4.0. Introduction

Application of statistical techniques in analysing and interpreting the collected data plays an important role in any research problem. The data must be carefully processed, systematically analysed and rationally concluded. This chapter deals with the analysis and interpretation of the data collected from the sample of the study. It is presented in two parts.

Part – I deals with the descriptive analysis. In this part, the description of the sample with their background characteristics are explained as a first step. The data obtained through the awareness rating scale were analysed. Mean and SD were computed. Based on the mean ± 1SD, the obtained mean scores were grouped under three categories namely – low, moderate and high to indicate the level of awareness of higher secondary teachers about various aspects of learning difficulties in students. Similarly, mean and SD was calculated for the scores obtained through attitude scale. By using mean ± 1SD, the mean scores obtained from the attitude scale were grouped under three categories – low, moderate and high level of attitude.

RESULTS AND DISCUSSION
Part–II deals with the differential analysis. Here, the effect of personal variables such as Gender, Age, Educational Qualification, Training in Special education, Years of experience, Location of School, Nature of School, Category of the School and the Type of school on the awareness and attitude of the higher secondary school teachers towards learning difficulties is studied. For this, mean and SD of each group in a variable with respect to awareness and attitude are calculated. Based on mean and SD, t-test / F-test is applied to know the significant differences between / among the groups. Whenever two groups are involved in a variable, t-test is applied and in case of more than two groups, F-test is applied to know the significant differences between / among the groups.

Part–III presents the correlation analysis of the study. In part-III the awareness of higher secondary schools teachers on different aspects of learning difficulties are presented. Similarly, the attitude scores of higher secondary schools teachers are also presented in this part of analysis. Then correlation analysis is carried out to verify whether there is any significant relationship between the awareness of the H.S.S. teachers about learning difficulties and their attitude towards learning difficulties in students.

Part–IV deals with multiple regression analysis. One of the main major objectives of the study is to know how far and to what extent the independent variables (Gender, Age, Educational Qualification, Training in special education, Years of experience, Location of school, Nature of school, Category of the school and the Type of the school) influence the dependent variables (Awareness and Attitude). For this, Step Wise Multiple Regression Analysis is done. This analysis predicts the contribution of independent variables to the dependent variables under the study.
PART – I: Descriptive Analysis

4.1. Descriptive Analysis of the Awareness and Attitude of Higher Secondary Teachers in dealing with Learning Difficulties in Students

The major objective of the study was to assess the awareness and attitude of higher secondary teachers in dealing with learning difficulties. Mean and SD were calculated in respect of awareness and attitude scores. By using mean ±1SD, the level of awareness and attitude of higher secondary teachers was divided into three categories – low, moderate, and high. The obtained results are presented in the form of tables and discussed.

4.1.1. Background Characteristics of the Sample

The area of the study was the Puducherry Region of Union Territory of Puducherry. There are 81 higher secondary schools in the Union Territory of Puducherry comprising four enclaves viz. Puducherry, Karaikal, Mahe and Yanam. There are 34 government higher secondary schools and 28 private higher secondary schools totalling 62 in the Puducherry region. Twenty five Government higher secondary schools out of 34 schools and seventeen private higher secondary schools out of 28 schools, altogether 42 higher secondary schools were selected randomly for the study covering rural and urban location as well as boys, girls and co-educational institutions. The higher secondary teachers working in these schools were selected as sample. The selected sample were analysed with their background characteristics. Table – 1 shows the characteristics of the sample.

