Chapter III
The Problem and the Strategy of Inquiry

The knowledge of correct or error free language leads an individual to good self expression, good academic achievement, success at work, self satisfaction, better adjustment with fellow beings, family and society and enhanced social prestige. General theories of Bernstein (1970) and a number of studies over the years (Klima, 1968; Gray et al, 1980; Graham, 1987; Jekayinfa, 1991; Patkowski, 1991; Cook, David, Catrin, Love, Mao, Robinson, Scerif and Sharma, 2004; Ntuli and Pretorius, 2005) have also substantiated that to succeed in the educational system a child must possess high competence in languages.

Learning of a language involves at least reasonable mastery of the skills of expression and reception i.e. listening, speaking, reading and writing and knowledge of the different systems of language like sounds, vocabulary, grammar, writing, etc. However, “Writing is a crucial act in the process of learning” any “language”, states Lalande II (1981 g). “The ability to write clearly is” also “essential to effective communication and critical to employment and production in the contemporary world”, and, “writing errors may seriously jeopardize the social, personal, or professional relationships the individual wishes to establish”.

English language is the lingua franca of the modern world. No individual or nation can survive without learning it. It is predicted that by 2010, an upsurge in English language learning will include one third of the world’s people (Graddol, 1997 b).

India being a multicultural and multilingual country, most Indian schools follow the Three-language formula according to which every child has to learn three languages: Hindi, the National language; the (dominant) Regional language or the Mother Tongue (if it happens to be the prevalent regional language and the Second Mandatory language, English which most of the students study as a Foreign or Library or Second language. But in response to the demands of Globalisation, there is a substantial change is silently taking place in the classrooms of India. Importance of English is being rediscovered.

“English in today’s India is a symbol of people’s aspirations for quality in education and a fuller participation in national and international life. Its initial role in independent India of ‘a library language’, ‘a window on the world’ today is now felt to
be insufficiently inclusive socially and linguistically. The current status of English stems from its overwhelming presence on the world stage and the reflection of this in the national arena.” (The National Curriculum Framework, 2005 b).

As Das (2005 b) observes- “English is perceived to open up opportunities” as such “it’s today being demanded by everyone at the very initial stage of schooling.”

Taking cognizance of the phenomenon, The National Curriculum Framework 2005 has suggested that English be made the second mandatory language for all classes in all forms of education (The National Curriculum Framework, 2005 c).

3.1 Need of the Study

Punjab is one of the richest and the most developed states in India. It has also a substantial number of emigrants to countries where English is the first language.

Unfortunately, large sections of our students are not good at this language and commit serious mistakes in its use, this in spite of the fact that English has been introduced from class one in Government Schools for quite some time now.

Teaching and learning of English in Punjab today, is characterized by a diversity of schools and supportive environments and procedures.

The different types of schools identified by Kurrien (2005) are: English medium private/ government aided elite schools; New English medium private schools; government aided regional medium schools and, government regional medium schools run by district or municipal education authorities.

The National Curriculum Framework (2005 b) notes Government run schools (the last two of the categories of schools mentioned above) are the biggest providers of education to large masses in both rural and urban areas. But, the environment and results of these schools are the worst in terms of language acquisition.

There has been little work by way of researches to find out the patterns and causative factors of the errors committed by the Punjabi medium students in English language in their written compositions.

Hence, there is an express need to study the errors committed by these learners and to suggest measures to solve the problem of errors.

3.2 Significance of the Study

It is hoped the results and conclusions of the present investigation may contribute to the theory and practice of teaching of English in the following ways:
English language learning, especially the errors of the EFL/ ESL learners is not a favorite area of research for Indian researchers. The present study will contribute to the body of knowledge of errors especially committed by the Punjabi speaking students of Punjab in their written work.

The knowledge of the common errors of the Punjabi speaking students of Punjab will help the teachers to focus on the most common errors of the students while teaching.

It will also guide the curriculum framers and text book writers to develop the books and remedial literature which pays attention to the most common errors.

Since most of the existing researches only describe the prevalence of the errors and their types among different types of populations, this investigation will look into the relationship, if any, between errors and factors like Cerebral Dominance, Cognitive Styles, gender, locale and caste.

Correcting errors is extremely essential. But, in view of the exponentially large number of errors in a foreign language, it is neither feasible nor advisable to correct all the errors of a learner. So, as a strategy, the teachers focus on the most common errors only. The study by establishing whether the socio-personal factors like gender, locale and caste have or not any role in the errors may help in deciding on the need or not of placing the students in homogenous groups based on the above factors.

The above knowledge may help the teachers, parents and guidance workers to help the students to set realistic goals and understand and accept themselves.

Since the left brain or hemisphere is associated primarily with language, the present study will help to understand whether individuals relying more on right or whole brain commit more errors or not and, if yes, in what particular areas or aspects. If the relationship between Right and Whole brain and Errors is not established, the controversy will be put to rest; if it is established, these students will be educated to habitually lean on their Left brains and suitable strategies and materials for teaching them may also be recommended.

Knowledge of the role or not of the Cognitive Styles towards committing of errors in language will guide the teachers on the need or not to place students in homogenous groups according to their Cognitive Styles. If the relation between Cognitive Styles and errors is established, it may bear upon the teachers the need to select materials, methods and strategies and remedial literature and programs in accordance with the special needs of the students of a particular Cognitive Style.
The results and conclusions drawn from the present investigation will be documented for systematic and easy access.

It may motivate and suggest further researches in several new issues related to the area of errors in EFL/ESL.

The information generated from the present investigation may be used for the purpose of decision making and planning of educational strategies and policies.

Keeping in view the growing popularity of English, the number of ESL/EFL learners is growing fast in large numbers of countries. The knowledge generated from the present investigation may be of use and benefit to the countries with similar problems.

3.3 Statement of the Problem

There is no doubt that learning of English language is very important for the healthy progress of an individual. It is also true that students find it difficult to learn and master this language and this is particularly more difficult in case of students whose mother tongue is Punjabi and who use Punjabi as their medium of instruction. Students make errors in written language and there is need to investigate the pattern of their errors in relation to their cognitive styles. Whether dominance of a particular side of the brain has any role in errors is also an area which needs investigation. Keeping these in mind, the following statement of the research problem is selected for work:

A STUDY OF ERRORS IN ENGLISH IN RELATION TO COGNITIVE STYLE AND CEREBRAL DOMINANCE

3.4 Operational Definitions

In discussing the problem and the conceptual framework, quite a few technical terms were used. To avoid ambiguity and to bring precision to the investigation, it was felt imperative to define the major terms of the problem.

Operational definitions of the major terms/concepts are as below:

3.4.1 Error:

Error refers to any systematic and consistent deviation from the accepted conventions or practices of the native users of a language in use of language.
In this study, the term Error is taken to mean an inappropriate use of a language item in one or more of the areas of vocabulary, spelling, punctuation, functional grammar and translation and manifest in the written language of the subjects.

3.4.2 English:

English language, being spoken all over the world, has several known and accepted variants, however, in the context of this investigation, English means the Standard British English.

3.4.3 Cognitive Style:

Cognitive Styles are the characteristic, self-consistent modes of functioning which individuals show in their perceptual and intellectual activities. These styles are manifestations of personal functioning which cut across diverse psychological areas. (Witkin et al, 1971)

Keefe (1979, 1988 and 1991) has identified more than 20 different Cognitive Styles of bipolar distinctions, but this investigation uses the term Cognitive Styles to mean the Field Dependent and Field Independent measure or dimension of intellectual and cognitive functioning and as measured by the GEFT.

3.4.4 Cerebral Dominance:

Cerebral Dominance is explained as “the normal tendency for one of the two sides of the brain or cerebral hemispheres to have a stronger control over some functions of the mind and the body” “irrespective of the cognitive nature of the task.” (Sackheim, Greenberg, Weiman, Gur, Hungerbuhler and Geschwind, 1984; Encarta, 2006)

The concept of Cerebral Dominance postulates that an individual can be Left, Right or Whole brain dominant. Since the two hemispheres are “specialized and perform different functions, the individuals with different Cerebral Dominance will respond to the same task in different ways all of which will be in accordance with their Cerebral Dominance. (Gibson, 2002)

The present investigation uses the term Cerebral Dominance to mean Left, Right or Whole Brain dominance in a subject’s Style of Learning and Thinking and indicated and appraised through the SOLAT test by Dr D Venkataraman.
3.4.5 Locale:
Locale or localities are usually recognized as urban, rural and semi-urban or semi-rural areas.

In this study the term Locale is used to mean a locality either fully urban or fully rural as recognized in the records of the local revenue or administrative offices.

It is also used to mean the location of a school or the permanent dwelling place of a subject. The basis for deciding the locale of a school as urban or rural was the list of the schools in the office of the DPI Schools (Secondary), Punjab.

3.4.6 Gender:
The term is taken to mean the sex of a subject which could be either male or female.

3.4.7 Caste:
The study uses the term to differentiate the subjects- male or female, urban or rural- on the basis of the castes notified as Scheduled in The Constitution (Scheduled Castes) Order, 1950 (C.O. 19).

For the express reason of research, the investigation differentiates between the SC and Non-SC castes only.

3.4.8 Grade XI:
The study uses this term is to mean the class next to Matric and in popular parlance known as +1 class. Thus, by the grade XI students is meant the students in +1 class during the academic session 2006-07.

3.4.9 Government School:
In this study the term Government Schools is used to mean the Senior Secondary Schools fully owned and run by the Punjab Government; which are affiliated to and are recognized by Punjab State Education Board, S. A. S. Nagar; which teach the syllabus prescribed by the PSEB and do not have English either as first language or as medium of instruction.

3.4.10 Patterns:
The Accurate and Reliable Dictionary (2009) explains Pattern as “a customary way of operation or behavior” or as “something regarded as a normative example”. Infoplease (2009) calls Patterns “a distinctive style”.

In this study, the term has been used to denote a characteristic, consistent or normative way or manner of responding to a language item.

3.4.11 Large Number of (Errors):

There were practically no precedent definitions of “a large number of errors” because whether at the individual or institutional level, the allowable limits of errors are always subjective, subject to the aspired at level of achievement or the avowed objectives of education.

After a lot of research of similar studies, deliberations with experts and taking into account of the practicalities and other issues, a practical definition of the term was worked out to suit to the purposes of this study. One such consideration was that the sampled students had all passed English language in their Matric examination for which they had scored at least thirty-three percent marks. Further, at the time of the collection of data on Errors, all of them were in grade XI and pursuing further studies in English. So, when such students committed errors in a test that tested knowledge of Matric class, it was a matter of concern.

Accordingly, the recommended permissible limit of sixty-six percent errors (the same as the PSEB’s percentage of tolerance) was rejected and it was decided that: if the scores of errors by an individual or a particular group in any given area of errors were greater than the Median value of errors by the total sample (N = 400) for that area, the individual or the group would be considered to have committed a large number of errors in that particular area of errors.

3.5 Objectives of the Study

The study is undertaken with the aim to fulfill the following specific objectives:

1. To study the errors committed by students of grade XI in written English work in vocabulary, spelling, punctuation, functional grammar and translation.
2. To study the patterns of errors committed by learners in relations to locale (urban, rural), gender (male, female) and caste (SC and Non-SC).
3. To study the differences in errors in relation to cognitive styles: Field dependence and Field independence.
4. To study the differences in errors in relation to hemisphericity: Left, Right and Whole Brain.
5. To collect opinions on the possible causes of errors by the sample from experts and practicing teachers.
6. To make recommendations emerging out of the problem under investigation.

3.6 Hypotheses

In the direction of the objectives of the study, and in the light of the review of the related literature, the following hypotheses were formulated/ postulated for verification:

1. Large numbers of errors of various types are committed by students.
2. (a) The patterns of errors will not differ in relation to locale.
   (b) The patterns of errors will differ in relation to gender.
   (c) The patterns of errors will not differ in relation to caste.
3. The patterns of errors of students with different cognitive styles will differ significantly.
4. The patterns of errors of students with different hemisphericities (cerebral dominance) will differ significantly.

3.7 Delimitation of the Study

In view of the limited time and resources at the disposal of the investigator, the study had to be delimited with regard to variables, design and statistical tools.

The study was limited to 400 grade XI students of PSEB affiliated Government schools of three districts of Punjab namely, Amritsar, Hoshiarpur and Sangrur. It was further delimited to errors in written English in the areas of Translation, Punctuation, Spelling, Vocabulary and (Functional) Grammar.

3.8 The Sample and the Sampling Technique

The sample comprised of 400 students of grade XI from Government run secondary schools. Only those students were selected who spoke Punjabi as Mother tongue and whose medium of instruction had always been Punjabi.

The sample was drawn from 19 schools randomly selected from the three again randomly selected districts of Punjab - Amritsar, Hoshiarpur and Sangrur.
It included schools from both rural and urban areas. District-wise distribution of the schools taken for sample is as given in Table 1 on page 84.

The sample was raised/collected using the Proportionate to Population Size (PPS) sampling technique.

As such, the various sub groups, in relation to one another, were in the following ratios:

Males and female students in equal numbers; rural and urban students in 70:30 and SC and Non-SC students in 28:72 ratio.

Accordingly, out of the total sample of 400 students, the males and females were in equal numbers i.e. 200 students each.

A split up/break up of the sample is given in Figure 1 on page 85.

3.9 Design of the Study
Survey Research Method was made use of for the purpose of the present investigation.

3.10 Description of the Tools

The following Standardized and Self-constructed tools were used to collect data along with the personal data sheets:

3.10.1 The Group Embedded Figures Test (GEFT)

The GEFT was developed by Herman A. Witkin, Philip K. Oltman, Evelyn Raskin and Stephen A. Karp in 1971 and was published by Consulting Psychologists Press, Inc., USA. The GEFT is the most widely accepted test of measurement for the cognitive styles of field-independence and field-dependence, particularly for research in second language acquisition.

3.10.1.1 Structure of the GEFT:

The GEFT is a perceptual test. The subject’s task on each trial is to locate a previously seen simple figure within a larger complex figure which has been so organized as to obscure or embed the sought-after simple figure. In the strictest interpretation, scores on the GEFT reflect the extent of competence at perceptual disembedding, signifying in effect greater differentiation in other areas of the person’s psychological activity.
<table>
<thead>
<tr>
<th>District</th>
<th>School Name</th>
<th>Location</th>
<th>Gender</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amritsar</td>
<td>Govt. Senior Secondary School, Ram Bagh Gate</td>
<td>Urban</td>
<td>Boys</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Govt. Senior Secondary School, Chheharta</td>
<td>Rural</td>
<td>Boys</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Govt. Senior Secondary School, Lopoke</td>
<td>Rural</td>
<td>Boys</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Mall Road</td>
<td>Urban</td>
<td>Girls</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Jandiala Guru</td>
<td>Rural</td>
<td>Girls</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Raja Sansi</td>
<td>Rural</td>
<td>Girls</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Ajnala</td>
<td>Rural</td>
<td>Girls</td>
<td>25</td>
</tr>
<tr>
<td>Hoshiarpur</td>
<td>Govt. Senior Secondary School, Hoshiarpur</td>
<td>Urban</td>
<td>Boys</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Govt. Senior Secondary School, Mukerian</td>
<td>Rural</td>
<td>Boys</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Govt. Senior Secondary School, Dasuya</td>
<td>Rural</td>
<td>Boys</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Sector III, Talwara</td>
<td>Urban</td>
<td>Girls</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Mahil Pur</td>
<td>Rural</td>
<td>Girls</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Nangal Khurd</td>
<td>Rural</td>
<td>Girls</td>
<td>23</td>
</tr>
<tr>
<td>Sangrur</td>
<td>Govt. Senior Secondary School, Sangrur</td>
<td>Urban</td>
<td>Boys</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Govt. Senior Secondary School, Lehragaga</td>
<td>Rural</td>
<td>Boys</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Govt. Senior Secondary School, Bhawanigarh</td>
<td>Rural</td>
<td>Boys</td>
<td>23</td>
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<tr>
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<td>Girls</td>
<td>18</td>
</tr>
<tr>
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<td>Rural</td>
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</tr>
<tr>
<td></td>
<td>Govt. Girls Senior Secondary School, Bhawanigarh</td>
<td>Rural</td>
<td>Girls</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>400</strong></td>
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</table>
The specific rationale for using the GEFT to assess broad dimensions of personal functioning comes from cognitive-styles theory and the evidence accumulated in the course of its extensive research application.

The GEFT is a modified version of the original EFT to facilitate group testing for screening the field independence dependence dimension. It retains seventeen of the eighteen items of the original test, besides seven new items have also been introduced all twenty-five of which have been arranged in three sections.

The first section consists of seven simple items that are for practice; each of the second and third parts consists of nine figures that are more complex than the items in the first part. In every section the figures are arranged in an increasing order of difficulty.

As in the EFT, the subject here is prevented from seeing simultaneously the simple form and the complex figure containing it. This is accomplished by printing the simple forms on the back cover of the GEFT booklet pages, so that both the simple forms and the complex figures cannot be exposed simultaneously. The subject, however, is allowed to look back at the simple form as often as he wishes.

The time limit for second and third sections is five minutes each. The score is determined by the number of correct simple forms identified in the second and third section of the test. The highest possible score with GEFT is 18.

Thus the GEFT is a speed test and is meant to be administered as a group test over a broad age range. The ease of administration and scoring also make it a popular test.

3.10.1.2 Reliability of the GEFT:

Reliability of the GEFT was established by estimating correlation between parallel forms with identical time limits. Correlations between the 9-item First Section scores and the 9-item Second Section scores were compounded and corrected by Spearman Brown prophecy formula, producing a reliability estimate of .82 for both males and females. These reliability estimates compare favorably with those of the EFT and are in themselves sufficiently high.

3.10.1.3 Validity of the GEFT:

Since the test was intended as a group form of the EFT, the most direct criterion measure was the “parent” form of the test, namely the EFT. In one study,
the subjects were administered the Second Section in its group form and the Third Section as an individually administered test using the items in their original colored form. Another group was given the Second Section individually and the Third Section as a group test. The correlations, corrected for reduced test length and combined for the two groups, show the coefficient of correlation (in negative because the tests were scored in reverse fashion) as -.82 and -.63 for both males and females respectively which are sufficiently high.

The GEFT was evaluated in terms of its relationship to another measure of psychological differentiation, the degree of Articulation of the Body Concept, which is assessed by means of a scale- ABC applied to human figure drawings.

The correlations between GEFT and ABC, at .71 and .55 for males and females respectively, also are substantial and generally comparable with those that have been reported for the EFT.

3.10.1.4 Administration of the GEFT:

The GEFT is a very easy to administer test and is over within 20-30 minutes. Besides, few things (test-booklets, stop watch and a set of sharpened soft black pencils and erasers) and little training to the administrators are required.

Once the test-booklets and pencils have been distributed and the identifying information has been filled in on the cover page by the subjects, they are directed to read the instructions which include two practice problems for them. The administrator gives oral directions also stressing the necessity for tracing all lines of the Simple form and of erasing all the incorrect lines.

Signal is given for start of the first section which is to be completed within 5 minutes and which is meant for practice and whose score is not counted towards the final score.

Then the two sessions of 5 minutes each with a small break are started. In each of these sessions the subject works on 9 items each which are more difficult than the practice session. The subjects are told to work as fast and as correctly as they can. They are also told that they may not be able to finish all the items in these sections; all the same they are to end the sections within the stipulated time only.

3.10.1.5 Scoring of the GEFT:
The score is the total number of simple forms correctly traced in Second and Third Sections combined. Omitted items are scored as incorrect. The items in the First Section are not included in the total score.

Some training and practice may be sometimes required to score items. A scoring key is provided with the Simple Form traced over each Complex Figure. In order to receive credit for an item, all lines of the Simple Form must be traced (including the inner lines for the cube, Simple Form “E”). The scorer must also be sure that no extra lines have been added by the subject and that all incorrect lines have been erased.

Subjects with a score of 12 or more are classified as FI individuals, and subjects with a score of 11 or less are classified as FD individuals.

3.10.2 The SOLAT (Style of Learning and Thinking)

For identifying the hemisphere dominance, the ways in which and the levels at which the information is being processed by the individual are studied. Of the several tools available for the purpose of studying the “Styles” of Learning and Thinking, the SOLAT is the most prominent and most frequently employed test.

The present investigation employed the Indian version of the SOLAT (Style of Learning and Thinking) test developed by Dr D Venkataraman in 1994.

The test was published by and is available from M/s PSY-COM SERVICES, New Delhi.

3.10.2.1 Structure of the SOLAT test:

The tool comprises 50 statements in all which cover 5 dimensions each of the two styles of learning and thinking. The dimensions for both the styles are as below:

For Learning Style, the dimensions are: Verbal, Content Preference, Class Preference, Learning Preference and Interest and for Thinking Style, the dimensions are: Logical/ Fractional, Divergent/ Convergent, Creative, Problem Solving and Imagination. There are 5 questions or statements each for each of the dimensions under both the styles.

3.10.2.2 Reliability of the SOLAT test:

The SOLAT possesses a significant level of reliability.
Measured by Test-Retest Method on 150 boys and 150 girls after a period of one month after the first test, the co-efficient of correlation was found to be .89 for the Right hemisphere function, .65 for the Left and .71 for the Integrated scores.

3.10.2.3 Validity of the SOLAT test:

Validity of the SOLAT was established through different means all of which make it a highly valid tool.

Content Validity- For the preliminary draft the items were chosen or constructed after an extensive survey of the existing literature on the subject. The content validity of the test items of the final form of the tool was established by expert Professors and Doctors in the field of Psychology and Neurosurgery respectively.

Construct Validity- The construct validity of the tool was conducted by the author himself. The SOLAT was tested with 50 students from a variety of academic disciplines. As part of the course, each student took several tests of creativity which provided to construct validity evidence. Creative problems solving and creative thinking call for both left and right hemisphere functions. Considerable evidence suggests that the essence of creative behavior calls for right hemisphere functions and judgment, evaluation and elaboration required left hemisphere functions.

Concurrent Validity- The present version of SOLAT tool was validated with the help of standardized SOLAT tool constructed by Paul Torrance. To find out the validity of the tool, both the versions of the SOLAT were administered to 300 subjects and the correlation between the two tests was found to be .84 for the right hemisphere, .61 for the left and .68 for the integrated part, which shows the SOLAT possesses a reasonably high level of concurrent validity also.

3.10.2.4 Administration of the SOLAT test:

The tool is constructed in a very simple and easy language. It is a group test and is meant to be administered from eighth standard and up to post graduation.

Good testing conditions should be arranged and maintained throughout the testing. There should be quiet and no distractions. The temperature of the room should also be comfortable. It should be made sure that the decision-making process is clear. For each item, there are two statements, and there are four ways in which these can be responded to: checking the first statement, checking the second statement, checking both the statements and checking neither of the statements.
The subjects should record their responses in the blank on the test sheet only. They should examine their responses thoroughly to make sure that they have made firm marks which will enable to assess hemispheric dominance correctly.

3.10.2.5 Scoring of the SOLAT test:

The SOLAT has a built-in scoring key which makes scoring easy. Checking of the first item indicates right hemisphere; second item indicates left hemisphere and checking of both the items indicates integrated hemisphere or whole brain.

For scoring a test, first count the number of items where both the statement have been checked and write the number in the box “W” indicating the score for Whole brain. Then count the number of items where the first statement has been checked and write this number in the box “R” indicating the score for Right brain. Finally count the number of items where the second statement has been checked and write this number in the box “L” indicating the score for Left brain. The items where neither statement has been checked are not counted.

The hemisphericity dominance is determined on the basis of the highest score in three categories of dominance, as far as a group testing or score is concerned.

For individual scoring and comparison with a reference population, the Raw scores can be converted to Sten Scores as provided in the manual. The sten of 4-7 indicates average score, sten 8-10 indicates high and extremely high score and sten of 1-3 indicates low and extremely low scores.

Although the SOLAT is a standardized test with an easy and lucid language and is meant for school going populations, the repeated difficulty of several students in comprehending large numbers of test items in the initial stages of data collection necessitated it, along with the GEFT, to be translated into Punjabi, the mother tongue and medium of instruction of the sample of the study. The translations were duly approved by the experts from the fields of psychology and languages before use.

3.10.3 The Test of Errors in Written English (Self Constructed)

Owing to the absence of any standardized tool for detecting errors in written English, it became imperative to construct the test for the study.

It was decided to use an objective type test of errors for elicitation of data for the present study. The decision was also influenced in a great measure by the fact that
the sample essays from the intended sample were either too small or contained large numbers of errors which could be noted under several classes and hypothesizing whose sources was quite difficult. Apart from that, the investigator didn’t want to include the ‘rhetorical errors’ in the focus or purview of the present study.

3.10.3.1 Construction of the Tool: The Punjab School Education Board Class X (Matric) syllabi of English for academic years 2006-07 and 2007-08 were used as the bases of the test of errors.

Class X was selected because in this class the final summative exams are conducted not at local level but at the central level by the Punjab School Education Board, Sahibzada Ajit Singh Nagar. It means these exams can safely be considered as standard examination and it would be only justifiable to compare all students who have taken and passed these exams.

The syllabi were studied to understand the intended aims and objectives of learning English, the contents for achievements of these goals, and the expected levels of mastery in different domains (viz. knowledge, comprehension, application, etc in the Cognitive domain).

On the basis of their high importance for all English as Foreign Language or English as Second Language learners, especially in the written aspect of language, the five areas of Grammar, Translation, Vocabulary, Punctuation and Spelling were selected to be studied for patterns of errors in them.

Planning the Test:

Keeping in mind the characteristics of the intended population and the limitations of resources at hand, the length of the test, type or nature of the test items, methods of scoring and several other factors were worked out through library studies of researches on tool constructions and through interviews with teachers, subject specialists and test specialists.

A blue print of the test, carrying two hundred items under different sections, was thus prepared based on the contents of the Class X (Matric) grammar books prescribed by the Punjab School Education Board for academic years 2006-07 and 2007-08. Carefully worded instructions which indicated briefly the nature and purpose of the test were also included in the draft.
The topics selected for each linguistic category of the errors were as follows:

<table>
<thead>
<tr>
<th>Error Type</th>
<th>Topics</th>
<th>No. of Items</th>
<th>Type of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar</td>
<td>Supply the correct form of Verb</td>
<td>40</td>
<td>Rewrite using the correct form of the verb</td>
</tr>
<tr>
<td></td>
<td>Prepositions</td>
<td></td>
<td>fill ups</td>
</tr>
<tr>
<td></td>
<td>Articles (Definite, Indefinite)</td>
<td></td>
<td>fill ups</td>
</tr>
<tr>
<td>Translation</td>
<td>Simple Assertive and Negative Sentences of the different Tenses</td>
<td>40</td>
<td>Supply sentences in English</td>
</tr>
<tr>
<td></td>
<td>Imperative Sentences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Imperative Sentences with ‘Let’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Causative Sentences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conditional Sentences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sentences using ‘Introductory It’, Correlatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of ‘Modals.’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of Reflexive Pronoun, Use of Possessive Pronoun, Sequence of Tense,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of the Infinitive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Recognizing if the meaning of the word is right or not</td>
<td>40</td>
<td>Tell right or wrong</td>
</tr>
<tr>
<td></td>
<td>Using the correct Number (Singular or Plural) of the Words</td>
<td></td>
<td>Fill in the blanks choosing the given Alternatives</td>
</tr>
<tr>
<td></td>
<td>Choosing the Most Suitable Word</td>
<td></td>
<td>Fill in the blanks choosing the given Alternatives</td>
</tr>
<tr>
<td>Punctuation</td>
<td>Use of Capitals</td>
<td>40</td>
<td>Punctuate the given sentences or the words in them</td>
</tr>
<tr>
<td></td>
<td>Use of Hyphen to make Compound Words</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of different Apostrophe, Contractions, Colon, Semicolon, Comma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spelling</td>
<td>Use of Vowel Sounds (Pure Vowels and Diphthongs)</td>
<td>40</td>
<td>Write in English</td>
</tr>
<tr>
<td></td>
<td>Use of Consonant Sounds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While making the preliminary draft of the test, the existing tests and several books were consulted. Besides, 308 three hundred word essays and 47 paragraphs written as routine classroom work by the XI grade students of different Government Senior Secondary Schools were collected from different districts and an idea of the
major areas and types of errors made by these students was had. Although, most of the test items were new and original, these were modeled closely on the errors committed in these essays and paragraphs.

A large number of test items of suitable difficulty were compiled and submitted to the subject experts for their opinions and criticism. After the modifications in the light of the experts’ suggestions, the preliminary draft was typed and photocopied and administered to a sample of 200 class XI students of six schools of Mansa, Ropar and Fatehgarh Sahib Districts. All the schools were affiliated to the Punjab School Education Board.

Description of the sample is as given below:

<table>
<thead>
<tr>
<th>Name of the School</th>
<th>District</th>
<th>Locality</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt Boys Sr Sec School, Mansa</td>
<td>Mansa</td>
<td>Urban</td>
<td>38</td>
</tr>
<tr>
<td>Govt Sr Sec School, Bhikhi</td>
<td>Mansa</td>
<td>Rural</td>
<td>32</td>
</tr>
<tr>
<td>Govt Sr Sec School, Ropar</td>
<td>Ropar</td>
<td>Urban</td>
<td>36</td>
</tr>
<tr>
<td>Govt Sr Sec School, Kakrali</td>
<td>Ropar</td>
<td>Rural</td>
<td>40</td>
</tr>
<tr>
<td>Govt Sr Sec School, Mandi Gobindgarh</td>
<td>Fatehgarh Sahib</td>
<td>Urban</td>
<td>30</td>
</tr>
<tr>
<td>Govt Sr Sec School, Amloha</td>
<td>Fatehgarh Sahib</td>
<td>Rural</td>
<td>24</td>
</tr>
</tbody>
</table>

Total Number of Students = 200

3.10.3.2 Validation of the Test:

Validity and Reliability are doubtlessly the two most essential qualities of a good test.

Validity: It is the extent to which a measuring instrument actually measures the underlying concept it is supposed to measure.

There are different types of validity including Content validity, Criterion related validity and Construct validity.

Content Validity: This is a non-statistical type of validity that involves “the systematic examination of the test content to determine whether it covers a representative sample of the behaviour domain to be measured” (Anatasi and Urbina, 1997).
Foxcraft et al (2004) note that by using a panel of experts to review the test specifications and the selection of items the content validity of a test can be improved.

Thus, to establish the content validity of the draft tool, it was got analyzed by a panel of experts (Appendix V) comprising Methodology experts from Colleges of Education; Language experts from Degree colleges and Principals, Lecturers and Senior Teachers from Government Schools affiliated to the PSEB. The tool was accepted and used only on their identification that the items in it were relevant to study the Errors in the areas of Grammar, Translation, Vocabulary, Punctuation and Spelling in Written English.

Reliability: Reliability is the measure of consistency with which a test measures whatever it is measuring.

Reliability of a test may be estimated through a variety of methods that include Test Retest Method, Split half, Equivalent forms, Inter rater reliability, etc.

However, formal psychometric analysis, called the item analysis, is considered the most effective way to increase reliability. This analysis consists of computation of item difficulties and item discrimination indices. It is based on the concept that if items that are too difficult, too easy, and/or have near-zero or negative discrimination are replaced with better items, the reliability of the measure will increase. (The Wikipedia Encyclopedia, 2006 k)

Besides, Henning (1987) states: “The single most important characteristic of an item to be accurately determined is its difficulty” and Shermila (2006 b) used the measure of Item Difficulty to establish Validity of the individual items.

Hence, after scoring the test items on the preliminary draft tool, an item analysis consisting of computing measures of Item Difficulty and Item Discrimination was conducted to establish Reliability and further Validity.

There exit quite a many methods for calculating indices of Item Analysis, however, for this test the analysis was carried out in accordance with Kelley’s (1939) method was used. Kelley demonstrated that by taking upper and lower groups of 27% of total sample, one could say with greatest confidence that those in the upper group were superior in ability measured by the test to those in the lower group.

For calculating the Difficulty Value (D V), the following formula was used:
\[
\frac{R_U + R_L}{D. V.} = \frac{R_U - R_L}{0.5N}
\]

Where,
\(R_U = \) Number of right responses in the upper group
\(R_L = \) Number of right responses in the lower group
\(N = \) Total number of students in both the groups

The evaluative criteria for selection of test items according to index of difficulty value is as below:

<table>
<thead>
<tr>
<th>Index of Difficulty Value</th>
<th>Item Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 0.67</td>
<td>Poor items</td>
</tr>
<tr>
<td>0.60 to 0.67</td>
<td>Marginally good, usually subject to modification</td>
</tr>
<tr>
<td>0.20 to 0.59</td>
<td>Very good items</td>
</tr>
<tr>
<td>Below 0.20</td>
<td>Poor items</td>
</tr>
</tbody>
</table>

Thus, the items having difficulty value above 0.67 and below 0.20 were rejected and items having \(D. V.\) between 0.20 and 0.59 were accepted as such while some of the items whose difficulty values were between 0.60 and 0.67 were accepted after revision and modification.

After revision and modification, out of a total of 200 items, 39 items were rejected.

For calculating the Discriminating Power (\(D. P.\)), the following formula was employed:

\[
\frac{R_U - R_L}{0.5N}
\]

Where,
\(R_U = \) Number of right responses in the upper group
\(R_L = \) Number of right responses in the lower group
\(N = \) Total number of students in both the groups
The evaluative criteria for selection of test items according to the index of discriminating power is as below:

<table>
<thead>
<tr>
<th>Index of Discrimination Power</th>
<th>Item Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.40 and above</td>
<td>Very good items</td>
</tr>
<tr>
<td>0.20 to 0.39</td>
<td>Good, but marginally; usually subject to modifications</td>
</tr>
<tr>
<td>0.19 and below</td>
<td>Poor items</td>
</tr>
</tbody>
</table>

Following the above criteria, the items with discriminatig powers between 0.20 and 0.39 (both terms included) were selected and the items with discriminating powers of 0.40 and above and of 0.19 and below were discarded. A total of 53 items were discarded. Thus, out of the total accepted items on both counts was 108 out of which the most suitable 100 items were selected and the final draft of the tool was prepared.

The test retest method was used to further establish the reliability of the test. For this, the final draft of the test was administered to 76 students of two schools of Ludhiana District as mentioned below:

<table>
<thead>
<tr>
<th>Name of the School</th>
<th>Locality</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt Sr Sec School, Barewal Awana</td>
<td>Urban</td>
<td>42</td>
</tr>
<tr>
<td>Govt Sr Sec School, Dhatt</td>
<td>Rural</td>
<td>34</td>
</tr>
<tr>
<td>Total Number of Students</td>
<td></td>
<td>76</td>
</tr>
</tbody>
</table>

The responses of the sample were evaluated and the draft tool was administered to the same sample after a gap of 10-13 days and the reliability was computed which came out to be .88 which means the test can be stated to be sufficiently reliable.

3.10.3.3 The Structure of the Test of Errors in Written English:

The final accepted form of the test has the following features or specifications:
Keeping in view the advantages of objective type test items for the administrator, the testee and the scorer, in addition to their high degree of objectivity, most of the test items in all sections are objective type. In order to bring variety and to keep the testees interested, items of ‘match the items’, ‘tell right or wrong’, ‘fill in the blanks’, etc. have been introduced. All of these types of items are routinely used in the Punjab School Education Board class X exams, so, all students are fully familiar with them.

It is divided into five sections, each eliciting data on errors in the five different linguistic types of errors viz. Grammar, Translation, Vocabulary, Punctuation and Spelling.

Each section has twenty test items; hence, there is a total of one hundred test items.

Each wrong answer is awarded one mark and each right answer carries zero mark.

The test is standardized in terms of establishment of validity and reliability.

The test is easy to administer and take.

Scoring is easy and accurate.

The test carries a set of short but clear instructions indicating or explaining the intent or purpose of the test and other important information, which are read out by the administrators before the test.

The language of the test has been kept easy to meet the needs of the weakest students.

All responses can be recorded on the test itself in the slots given against each test item.

For the purpose of detection of errors, answer keys for all sections and test items have been prepared, validated and provided.

The break-up of items according to the Type of Errors is as given on page 98:
<table>
<thead>
<tr>
<th>Error Type</th>
<th>Topics</th>
<th>No. of Items</th>
<th>Type of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar</td>
<td>Supply the correct form of Verb</td>
<td>5</td>
<td>Rewrite using the correct form of the verb</td>
</tr>
<tr>
<td></td>
<td>Prepositions</td>
<td>8</td>
<td>fill ups</td>
</tr>
<tr>
<td></td>
<td>Articles (Definite, Indefinite)</td>
<td>7</td>
<td>fill ups</td>
</tr>
<tr>
<td>Translation</td>
<td>Simple Assertive and Negative</td>
<td>8</td>
<td>Supply sentences in English</td>
</tr>
<tr>
<td></td>
<td>Sentences of the different Tenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Imperative Sentences</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conditional Sentences</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sentences using ‘Introductory It’</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of ‘Modals.’</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of Reflexive Pronoun</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of Possessive Pronoun</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sequence of Tense</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of the Infinitive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Recognizing meanings of the given words</td>
<td>5</td>
<td>Tell right or wrong</td>
</tr>
<tr>
<td></td>
<td>Using the correct Number (Singular or Plural) of the Words</td>
<td>10</td>
<td>Fill in the blanks choosing the given Alternatives</td>
</tr>
<tr>
<td></td>
<td>Choosing the Most Suitable Word</td>
<td>5</td>
<td>Fill in the blanks choosing the given Alternatives</td>
</tr>
<tr>
<td>Punctuation</td>
<td>Use of Capitals</td>
<td>4</td>
<td>Punctuate the given sentences or the words in them</td>
</tr>
<tr>
<td></td>
<td>Use of Hyphen to make Compound Words</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of different Apostrophe</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contractions</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Colon</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Semicolon</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comma</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Spelling</td>
<td>Use of Vowel Sounds (Pure Vowels and Diphthongs)</td>
<td>20</td>
<td>Write in English</td>
</tr>
<tr>
<td></td>
<td>Use of Consonant Sounds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.10.3.4 Scoring of the Test of Errors in Written English:

Suitable to the purpose of statistical or quantitative computation of errors exhibited on the test, scoring of the errors is made possible.

Scoring is easy, quick and reliable. For the purpose, a scoring key with the right answers has been provided.

The scores of individual sections and the total score for the entire test can be computed separately as well as collectively and can be entered in the slots at the end of the test.
For most of the items a right response carries zero or no marks, and an error carries one mark. Thus an individual's maximum score on any one particular area can be up to 20 and the total score can be 100.

It calls for mentioning here that since it is a test of errors, a higher score on this test shows a lower proficiency in the target language.

For preparation of the scoring key to detect the errors, the Standard British English and its rules or conventions governing the studied aspects of Spellings, Grammar, Translation, Vocabulary and Punctuation were followed. In this connection, the following books were used as basis:


3.10.4 Questionnaire for Teachers and Experts for Collecting Reasons and Recommendations

A succinct and straightforward questionnaire was constructed and used to collect authoritative opinion of the practicing teachers (Principals, Officiating Principals, School Lecturers and teachers of Secondary and Senior Secondary Schools) and experts (Principals and Lecturers in Colleges of Education) on the various issues concerning the errors in English by the PSEB students.

It comprised 17 questions in all, divided into two parts, namely A and B. Part A had 11 questions of which the first 6 directly sought the respondents' views on the causes of errors in English (in particular) and in various areas of written English viz. Translation, Punctuation, Spelling, Vocabulary and Grammar. The next 5 questions required them to see the students’ errors in different areas in comparison to the other areas and to comment further on the comparatively high or low performance in these areas.
Part B asked the respondent teachers and experts to provide with concrete and feasible suggestions / recommendations to reduce the alarmingly high prevalence of errors in different areas of written English and to improve the standard of English in Punjab in general.

3.10.5 Personal Data Sheets

In addition to the above, a personal data sheet was also prepared and pressed into service to collect personal information about the subjects.

It was constructed using unstructured questions on variables like gender, locale and caste.

3.11 Procedure

As mentioned above, the purpose of the present investigation was to find out the types, patterns and degrees of Errors of the XI grade students of Punjab with Punjabi as their mother-tongue and medium of instruction in written English work in areas of vocabulary, spelling, punctuation, functional grammar and translation and to find out the differences in the errors of students of different locales (urban, rural), gender (male, female), castes (SC and Non-SC), Cognitive Styles (Field Dependent and Field Independent) and Cerebral Dominance (Left, Right and Whole Brained).

For this, the investigator got a list of rural and urban boys’, girls’ and co-educational secondary and senior secondary schools from the DPI (Secondary) Schools, Punjab. Nineteen schools were selected out of which thirteen were rural and six were urban.

The selected schools, both rural and urban, were visited by the investigator. Before the administration of the tests, the purpose of investigation was briefly explained and the respondents were encouraged to give correct answers and were assured that the results would be kept confidential and used purely for the purposes of this investigation. After these and other preliminaries, data were collected from all the suitable subjects available in all the visited schools.

The environment, procedures and testing situations were kept as similar as possible to have true and correct information.

The filled in response-sheets / test-booklets collected from each subject were tagged and grouped in their respective categories for scoring. The scoring of the
responses was done strictly according to the instructions and directions provided in
test-manuals.

The data so collected were recorded in tabular form for statistical analysis
according to the objectives of the investigation and for drawing conclusions.

3.12 Statistical Treatment of the Data

In order to achieve the objectives of the study, the data were subjected to
both Descriptive and Inferential Statistical Analyses.

In descriptive statistics, summary statistics viz. Distribution of Frequencies,
Mean, Median, SD, Skewness and Kurtosis were worked out on the scores of Total
Errors in English language of Total Sample (N=400).

Means and SD’s of errors of each of the five areas viz. areas of vocabulary,
spelling, punctuation, functional grammar and translation were calculated separately
also for all the eleven groups of subjects i.e. male, female, urban, rural, SC, Non-SC,
FI, FD, Left Brain Dominant, Right Brain Dominant and Whole Brain Dominant.
These were used to work out the Numbers and Percentages of students making a
large number of errors (scoring more than the Median value for that particular type/
area of errors) in total or in a particular type or area of errors.

To study and educe the patterns of errors, the Means of Errors by the various
groups were compared and ranks of hierarchy calculated.

t-tests were used to find out the statistical significance of the differences
between group means for all the variables separately. The significant differences
were also studied between the groups.

To determine the significance of differences among means of errors in
different areas by the students of different hemisphericities concurrently, the
inferential statistical technique of One Way Analysis of Variance was employed.

The ANOVA was employed in two steps: first, an over-all F test was carried
out to determine if there was any significant difference existing among any of the
means. If this F score was statistically significant, a series of Tukey’s post-hoc HSD
(Honestly Singnificantly Difference) tests were run to test all pairwise comparisons
among means and to determine which means were significantly different from which
other means.

The opinions of Experts and Serving Teachers on Causes of Errors were
subjected to Percentage Analysis and the Recommendations for their maximum
reduction were inferred upon and, placed under relevant headings, were reported at the appropriate places.

The results so obtained were tabulated for discussions, interpretations and conclusions in the following chapters.