblimin) rotation was used because it was assumed that the three hypothesized factors are interrelated.

**Confirmatory Factor Analysis**

Data from Group 2 of the sample were used to test the structural validity of the short form through confirmatory factor analysis using IBM SPSS AMOS V18 (Arbuckle, 2009).

**Scale Properties and Relatedness to Other Measures**

Compared to the original study, the mean scores and variance for CA, CO, and PK in this study were comparable to those in the study by Rottinghaus et al. The short form CA and CO subscales had adequate correlations with the original scales with correlations or $r = .88$ and $r = .73$ for CA and CO, respectively.

**Discussion**

This study sought to examine the construct validity of the CFI-9 by assessing its factor structure in an Australian sample. Exploratory factor analysis performed in this study supported a three-factor solution for the CFI. An unexpected result was the swapping of CA and CO as the first and predominant factor. While this does not detract from the three-factor solution, we suggest that this may be related to the relatively high proportion of first-year students in the sample. Confirmatory factor analysis supported the structural validity of a three-factor solution and a 9-item short form of the CFI,
the CFI-9. The subscales of the CFI-9 correlated with one another and their coefficients of internal consistency were comparable to those of the CFI found by Rottinghaus et al. The subscales also correlated significantly with measures of academic major satisfaction with studies using the AMSS, career-decidedness and satisfaction using the CCSI, generalized self-efficacy or confidence using the GSE scale. This study provides some evidence of the CFI’s international transferability as a psychometric tool. Rottinghaus et al. acknowledged that it was designed for college students and suggested that a version for working adults would be desirable. Participants in the current study included those students who had recently completed high school and those who were mature adults: the mean age of the sample was 33.21 years, thus indicating a large proportion of undergraduate students in the current sample were mature-aged. Therefore, it is reasonable to suggest that the CFI-9 is appropriate for use with mature-aged students too.

Limitations

As in the original validation study (Rottinghaus et al., 2005), the sample in the current study was predominantly female. However, there is no reason to suspect any substantive differences across gender, as the differences in mean scores were not meaningfully appreciable, and the statistical significance of differences should be carefully considered with respect to the large sample size. This study was conducted using a sample with a relatively high
proportion of students from a rural/ regional and lower socioeconomic backgrounds, and the majority of whom are mature-aged and do not study on campus in a full-time mode. While this is concomitantly suggestive of its relevance for such a demographic sampling, there should be some caution in assuming that the CFI-9 is appropriate for all types of universities and subpopulations within the Australian higher education sector.

Research Implications

We suggest that the CFI-9 is a useful measure that partially operationalize the model of employability by Fugate et al. (2005) who argued that career identity, personal adaptability, and social and human capital should predict employability. However, it is inappropriate to suggest that the CFI-9 be taken as the only measure of the model. For example, the CFI or CFI-9 does not directly assess personal networks that comprise the social capital variable; nor does it assess perceptions of competence with skills that comprise the human capital variable. To further explore the validity of the CFI, there should be comparisons with other emerging measures of graduate employability that address these dimensions.

Implications for Practice

As higher education practitioners, we acknowledge the salience of relatively stable traits and general mental abilities; however, we are interested in the psychological—cognitive, behavioral, and emotional—aspects of students'
perceptions of their employability that are amenable to the curriculum and within the scope of extracurricular interventions supplied by universities to their students (e.g., career counseling, career education, and career information). The three hypothesized factors of employability—career identity (e.g., career decidedness), personal adaptability (e.g., generalized self-efficacy, personality traits, general mental abilities), and social and human capital—are subject to influence and change. Indeed, Fugate et al. (2004) emphasized the personal malleability necessary for employability (a) that an individual has little or no control over the criteria used by employers to make employment decisions and (b) that individuals have more control over their personal qualities that contribute to employability. Thus, it may well be more productive to focus upon developing students’ and graduate’s attributes within their realm of control and within curricula. The CFI or CFI-9 may be used as a formative diagnostic measure to determine whether students are engaged with their career and studies.

**Conclusion**

This study has provided initial evidence of the CFI-9 having psychometric properties equivalent to the original version that was validated in North America by Rottinghaus et al. (2005). Pending further testing of the CFI-9 in other Australian population samples, it is suggested that this study presents evidence of the construct validity of the CFI-9 in an Australian context.
5 THE ROLE OF AFFECTIVE INTEREST IN VOCATIONAL INTEREST MEASUREMENT

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Most vocational interest inventories used today operationalize interests in terms of enjoyment or liking. The potential role of affective interest in vocational preferences has not been examined empirically, despite indications that affective interest and enjoyment are distinct as emotions. The present study aimed to extend research distinguishing affective interest from enjoyment to the context of vocational preferences, and to determine whether incorporating affective interest items into an enjoyment-based vocational interest measure would improve its criterion-related validity for academic major choice and satisfaction.

Hypotheses

The first aim of the proposed study is to extend the distinctions found between affective interest and enjoyment in other fields of psychology to vocational interest research.

Hypothesis 1 states that enjoyment and affective interest are distinct within the context of vocational preferences. Briefly stated, discriminant validity will be
assessed through measuring the absolute correlation between enjoyment and interest scale scores, and through comparing the relationships of enjoyment versus interest scale scores with scores on four other scales (different patterns of relationships would suggest that enjoyment and interest are different constructs). A one-factor enjoyment/interest model of vocational interests versus a two-factor model with enjoyment and interest as separate factors. Details and rationale for the associated sub hypotheses are described below.

H1a) Interest and enjoyment of various occupational activities, after adjusting for measurement artifacts, will correlate at less than .80.

H1b) The correlation coefficient between interest and enjoyment will be less than the scales’ internal consistency reliability estimates.

H1c) Interest and complexity will correlate significantly more positively than enjoyment and complexity.

H1d) Enjoyment and familiarity will correlate significantly more positively than interest and familiarity.

H1e) Enjoyment and current competence will correlate significantly more positively than interest and current competence.

H1f) Interest and future competence will correlate significantly more positively than enjoyment and future competence.

H1g) A two-factor model of enjoyment and interest will fit the sample data significantly better than a one-factor model that groups enjoyment and interest items
Hypothesis 2 addresses the second study aim to clarify the nature of vocational interests: Should the operationalization of vocational interests include affective interest items in addition to traditional enjoyment- or liking-based items?

H2a) Individuals’ vocational interests, assessed through a combination of enjoyment and affective interest scores, will have greater concurrent validity (i.e., a higher hit rate) for academic major choice than vocational interests based on enjoyment scores alone.

H2b) Adding affective interest scores to enjoyment-based interest scores will yield congruence values that have incremental validity for academic major satisfaction, beyond enjoyment-based congruence alone.

METHOD

Sample

Data were drawn from archives collected from the Colorado State University psychology research pool from 2007 and 2008. The sample consisted of 423 students (N = 282 females, N = 141 males) with an average age of 18.98 years (SD = 2.78). The majority of participants were freshmen (N = 318) or sophomores (N = 60), with the remaining participants ranging from junior to second bachelor’s status. 87.9 percent of the sample identified as Caucasian or European- American, with 3.8 percent identifying as Hispanic or Central/South American, 3.5 percent as Asian or Pacific Islander, 2.1 percent as African or
African-American, .7 percent as American Indian or Alaskan native, and 1.4 percent as “other.”

**Procedures**

Surveys were completed online through SurveyMonkey.com as part of a larger study for course credit.

**Instruments**

**Enjoyment, Interest, Current Competence, Future Competence, Familiarity, and Complexity.**

These variables were assessed to test the first study hypothesis that enjoyment and interest are distinct and will diverge across multiple constructs. Enjoyment and current competence were assessed with the activity preference scales and activity competence belief scales from the Personal Globe Inventory (PGI; Tracey, 2002). The PGI is a vocational interest measure that examines activity preferences, activity competence beliefs, and occupational preferences. The PGI’s six activity preference scales ask respondents to rate how much they like 48 occupational activities on a scale of 1 to 7 (1 = *Strongly dislike*, 7 = *Strongly like*), and the six competence scales instruct respondents to rate how competent they feel in each of the same activities (1 = *Unable to do*, 7 = *Very competent*). Interest, future competence, familiarity, and complexity were assessed by manipulating the verb anchors for the PGI’s 7-point scaled items such that participants also were instructed to rate (a) their interest in each activity (1 =
Not at all interesting, 7 = Very interesting) (b) their predicted future competence in each activity (1 = Unable to do, 7 = Very competent), (c) their familiarity with each activity (1 = Not at all familiar, 7 = Very familiar), and (d) how complex they found each activity to be (1 = Not at all complex, 7 = Very complex). The modified scales were scored in a manner identical to the original PGI scales. Evidence for the validity of PGI scores has been established across age, gender, and ethnicity, including European American, African American, Asian American, and Latino American populations (Tracey, 2002). The structural validity of the PGI’s circumflex model has been supported using the randomization test of hypothesized order relations (Hubert & Arabie, 1987; Rounds, Tracey, & Hubert, 1992; see Tracey, 2002, for further explanation).

Academic Major Satisfaction

The AMSS consists of six items rated on a 6-point continuous scale which are summed for a total score (Nauta, 2007). Four of these items are reverse scored.

Concurrent Hit Rate and Congruence Computations

Individual Holland Code. To test Hypothesis 2, individuals’ 3-letter Holland codes were computed in three different ways: based on enjoyment, affective interest, or both enjoyment and affective interest. Enjoyment-based Holland codes were assigned using the original activity preference scales from the PGI, described previously. Tied scores (i.e., two or more scores tied for a particular position in the Holland profile) were resolved by ordering the tied Holland
types in accordance with Holland’s circumflex or by random assignment, methods used in the development of interest profiles for O*NET occupations

**Academic Major Holland Code.**

Participants were instructed to indicate their academic major(s) in a free response item (“...what is your major?”). Participants who indicated more than one major were randomly assigned to one of their indicated majors ($N = 9$).

**Hit Rate for Academic Major Choice.**

Hit rates were used to determine concurrent validity of individual Holland codes for academic major choice (H2a). This approach, which reports the proportion of respondents whose highest-point Holland type matches the highest point Holland type of their academic major or occupation, is endorsed by Holland, Powell and Fritzsche (1997) and is widely used in the literature (e.g., see Leung & Hou, 2001).

**Person-Environment Congruence.**

To test the incremental validity of interest-based congruence for academic major satisfaction (H2b), congruence between each individual’s Holland code and his or her major’s Holland code was calculated using Brown and Gore’s standard C index (1994). The C index is frequently recommended for congruence computations due to its sensitivity to the order of interest types of Holland codes as well as to the distance between codes on the circumplex

**Statistical Analyses**
Multiple Analysis of Variance (MANOVA).

MANOVA was used to detect whether the order in which the six PGI-derived scales were administered may have impacted participants’ patterns of scale scores, potentially leading to biased results. MANOVA was chosen as a suitable analytic method due to its ability to account for intercorrelations between multiple dependent variables without inflating the Type I error rate (Tabachnick & Fidell, 2007). Scale order was treated as the independent variable in the MANOVA analysis, with enjoyment, current competence, future competence, complexity, familiarity, and interest scales as dependent variables.

Confirmatory Factor Analysis (CFA).

CFA was used to test the first main study hypothesis that enjoyment and interest of vocational activities are distinct constructs. First, a six-factor measurement model was used to estimate PGI-based scale intercorrelations for subsequent comparison of relative correlations of enjoyment versus interest with current competence, future competence, complexity and enjoyment (with the expectation that enjoyment and interest would diverge in particular ways across those scales).

McNemar Test. The prediction of greater concurrent validity of vocational preference scores based on enjoyment and interest versus scores based on enjoyment alone (H2a) was tested with the McNemar test for matched-pair
Hierarchical Multiple Regression.

In hierarchical regression, predictors are entered sequentially into the model based on theory, such that the relative influence of predictors entered later on (in this case, interest-based congruence) is considered in relation to that of previously entered predictors (enjoyment-based congruence).

RESULTS

Discriminant Validity of Enjoyment and Interest

As mentioned, CFA was used to test Hypothesis 1. Analyses were conducted in MPlus. Each CFA model was tested on the sample as a whole, as prior research on Holland’s theory suggests no reason to suspect that model fit would differ across participant characteristics such as sex, age, education level, or ethnicity. The number of cases analyzed ($N = 418$ for each CFA) provided adequate statistical power for precise and reliable parameter estimates and model fit indices.

Testing assumptions. Assumptions of CFA are analogous to those required for regression (and by implication, assumptions of MANOVA in the current study). Maximum likelihood estimation with robust standard errors (MLR) was used in all CFAs due to the violation of multivariate normality noted previously.

Results of CFAs. First, a six-factor CFA model was used to estimate PGI-
derived scale intercorrelations for each of the six RIASEC types, attenuated for measurement error. Results for each RIASEC type are shown in Table 2. Table 3 provides the average scale correlations and internal consistency reliability estimates across RIASEC types. Interest and enjoyment correlated at less than $r = .80$ for each RIASEC type ($rs$ from .51 to .78), supporting the prediction that interest and enjoyment would correlate at less than .80 after adjusting for measurement error (H1a).

**Concurrent Validity of Holland Code for Academic Major Choice**

For the overall sample, the hit rate of enjoyment scores for academic major choice was 38.1%, with a hit rate of 35.9% for interest scores, and 36.7% for enjoyment-and-interest scores.

**Incremental Validity of Interest-Based Congruence for Major Satisfaction (Hierarchical Regression)**

**Testing assumptions.** The accuracy of multiple regression, including hierarchical regression, rests on several assumptions, including absence of outliers, adequate scale reliability, multivariate normality, linearity of bivariate relationships, homogeneity of variance-covariance matrices, and absence of multicollinearity.

**Results of Hierarchical Regression Analyses.** Two HR analyses were conducted, first to examine potential interaction effects associated with class standing, and second to test incremental validity of interest-based congruence
for academic major satisfaction beyond enjoyment-based congruence alone.

**Moderating Effect of Class Standing.** The first HR analysis examined the potential moderating effect of class standing (freshmen vs. non-freshmen) on the relationships between enjoyment- and interest-based congruence with academic major satisfaction (see Table 6). Class standing was dummy coded with freshmen as a reference group and non-freshmen as the comparison group. Two models were compared to test for interaction effects. The first model included enjoyment-based congruence (centered at the mean), interest-based congruence (centered at the mean), and the dummy-coded class standing variable as predictors.

**Incremental Validity of Interest-Based Congruence for Major Satisfaction.** Main question of interest, namely, incremental validity of interest-based congruence for academic major satisfaction was tested, again using hierarchical regression.

**DISCUSSION**

Hypotheses related to the study’s first aim received mixed support. As predicted, enjoyment and interest correlated at less than $r = .80$ across the RIASEC types. In addition, the correlation between the enjoyment and interest scales for each RIASEC type was less than the lower of the two scales’ internal consistency reliability estimates, suggesting that measurement error alone did not account for within-subjects differences in scale scores. Next, for all but the
Social scales, enjoyment and interest correlated significantly less with each other than did current and future competence, again suggesting discriminant validity (while the nonsignificant difference in the two r-values on the Social scales does not support discriminant validity, it does not disconfirm it either in this case, since current competence and future competence are themselves distinct). Finally, significantly improved goodness of fit for the two-factor model of enjoyment and interest over the one-factor, combined enjoyment/interest model, also supported discriminant validity for enjoyment and interest in vocational activities. These results align with research in various fields outside of vocational psychology that suggests enjoyment and interest, though related, are distinct constructs. Results related to H1c-f, however, were more variable the Social scales (on which the predicted relationship was reversed) and the Enterprising scales (on which there was no difference). Furthermore, interest correlated more strongly with complexity than enjoyment only on the Investigative scales; for all other RIASEC types, the difference was not significant. The farthest departure from expectations related to future competence: Enjoyment was actually found to correlate significantly more than interest with future competence for all RIASEC scales. These results are perplexing. Given that significant differences were often observed in the relative relationships of enjoyment versus interest with the four other PGI-derived variables, it is possible that RIASEC type moderated the relationships
between enjoyment and interest with these four variables.

Limitations

First, its results may have been influenced by common methods variance (CMV). Though the strength of its general impact has been debated, it has been estimated that as much as 28.9% of the variance in outcomes in social sciences research owe to CMV, with 36.2% of variance due to predictor variables and the remaining 34.9% due to error.

Future directions

The present study sought to establish discriminant validity of affective interest versus enjoyment of vocational activities, and to determine whether affective interest, compared to enjoyment alone, would explain additional variance in career-related choice and satisfaction. In light of equivocal and no supportive findings for H1 and H2, respectively, as well as a number of important limitations to the study design, further research is warranted for more definitive conclusions on the role of affective interest in vocational interest measurement. Future investigations should address this study’s limitations, for example by accounting for potential confounding variables, statistically controlling for common methods variance and order effects, and using a different outcome measure or a more academically or occupationally experienced sample. In addition, as most of the research on affective interest is based on theory rather than empiricism, additional testing of the distinctions
between interest versus enjoyment as emotions is recommended, as well as longitudinal research examining the role of these and other emotions in trait interest(s) development (e.g., the openness to experience trait, vocational interests). Greater understanding of potential developmental links between state and trait interest is valuable in its own right and would aid in designing studies on the relationship and potential contributions of affective interest to vocational interest measurement in particular.

**Implications for Practice**

This study’s mixed and/or non significant findings, if considered valid, support the use of enjoyment-based interest inventories in career counseling as the best current approach to interest measurement. Though other modifications to current practices in vocational interest assessment might be valuable, the incorporation of affective interest items into existing interest inventories does not seem to enhance the ability of these measures to predict important outcomes like choice and satisfaction. The results of this study also suggest that certain inventories’ equation of interest and liking is justified, or at least not detrimental with regards to measurement.

**Conclusions**

The current study aimed to show distinctions between affective interest and enjoyment in the context of vocational preferences, and to assess incremental validity of affective interest items for key career-related outcomes of choice and
satisfaction. Findings were mixed with regards to the discriminant validity of affective interest, and did not support incremental validity of interest for choice and satisfaction. These findings, given the study’s exploratory nature and limitations, suggest the need for further research to draw more definitive conclusions on the role of affective interest in vocational interest theory, measurement, and applications. This study is unique in its attempt to deconstruct the nature of vocational interests into distinct affective components, and is also the first to empirically link affective interest research to vocational interest measurement. It is hoped that this study generates momentum for future investigators of vocational interests to draw on research outside of vocational psychology for a more in-depth understanding of vocational interests and how to best measure them. Such endeavors hold great value for science and practice alike.

6 Vocational Interests and Performance: A Quantitative Summary of Over 60 Years of Research

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Despite early claims that vocational interests could be used to
distinguish successful workers and superior students from their peers, interest measures are generally ignored in the employee selection literature. Nevertheless, theoretical descriptions of vocational interests from vocational and educational psychology have proposed that interest constructs should be related to performance and persistence in work and academic settings. Moreover, on the basis of Holland’s (1959, 1997) theoretical predictions, congruence indices, which quantify the degree of similarity or person–environment fit between individuals and their occupations, should be more strongly related to performance than interest scores alone. Using a comprehensive review of the interest literature that spans more than 60 years of research, a meta-analysis was conducted to examine the veracity of these claims. A literature search identified 60 studies and approximately 568 correlations that addressed the relationship between interests and performance. Results showed that interests are indeed related to performance and persistence in work and academic contexts. In addition, the correlations between congruence indices and performance were stronger than for interest scores alone. Thus, consistent with interest theory, the fit between individuals and their environment was more predictive of performance than interest alone.

First, although nearly all vocational interest inventories were developed in academic contexts for providing vocational guidance, each of these inventories differs in its approach to the measurement of interests. For example, the Self-
Directed Search (SDS; Holland, Fritzsche, & Powell, 1994) and the Vocational Preference Inventory (VPI; Holland, 1965) were developed to assess Holland’s six broad RIASEC types. In contrast, the Kuder Preference Record (KPR; Kuder, 1983) assesses more specific constructs known as basic interests (e.g., Mechanical, scientific, artistic, and clerical interests), and some versions of the Strong Interest Inventory (SII; Harmon, *Congruence Comparisons*).
Investigative

First-Letter Codes

Second-Letter Codes

Third-Letter Codes

Strongest Interest

Weakest Interest

Most Descriptive

Least Descriptive

Method

Literature search

To identify studies for the present meta-analysis, we searched in the American Psychological Association’s PsycINFO database (1887–2010) and Google Scholar for the terms interests, vocational interests, job performance, occupational interests, RIASEC, interest congruence, academic achievement, and turnover. The technical manuals for each of the major interest inventories, including the KPR (Kuder, 1983), the SII (Harmon et al., 1994), the SDS (Holland et al., 1994), the VPI (Holland, 1965), the ACT Interest Inventory (American College Testing Program, 1995), and the Career Assessment Inventory (CAI; Johansson, 1984), were also searched for citations and studies that could be incorporated.

Analyses

For the present analysis, a total of 568 correlations were obtained from the 60
usable studies identified in the literature search. Each of these correlations was corrected for both indirect range restriction and unreliability in the criterion measures using the methods proposed by Hunter, Schmidt, and Le (2006). These correction techniques and their application to the present study are described more thoroughly in the Appendix. Because several correlations were reported in a number of the studies that we reviewed, many of these correlations violated the statistical assumption of independent observations. Therefore, we used a regression-based approach to Meta analysis (see Beaty et al., 2011, and Richman, Kiesler, Weisband, & Drasgow, 1999, for examples of previous applications of this approach) that allows for dependent observations and, therefore, can incorporate the entire set of correlations obtained in a particular study. Additional information about this approach and its application in the present study are provided in the Appendix.

Results

In both the academic and employed samples, we found that interests were moderately correlated with performance and persistence at work and in school. Thus, these results contradict previous research suggesting that interests are only weak predictors of performance. In addition, consistent with Holland’s (2007) theory, congruence indices were found to be stronger predictors of performance criteria than interest scores alone. Below we describe the results of our analyses, first for the employed samples and then for academic studies.
Interest–performance correlations

in employed samples

Results indicated that interests have a significant relationship with performance in the work setting. The baseline estimate of the meta-analytic correlation between interests and performance was .20, suggesting a moderate relationship between interests and performance.

Matching individual interests to the occupation

Congruence can be operationalized as the match between an individual’s interests and his or her occupation. Therefore, using Holland’s framework and the diagram in Figure 1, it has been categorized each of the correlations in our meta-analysis on the basis of the similarities between the first-letter RIASEC code of the occupation and the type of interests measured.

Interest–performance correlations in academic samples

Our analyses in the academic samples also indicated that interests were significantly correlated with academic performance. In these analyses, the baseline correlation was .23.

Discussion

The present study provides a quantitative summary of 60 studies, 568 correlations, and over 60 years of research. Overall, the results from this meta-analysis suggest that interests are valid predictors of performance in academic and work domains. These findings contradict previous research that suggested
that the correlation between interests and performance is negligible. Moreover, these results support Holland’s (1997) hypothesis regarding congruence and suggest that the correspondence between the individual and his or her environment is important for predicting performance outcomes.

**Conclusion**

In contrast to previous meta-analytic research, the results reported here show that interests can be significant predictors of performance outcomes. As expected, the congruence between an individual’s interests and the characteristics of the environment was particularly important. However, even interest scores alone can be useful predictors of performance when the scale used to measure them is carefully chosen to correspond to the occupation or major that an individual will enter. Overall, interests were shown to predict task performance, organizational citizenship behavior, grades, and persistence in work and academic contexts.