Out of the 430 higher secondary teachers, 232 were men and 198 were women teachers. With respect to their age, 104 teachers were under 25 – 35 years of age, 132 teachers were between 36 – 45 years of age, 153 teachers were between 46 – 55 years of age and 41 teachers belonged to 56 years and above age group. As for
educational qualification, 268 teachers were post graduates with B.Ed., 74 teachers were with post graduates with M.Ed., 52 teachers were post graduates with B.Ed., and M.Phil while 36 teachers possessed master degrees with B.Ed., M.Ed., and M.Phil. Fifty eight teachers were with B.Ed., in Special Education. M.Ed., in Special Education was the Qualification for 20 Teachers. Sixty nine teachers had orientation programme in learning difficulties or education of children with special needs. Altogether 283 teachers did not have any training in special education. With reference to the variable ‘Years of Experience’, 97 teachers possessed 1 – 5 years of experience, 70 teachers 6 – 10 years, 51 Teachers 11 – 15 years, 76 teachers 16 – 20 years and 136 teachers with 21 years and above years of experience. Altogether 333 teachers were from urban schools and the remaining 97 teachers were from rural schools. With regard to the nature of the school, 245 teachers were from government schools while the remaining 185 teachers were from the private schools out of 430 teachers. With regard to type of school 78 teachers were from boys school, 134 teachers were from girls schools and 218 teachers were from co-educational higher secondary schools. Overall 430 higher secondary teachers formed the sample of the study.

<table>
<thead>
<tr>
<th>Personal Variables</th>
<th>Size (N = 430)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>232</td>
</tr>
<tr>
<td>Women</td>
<td>198</td>
</tr>
</tbody>
</table>

Table – 1: Background Characteristics of the Sample
### Age

- 25 - 35 Years: 104
- 36 - 45 Years: 132
- 46 - 55 Years: 153
- 56 Years+: 41

### Educational Qualification

- Post Graduate with B.Ed: 268
- Post Graduate with B.Ed and M.Ed: 74
- Post Graduate with B.Ed and M.Phil: 52
- Post Graduate with B.Ed, M.Ed, and M.Phil: 36

### Training in Special Education

- No Training: 283
- B.Ed in Special Education: 58
- M.Ed in Special Education: 20
- Orientation Programme in Learning Difficulties or Education of Children with Special Needs: 69

### Subject of Teaching

- Regional Language: 47
- II Language (English): 36
- Science: 244
- Arts: 61
- Commerce: 42
Years of Experience

- 1 - 5 Years: 97
- 6 - 10 Years: 70
- 11 - 15 Years: 51
- 16 - 20 Years: 76
- 21 Years and above: 136

Location of School

- Rural: 109
- Urban: 321

Nature of School

- Government: 245
- Government – Aided: 11
- Private: 174

Type of School

- Boys schools: 78
- Girls schools: 134
- Co – Educational schools: 218
4.1.2. Number and Percentage of Higher Secondary Teachers with their Level of Awareness about LD in Students

The study was conducted on 430 teachers working in Puducherry region of Union territory of Pondicherry. The level of awareness of higher secondary teachers is assessed on the basis of their scores obtained in the awareness rating scale. Their level of awareness about each aspect of learning difficulties is assessed in terms of number and percentage.

Table-2 depicts the number and percentage of higher secondary teachers with low, moderate and high awareness about various aspects of learning difficulties in students and awareness as a whole.

**Table – 2:** Number and Percentage of Higher Secondary Teachers with Low, Moderate and High Awareness about Various Aspects of Learning Difficulties in Students and Awareness as a Whole

| Learning Difficulties Awareness aspects | Number and Percentage of Teachers with Low Awareness | Number and Percentage of Teachers with Moderate Awareness | Number and Percentage of Teachers with High Awareness |
|-----------------------------------------|-----------------------------------------------------|----------------------------------------------------------|
|                                         | ( )                                                 | ( )                                                     | ( )                                                     |
| Concept of learning difficulties        | 111 (25.81)                                         | 252 (58.60)                                             | 67 (15.58)                                              |
| Characteristics of students with learning difficulties | 120 (27.91)                                         | 220 (51.16)                                             | 90 (20.93)                                               |
| Causes of learning difficulties         | 172 (40)                                            | 225 (52.33)                                             | 33 (7.67)                                                |
| Instructional strategies for students with learning difficulties | 62 (14.42)                                           | 246 (57.21)                                             | 122 (28.37)                                              |
| Guidance and counselling                | 57 (13.26)                                          | 195 (45.35)                                             | 178 (41.40)                                              |
| Aspects as a whole                      | 65 (15.12)                                          | 298 (69.30)                                             | 67 (15.58)                                               |

**Note:** Numbers mentioned in the brackets are in percentage.
Level of Awareness

- **Low**: Values from 2.14 and below
- **Moderate**: Values between 2.15 and 2.63
- **High**: Values from 2.64 and above.

From table – 2, the present study reveals that out of 430 higher secondary teachers, 252 (58.60%) teachers have moderate awareness, 111 (25.81%) teachers have low awareness whereas 67 (15.58%) teachers have high awareness about the concept of *learning difficulties in students*. With reference to the characteristics of students with learning difficulties, 220 (51.16%) teachers possess moderate awareness, 120 (27.91%) teachers possess low awareness and the rest i.e. 90 (20.93%) teachers possess high awareness. As for *causes of learning difficulties*, 225 (52.33%) teachers have moderate level of awareness whereas 172 (40%) teachers had low level of awareness and 33(7.67%) teachers have high level of awareness. With regard to *instructional strategies for students with learning difficulties*, 246 (57.21%) teachers have exhibited moderate awareness and 122 (28.37%) teachers have evinced high awareness while only 62 (14.42%) teachers possess low awareness. With regard to the aspect of *guidance and counselling*, 195 (45.35%) teachers have exhibited moderate level of awareness followed by 178 (41.40%) teachers with high level of awareness and 57 (13.26%) teachers with low level of awareness. As a whole, it is inferred that more number of teachers (69.30%) possess moderate awareness and only 15% of teachers possess high and low awareness about the various aspects of learning difficulties in students. It implies that the teachers need to be sensitised by means of orientation programme or inservice training. The same result is pictorially represented in through bar diagram for easy understanding (Fig-1).
Four aspects of Learning Difficulties have been included for this study, such as; concept of learning difficulties, characteristics of students with learning difficulties, causes of learning difficulties, instructional strategies for students with learning difficulties, guidance and counselling for LD students and their parents. Altogether 64 items have been included for this study. The level of awareness of higher
secondary school teachers for each item under each dimension has been assessed on the basis of the mean scores obtained by them in the awareness rating scale. Table-3 contains the mean scores and the level of awareness of higher secondary teachers for each item under all the five aspects of learning difficulties.

**Table – 3: Mean Scores and Level of Awareness of the Higher Secondary Teachers about Learning Difficulties in Students.**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Learning Difficulty Aspects</th>
<th>Mean Awareness Scores</th>
<th>Level of Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>1.</td>
<td>Learning difficulty is a disorder in language, speech, reading writing and associated communication skills</td>
<td>2.48</td>
<td>M</td>
</tr>
<tr>
<td>2.</td>
<td>All the students with learning difficulties need not exhibit a disorder in language, reading, writing, spelling and arithmetic</td>
<td>2.26</td>
<td>M</td>
</tr>
<tr>
<td>3.</td>
<td>Learning difficulties are concerned with the students who have sensory handicaps</td>
<td>2.20</td>
<td>M</td>
</tr>
<tr>
<td>4.</td>
<td>Learning difficulty does not include students who have learning problem due to visual, hearing or motor handicaps.</td>
<td>2.14</td>
<td>L</td>
</tr>
<tr>
<td>5.</td>
<td>Learning difficulty is not only concerned with a mental deficiency but also concerned with social and emotional factors</td>
<td>2.56</td>
<td>H</td>
</tr>
<tr>
<td>6.</td>
<td>Students with learning difficulties lack positive social behaviour and are poorly accepted by peers.</td>
<td>2.28</td>
<td>M</td>
</tr>
</tbody>
</table>
7. All the students with learning difficulties have brain damage 2.46 M
8. Students with hyperactivity, brain injury, perceptual disorders, minimal brain dysfunction, neurological impairments exhibit learning difficulties 2.21 M
9. Perceptual problems in students lead to learning difficulties 2.29 M
10. Learning difficulties may occur concomitantly with inappropriate instructions. 2.21 M
11. Students with severe learning difficulties have discrepancy between academic achievement and intellectual ability. 2.37 M
12. Limited ability in learning is not a sign of learning difficulty 2.22 M
13. Providing guidance to parents helps in identifying learning difficulties in students. 2.57 H
14. Students with specific learning difficulties do have special abilities even though they exhibit difficulties in learning. 2.49 M

II. Characteristics of Students with Learning Difficulties

15. Students with learning difficulties have lower self confidence and self esteem than normally achieving students. 2.48 M
16. Emotional disturbances are very common in students with learning difficulties 2.47 M
<p>| | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>17.</td>
<td>Inattention and excessive motor activity are the characteristics of hyperactive students</td>
<td>2.27</td>
<td>M</td>
</tr>
<tr>
<td>18.</td>
<td>Students with learning difficulties exhibit motivational problems and complex behaviours.</td>
<td>2.28</td>
<td>M</td>
</tr>
<tr>
<td>19.</td>
<td>Students with learning difficulties can be easily distractible and possess short attention span.</td>
<td>2.38</td>
<td>M</td>
</tr>
<tr>
<td>20.</td>
<td>Students with learning difficulties find it difficult to adjust with the new surroundings.</td>
<td>2.31</td>
<td>M</td>
</tr>
<tr>
<td>21.</td>
<td>Students with learning difficulties evince inability to follow simple oral directions, special relationship and classroom discussion.</td>
<td>2.41</td>
<td>M</td>
</tr>
<tr>
<td>22.</td>
<td>All students with learning difficulties are good in memory.</td>
<td>2.16</td>
<td>M</td>
</tr>
<tr>
<td>23.</td>
<td>Students with learning difficulties are unable to formulate sentences properly and confused in relationship and tenses.</td>
<td>2.36</td>
<td>M</td>
</tr>
<tr>
<td>24.</td>
<td>They are unable to organize the ideas into a clear concise pattern of words.</td>
<td>2.37</td>
<td>M</td>
</tr>
<tr>
<td>25.</td>
<td>Verbal communication is affected due to learning difficulties.</td>
<td>2.32</td>
<td>M</td>
</tr>
<tr>
<td>26.</td>
<td>Students with learning difficulties encounter problems both in breaking words into their components and in blending individual sounds to make words in English.</td>
<td>2.26</td>
<td>M</td>
</tr>
<tr>
<td>27.</td>
<td>Students with arithmetic difficulties possess problems in understanding reversibility of functions, directions and patterns.</td>
<td>2.36</td>
<td>M</td>
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<td></td>
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</tr>
<tr>
<td>28.</td>
<td>Students with learning difficulties find difficulty in writing chemical formulae / biological names and drawing biology diagrams.</td>
<td>2.35</td>
<td>M</td>
</tr>
<tr>
<td>29.</td>
<td>All the economically and socially backward students have learning difficulties</td>
<td>2.04</td>
<td>L</td>
</tr>
<tr>
<td>30.</td>
<td>Unhealthy home environment brings learning difficulties in students.</td>
<td>2.30</td>
<td>M</td>
</tr>
<tr>
<td>31.</td>
<td>Most of the nutritional deficient students have learning difficulties</td>
<td>2.14</td>
<td>L</td>
</tr>
<tr>
<td>32.</td>
<td>Hyperactivity and hypoactivity are factors influencing learning difficulties in students</td>
<td>2.12</td>
<td>L</td>
</tr>
<tr>
<td>33.</td>
<td>Genetic factor plays vital role in students with learning difficulties</td>
<td>2.14</td>
<td>L</td>
</tr>
<tr>
<td>34.</td>
<td>Handwriting, diagram drawing difficulties may be due to visual defects causing faulty imagery and immature motor development.</td>
<td>2.24</td>
<td>M</td>
</tr>
<tr>
<td>35.</td>
<td>The factor that hinders reading development in students includes poor quality of teaching of reading at school level.</td>
<td>2.32</td>
<td>M</td>
</tr>
<tr>
<td>36.</td>
<td>Poor teaching environment leads to learning difficulties in students.</td>
<td>2.43</td>
<td>M</td>
</tr>
<tr>
<td>37.</td>
<td>Students with learning difficulties find it difficult to remember verbal materials due to problems in phonological information.</td>
<td>2.32</td>
<td>M</td>
</tr>
</tbody>
</table>

**III. Causes of Learning Difficulties**
38. Faulty pronunciation of the teachers is the causative factor for the reading difficulty and communication skills of the students.

IV. Instructional Strategies for Students with Learning Difficulties

39. Students with learning difficulties may be taught, most frequently misspelled words, use of spelling dictionary and computerized spell check.

40. Story reading introduces students to new words, new sentences, new places and new ideas in the subjects like English.

41. Listening to words and passages through tape recorder, VCD will strengthen comprehension abilities.

42. To overcome reading difficulties in students language experience approach is essential

43. Reciprocal teaching helps students with learning difficulties to develop reading comprehension.

44. Reading aloud and paraphrasing are very helpful in the arts subjects like history, political science etc.

45. Motoric linguistic method and picture word system (Rebus approach) are not useful to overcome writing and spelling difficulties.

46. Providing systematic exercises to develop the neuropsychological skills in which students are deficient is helpful to overcome writing / drawing difficulties
Peer tutoring, group learning and multi sensory approaches facilitate learning of students with learning difficulties.

Attentional problems of students with learning difficulties can be solved with self instructional training and behaviour modification.

Problem solving training leads to increased social interaction and decrease behavioural problems and inattention.

Interaction between teachers and parents is needed to identify the learning difficulties at early stage.

Students with learning difficulties may be facilitated to use the teaching learning materials available in the resource room or centre for special educational needs.

Learning difficulties in students require individual attention by the teacher.

Selecting appropriate teaching methods to meet the specific needs of the students is essential to overcome the learning difficulties.

VAKT (multi sensory approach) provides simultaneous information through eyes, ears, fingers and muscles.

Guidance and counselling by a teacher promotes self-confidence among students with learning difficulties.
<p>| | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>56.</td>
<td>Teacher must develop a good rapport with the students with learning difficulties to avoid/break emotional barriers.</td>
<td>2.74</td>
<td>H</td>
</tr>
<tr>
<td>57.</td>
<td>Peer group guidance and counselling by the teacher develop positive attitude towards students with learning difficulties</td>
<td>2.65</td>
<td>H</td>
</tr>
<tr>
<td>58.</td>
<td>Teachers should sensitize the parents about the need to take balanced diet and fatless food to avoid hyperactivity in students.</td>
<td>2.48</td>
<td>M</td>
</tr>
<tr>
<td>59.</td>
<td>Parents counselling helps them to understand the different aspects of difficulties faced by the students with learning difficulties</td>
<td>2.62</td>
<td>H</td>
</tr>
<tr>
<td>60.</td>
<td>Involving parents in planning, development and organization of educational programmes for students with learning difficulties leads to better understanding of their students ability.</td>
<td>2.50</td>
<td>M</td>
</tr>
<tr>
<td>61.</td>
<td>PTA meetings, discussions and group work may give a chance to know the progress of the students with learning difficulties</td>
<td>2.64</td>
<td>H</td>
</tr>
<tr>
<td>62.</td>
<td>Community counselling facilitates development of positive attitude towards students with learning difficulties.</td>
<td>2.28</td>
<td>M</td>
</tr>
<tr>
<td>63.</td>
<td>Parental guidance facilitates to monitor and overcome the learning difficulties in students at home as well as in school situations.</td>
<td>2.57</td>
<td>H</td>
</tr>
<tr>
<td>64.</td>
<td>Directing parents to the specialist (Audiologist, speech therapist, ophthalmologists, physiologist, psychologist and occupational therapist) will be useful for the students with severe learning difficulties.</td>
<td>2.37</td>
<td>M</td>
</tr>
</tbody>
</table>
Level of Awareness

Low : Values from 2.14 and below
Moderate : Values between 2.15 and 2.63
High : Values from 2.64 and above.

Table-3 contains five dimensions, each dimension dealing with a particular aspect of learning difficulties i.e. concept of learning difficulty, characteristics of students with learning difficulties, causes of learning difficulties, instructional strategies for students with learning difficulties and guidance and counselling for LD students and their parents.

It is learning disabilities that are the most vague and mystifying when compared to other major handicapping or disabling conditions, with the possible exception of emotional disturbances. It is only at a later date that learning disabilities were officially recognised than other handicapping conditions and so there is still a great deal of debate as to what is meant by the term learning disabilities. There are many reasons why the field of learning disabilities is receiving considerable public attention. