This Chapter is devoted to describe the concept of quantification and assessment, apart from the tools used for this purpose. Here, the tool\textsuperscript{33} refers to questionnaire\textsuperscript{34} which was formulated on the basis of the objectives outlined for this study. Details of its structure, types and categories of the questions incorporated, their administration on the experimental groups, etc., are discussed. Question-wise rationale and the data (responses) collected on different aspects are also provided here.

4.1 Quantification and Assessment

‘Quantification\textsuperscript{35}’ is a process of indicating or expressing something in quantifiable manner; here, the summing up of the collected data or evidences. It is a prerequisite for evaluation, a part of which is assessment. ‘Assessment’ is defined as a process of making value judgement on the basis of evidences. It plays a vital role here, as the study is concerned with assessment in language learning with reference to syntactic aspects. Thus, ‘assessment’ and ‘quantification’ are closely related to each other.

4.2 Formulation of Tool (Questionnaire)

The questionnaire, formulated as a question-cum-answer book, is meant for collecting written responses from the examinees. Each of the questions included here, is framed on the basis of a problem embedded in

\textsuperscript{33} Tool : It refers to an instrument or device used to collect data or evidences.

\textsuperscript{34} Questionnaire : It refers to a list of questions with an earmarked space for providing the response to each of them; designed to elicit information about a subject or a particular area of study that can be analysed for usable information.

\textsuperscript{35} Quantification : It refers to the process of quantifying something or assigning numerical values to unknown magnitudes of materials or properties or traits or progress. (Subbiah Pon, 2008)
one of the learning points listed in the previous chapter under each of the 5 dimensions. viz., form, boundary, structure, function, and meaning that are associated with the three broad syntactic components viz., ‘phrase’, ‘clause’, and ‘sentence’.

In all, the questionnaire has 75 questions covering 94 problems. The details of their distribution, are as follows: 28 questions under phrase category form - 6; boundary - 2; structure - 7; function - 6; and meaning - 7. Questions covering various dimensions of phrase constitute 39% of the questionnaire.

25 questions under clause category: form - 6; boundary -2; structure - 6; function - 6; and meaning - 5. Questions covering various dimensions of phrase constitute 32% of the questionnaire.

22 questions under sentence category: form - 5; boundary -2; structure - 4; function - 6; and meaning - 5. Questions covering various dimensions of phrase constitute 29% of the questionnaire.

Among them, 34 are subjective type questions and 41 are objective type questions. The question-cum-answer book facilitates the examinees to quickly relating their responses to the question stems and also to maintain their response limits. Since the intention is to quantify the language being learnt, ‘yes’ or ‘no’ questions are generally avoided.

The following table of specification\textsuperscript{36} (tally table) provides the above mentioned details in a nutshell.

\textsuperscript{36} Table of Specifications: It is a two-way chart which describes the topics to be covered by a test and the number of items or points which will be associated with each topic
Tally Table
(indicating number of problems and number of questions covered)

<table>
<thead>
<tr>
<th>Dimensional categories</th>
<th>Syntactic components</th>
<th>Phrase</th>
<th>Clause</th>
<th>Sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Problems &amp; no. of questions covering them</td>
<td>No. of Problems &amp; no. of questions covering them</td>
<td>No. of Problems &amp; no. of questions covering them</td>
</tr>
<tr>
<td>Form</td>
<td>36</td>
<td>12 problems, 6 questions</td>
<td>17</td>
<td>6 problems, 6 questions</td>
</tr>
<tr>
<td>Boundary</td>
<td>12</td>
<td>4 problems, 2 questions</td>
<td>12</td>
<td>4 problems, 2 questions</td>
</tr>
<tr>
<td>Structure</td>
<td>43</td>
<td>14 problems, 7 questions</td>
<td>18</td>
<td>6 problems, 6 questions</td>
</tr>
<tr>
<td>Function</td>
<td>25</td>
<td>6 problems, 6 questions</td>
<td>17</td>
<td>6 problems, 6 questions</td>
</tr>
<tr>
<td>Meaning</td>
<td>21</td>
<td>7 problems, 7 questions</td>
<td>15</td>
<td>5 problems, 5 questions</td>
</tr>
<tr>
<td></td>
<td>137</td>
<td>Total 43 problems were covered through 28 questions</td>
<td>79</td>
<td>Total 27 problems covered through 25 questions</td>
</tr>
</tbody>
</table>

A section of the question-cum-answer book (ref. appendix-1: Questionnaire for data collection) in the beginning, has been earmarked for obtaining personal data of those examinees. The remaining sections are meant to have the written responses recorded in the relevant space, by the examinees.

Apart from the questionnaire for written response, a miniature form of it has also been created for getting oral responses (Ref. appendix-3: Questionnaire for Data Collection – oral response) from the same group of examinees (who volunteered for this purpose). This questionnaire too has a similar structure, but with a less number of questions proportionately covering
all the areas. It is designed in such a way that the oral responses of the examinees would be recorded by the researcher herself.

Answer Key: For both the questionnaires, answer keys / cues were also prepared with the intention of using them for comparison while determining the correctness of the responses to be obtained.

For the purpose of recording the responses, the questions with multiple problems, are considered to be as many questions as the number of problems (i.e., converting a single question into many in such a way that the number of such questions is equal to number of problems dealt with by them). Such questions are found under sl.no.4, 5, 6, 7, 9, 11, 12, 13, 14, 15, 35, 59 of the questionnaire for written response.

4.3 The Problem Perspectives

Each question is framed by incorporating at least one problem. ‘Problem’ here is conceived as an unknown part of the dimensional factors associated with the components of language; i.e., dimensional factors embedded in each of the learning points, that are identified and listed in chapter-3. There are 280 such problems, and 1/3 of them have been covered through 75 questions, by adopting stratified random sampling procedure. Broadly, it is assumed that each correct response indicates the learner’s acquaintance with atleast 3 problems of synonymous nature. Some of the questions have been framed with more than one problem-stem.

It may also be noted that 17 questions are earmarked for form related problems (constituting 23%), 6 questions boundary related problems (constituting 8%), 17 questions for structure related problems (constituting

37 Stem – It is a part of the question consisting the problems requiring a solution.
23%), 17 questions for function related problems (constituting 23%), and 17 questions for meaning related problems (constituting 23%).

4.4 Pilot Study

Prior to the formal administration of this questionnaires to the members of the experimental group, a pilot study was also conducted to determine the comprehensiveness of the questionnaire and time required for making response. Based on this pilot study, the items found below the level of critical points, were deleted while finalizing the questionnaire.

4.5 Experimental Group (Examinees)

For the purpose of this whole study, 3 batches of trainees learning Tamil as L2 at the SRLC of CIIL (having their mother tongue as one of the three languages viz., Hindi, Kannada, and Telugu), were considered; they are predominantly occupied with 64% of the experimental group. In addition to these learners, a small group of foreigners learning Tamil as L2 at the Pondicherry Institute of Linguistics and Culture (PILC), and International Institute of Tamil Studies (IITS) Chennai (having their mother tongue as one of the 4 languages viz., Chinese, Mandarin Chinese, and German) were also considered for discussion and cross verification of certain factors; they constitute about 11% of the experimental group. There is also another group of foreigners learning Tamil (which happened to be the mother tongue of their fore fathers) at the Malay University, Malaysia; they constitute 20% of the experimental group. Though the experimental group consists of three categories of learner groups those at the SRLC are focused as the main learner group in view of their structured learning under a common curriculum.

The 3 consecutive batches of learners of SRLC are duly marked as Batch 1 (2012-13), Batch 2 (13-14), and Batch 3 (14-15). Batch 4 consists of
two groups one from PILC and another from IITS (for practical purposes both the groups were treated as a single batch). Batch V consists of learners from Malay University, Malaysia (ref. Appendix-10).

4.6 Questionnaire Administration

The questionnaire for written response was administered in a formal situation (in the actual class room) with a prior announcement. The time frame of 180 minutes was given. The intention of this study and its significance, along with other related academic inputs were briefed to the examinees, in the beginning. The were also advised to provide the data independently without consulting their peers. The doubts raised by them were also clarified then and there. The questionnaire was administered to each of these 3 subgroups in 3 different dates during the same academic session.

Only about 50% of those in these sub groups, volunteered to appear for oral test which took place outside the class room in an informal situation. The oral responses provided by the examinees, were recorded by the researcher herself.

4.7 Question-wise rationale

The rationale behind each of the questions included in the questionnaire, is given below, in the order of their sl.nos.

Questions 1 to 5 were intended to test the examinee whether he knows and to produce the phrase forms viz., adverb phrase form, noun phrase form, and verb phrase form respectively by distinguishing one from the other.

Question 6 was intended to test the examinee whether he is able to transform the noun phrase into the adjective phrase.
Question 7 and 8 were intended to test the examinee whether he is able to use the relevant boundary markers and bounded phrase units in the appropriate place of the given passage.

Question 9 and 10 were intended to test the examinee whether he knows the sequence of structural elements and pattern of the given phrase units.

Questions 11, 12, 13, and 14 were intended to test the examinee whether he is able to produce phrase structures for the given patterns and vise versa.

Question 15 was intended to test the examinee whether he is able to produce the phrase structure by combining 1st part with the given other part.

Questions 16, 17, 18 were intended to test the examinee whether he knows the basic role / function of the given phrases.

Questions 19, 20, and 21 were intended to test the examinee whether he is able use the phrases in the given different contexts.

Question 22 was intended to test the examinee whether he knows the lexical meaning of the given phrase.

Questions 23, 24, 25, 26, 27, and 28 were intended to test the examinee whether he knows the indirect meaning (such as metaphor, contextual, connotative, idiomatic, etc.) of the given phrases in the given contexts.

Questions 29 to 33 were intended to test the examinee whether he knows the clause forms (viz., independent clause, dependent clause, noun clause, adverb clause (concessive and conditional) form respectively by distinguishing it from one another.

Question 34 was intended to test the examinee whether he is able to transform one clause form into another.

Question 35 was intended to test the examinee whether he is able to use the relevant boundary markers in the appropriate place (clause) of the given passage.
Question 36 was intended to test the examinee whether he knows the bounded unit i.e., resultant unit within the boundary of the phrase.

Question 37 to 40 were intended to test the examinee whether he knows structural sequence and patterns of the given units of a clause.

Questions 41 and 42 were intended to test the examinee whether he know how to construct clause for the given pattern respectively.

Questions 43 to 46 were intended to test the examinee whether he know the role or function or use of the given clause by distinguishing it from other roles.

Questions 47 and 48 were intended to test the examinee whether he is able to use the clause in the given contexts.

Question 49 and 50 were intended to test the examinee whether he knows the lexical meaning of the given clause.

Questions 51 to 53 were intended to test the examinee whether he knows the indirect meaning (such as connotative, idiomatic, etc.) of the given clauses in the given context.

Questions 55 to 56 were intended to test the examinee whether he knows the sentence forms (viz., simple, complex, and compound forms) by distinguishing it from other given forms.

Questions 57 and 58 were intended to test the examinee whether he is able to transform the one form of sentence into another by combining two simple sentence forms or by separating into two simple forms.

Question 59 and 60 were intended to test the examinee whether he is able to use the relevant boundary markers and bounded units appropriately (sentence) of the given passage.

Questions 61 to 65 were intended to test the examinee whether he knows the structural sequence and patterns of the sentence by identifying and distinguishing them from others and also by producing the same.
Questions 66 and 67 were intended to test the examinee whether he knows the role or function of the given sentence by distinguishing it from other roles.

Questions 68 to 70 were intended to test the examinee whether he know the usage of the given sentence by using them in the given context.

Questions 71 and 72 were intended to test the examinee whether he know the lexical or direct meaning of the given sentences by distinguishing it from other meanings.

Questions 73 to 75 were intended to test the examinee whether he know the indirect meaning (such as metaphor, idiomatic, connotative, etc.,) by distinguishing them from other kinds of meanings.

4.8 Responses as required Data

The responses obtained are considered evidences / data to prove that the problem contributing factors (embedded in the learning points on which basis, the questionnaire was developed) have been learnt. These evidences, on being classified in terms of the dimensional factors viz., form, boundary, structure, function, and meaning become quantifiable, as required for this study. Based on these details, the impact caused on to the examinees by each of these dimensional factors could also be derived apart from determining the strength and weaknesses of these learning points.

The responses so collected were recorded in a specially created ‘data recording table’ – one for written responses and the other for oral responses. The details are given below:

4.8.1 Table for recording written responses: The responses actually obtained are available in the question-cum-answer book. In view of their enormity, the details of responses are not included in the text; however, the
consolidation of which has been presented in a nutshell, after scrutinizing them for their correctness. All the tables (a total of 5 running into 30 pages) along with entries (meant for 3 batches of SRLC, and one batch each for PILC, IITS, Malay university) have been provided in the appendix-2 (Data presented in Tabular form), and only a sample of which is given below.

Column-1 (of the sample) indicates major dimensions covered; column-2 shows the minor dimensions covered; column-3 refers to sl.no. of the main questions and its subdivisions, as provided in the table; column-4 represents question number as provided in the questionnaire; column-5 indicates the examinees in alphabet codes (a, b, c, d, e, etc.); last column provides the total number of examinees who provided correct responses. The boxes of each row indicates the performance status of each examinee (‘✓’ indicates correct response, ‘✗’ indicates wrong response, ‘-‘ indicates not attempted). The performance status of each individual on each dimension is provided at the end of each section, the row of which is not serially numbered. This will provide a holistic view of the process test administration and responses collected.

Table for recording Written Responses (sample)

<table>
<thead>
<tr>
<th>Batch / Group No. &amp; Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Major dimensions covered</td>
</tr>
<tr>
<td>Form, boundary, etc.</td>
</tr>
<tr>
<td>Major Components covered</td>
</tr>
<tr>
<td>1.</td>
</tr>
</tbody>
</table>
4.8.2 **Table for recording oral responses**: Since the responses were recorded by the researcher herself there is no separate answer sheet provided to the examinees. The collected responses are consolidated and put them in one single table. The actual tables along with entries meant for 3 batches of SRLC (a total of 3 tables) have been provided in the appendix-4 (Data presented in Tabular form - oral response) and only a sample of which is given below.

Column-1 (of the sample) indicates syntactic aspects covered; column-2 shows the coverage of dimensions; column-3 refers to question number as in questionnaire for oral; column-4 represents question number as provided in the questionnaire (written); column-5 indicates number of examinees who have provided responses and their code (a, b, c, d, e, etc.) as indicated in the written response. The boxes of each row indicates the performance status of each examinee (against each question, the actual responses provided by the learners have been recorded).

**Table for recording Oral Responses (sample)**

<table>
<thead>
<tr>
<th>Batch / Group No. &amp; Year</th>
<th>→ learners →</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Syntactic aspects covered</strong></td>
<td><strong>Dimensions Covered</strong></td>
</tr>
<tr>
<td>1.</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>4(b)</td>
</tr>
<tr>
<td>4.</td>
<td>6(a)</td>
</tr>
</tbody>
</table>