7 Exploring Age and Gender Differences in Vocational Interests

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A large cross-sectional sample of respondents who completed a research version of the Strong Interest Inventory® assessment were examined for differences in the RIASEC themes based on age and gender. The data were
examined using a 2 (gender) by 5 (age category) MANOVA and follow-up ANOVAs. Anticipated gender differences were found and replicate past research. The effects of age and age by gender interactions were significant, but very small. A linear trend across age categories with level of interest generally increasing with age was found. Some implications of the findings are discussed. A potentially fruitful area of research regarding vocational interests, which remains largely unexplored, is the development of interests across the lifespan. As an entry into this area, the current study examines the expression of interests by individuals comprising different age groups, ranging from age 13 to 59. It was observed by the researchers that there appear to be differences in levels of vocational interests based on the age of respondents during a recent revision of the *Strong Interest Inventory®* assessment. To examine these differences more explicitly, the current study compares the reported level of interest in the six General Occupational Themes (GOTs) measured on the Strong based on self-reported respondent gender and categorized age. Much of the research conducted on interests over time has focused on the issue of interest stability and change (Swanson, 1999). There has been considerable research on the various factors that developmentally influence or are related to expressed vocational interests.

**Method**

**Procedures**
In this effort, a research version of the Strong was developed that contained 361 items organized into six sections. One of the major changes that occurred on the research form of the newly revised Strong assessment relative to earlier versions was an expansion of the response options for the Like, Indifferent, and Dislike items. Here, the 3-point response options were expanded to 5-point response options, with the extreme responses anchored with Strongly Like, and Strongly Dislike, respectively. The research version of the Strong was administered using both paper and pencil and Internet administrations to over 25,000 male and female respondents. The reliance on the Internet for much of the data collection does not appear to be problematic the newly revised Strong measures six General Occupational Themes, thirty Basic Interest Scales, and five Personal Style Scales. Each of these scales is standardized to have a mean of 50 and a standard deviation of 10 (T-scores). The six revised GOTs serve as dependent variables in this study.

Respondents

The ratio of females to males in the total data collection was about 2 to 1. From the larger group of respondents, sample was drawn for the current study. The sample developed excluded those respondents used in the creation of the General Representative Sample or used in the development of Occupational Scales for the forthcoming revision. Next, to provide more equal
Sample sizes based on gender, a subset of female respondents was selected at random. The sample includes full-time students (24.8%), persons employed full-time (33.1%), persons employed part-time (10.2%), persons not working for income (9.4%), retirees (0.3%) and those who indicated other options or did not respond (22.3%). The sample is also ethnically diverse, with 71% reporting being white or Caucasian, 7.5% black or African-American, 4.7% Hispanic, 5.9% Asian or Pacific Islander, 0.5% Native American, and 9.1% Multi-ethnic.

Results

The hypotheses were tested by conducting an age category (13 to 19, 20 to 29, 30 to 39, 40 to 49, and 50 to 59) by gender (female and male) MANOVA using the RIASEC interest dimensions as dependent variables, and examining the Step-down ANOVAS for each interest dimension. The overall MANOVA suggested that there are gender $[F(6,11555) = 528.24, p < .001]$ and age category $[F(24,40312) = 34.94, p < .001]$ differences for all of the interest dimensions, as well as the gender by age category interaction $[F(24,40312) = 8.44, p < .001]$. The partial $\eta^2$ indicate that the only meaningful difference, in terms of effect sizes for this analysis is for gender (partial $\eta^2 = .215$). Age category accounted for less than 2% of the variance, and the interaction less the 1%. Overall, this finding indicates that there is no sizable effect of age on interests. Given the significant multivariate result, univariate ANOVAs were then examined for each of the RIASEC themes. For each of the analyses, post hoc analyses as well
as trend analyses were computed. Males scored higher on the Realistic, Investigative, Enterprising and Conventional themes, while females scored higher on the Artistic and Social themes. The difference for the Realistic theme was the largest, and the difference for Enterprising the smallest. Indeed, the difference was very small and likely emerged as significant due to the very large sample size. The same is true for Investigative, Artistic, and Conventional themes. As predicted, the results do show some small differences in the themes based on age. The Artistic theme had an effect size near 5%, the largest of any of the themes. The Social theme had an effect size of 4 the primary source of any difference is for the two youngest age categories, with males showing less interest in Artistic and Social themes compared with females. For the rest of the age groups, the means are very similar. The difference for the Realistic theme is likely due to the steady increase in interest as the age increases. The Enterprising and Conventional themes have very trivial differences based on age. Finally, the anticipated interactions did emerge, but the effect sizes of these results are very small, with each of them accounting for less than 1% of the variance.

Discussion

There are several shortcomings with this study. First, the data were cross-sectional in nature, so it is not possible to determine whether any of the observed age differences are due to changing interests over time. The sizes of
the differences here do not seem inconsistent with the types of changes observed by stability and change researchers. Second, while the cross-sectional nature of the data would have prevented any attributions regarding cause or direction of effects, the small effects of age category and the age category by gender interactions prevent any interpretation of the results as they relate to the efficacy of Title IX. This study also has several strengths. First, the sample included a broad age range of respondents. These respondents were drawn from a pool that differs largely from many studies of interests, specifically college students in psychology courses. While the respondents in the younger age group were typically students, many of the respondents in the older age categories were employed in a wide variety of work settings. The sample was quite large and probably reflects the population of people who complete interest inventories in general. As expected, this study found that there were gender differences for all of the RIASEC themes. Not surprisingly, these differences were consistent with past research, with males having slightly higher means on the Realistic, Investigative, Enterprising, and Conventional themes. Female respondents reported higher levels of interest on the Artistic and Social themes. Across the entire age range, the size of these differences was generally small, with the largest and most consistent difference occurring for the Realistic theme. Although meaningful differences based on the interaction of age category and gender did not emerge, an unanticipated age related result
was identified in this study. Specifically, the trend analyses for all of the interest dimensions show that there is a general linear trend for all of the RIASEC dimensions, with interest in general increasing with age, across both genders. What is not clear is if this is due to slight increases in general interest as individual’s age, or due to some other factor. A number of potential explanations of this trend can be identified. First, there could be an increasing level of disinterest in younger respondents to the stimuli presented on the assessment. Another alternative could be that there were differing response styles for younger respondents versus older respondents. Specifically, the new “Strongly Dislike” response option on the research version of the Strong may have been used more frequently by younger versus older respondents. Another explanation could be that there were differing motivations for participation in the research. Younger respondents may have participated in the study to obtain desired career exploration information, whereas the older respondents, who typically were employed, may have had broader openness to experience, and therefore completed the inventory out of curiosity. While it is important not to over interpret this modest trend result, considering the large sample size used in this study, this finding could be an indicator of a future challenge for career professionals interpreting the results of interest inventories.
2.6 Distinctiveness of the Study

The investigator of the present study has taken pains in studying past researches both Indian and foreign studies and tried to analyze them deeply. The vocational interest remains one of the favorite subjects for the investigators in which they try to study the vocational interests of the students in the context of different variables. The study of the previous researches reveals that SES is the commonly selected variable in most of the studies. Apart from the variable SES, personality is another variable that was studied by many investigators and it was tried to find out the impact of personality on the patterns of the vocational interests. The less touched areas that were found by the investigator were residential area and level of intelligence of the students as the variables and their impact on the patterns of vocational interests. Along with the above mentioned two variables, the impact of sex on the vocational interest was also decided to study by the investigator. Apart from the selection of variables, the previous researches made it easier in the area of sampling techniques. The investigator of the present study was highlighted how the selection of the samples would be made by the thorough study of the different works.
End Notes


Dewey John., Interest and Efforts in Education, New York, Riverside, Educational Monographs, 1913, p. 16.


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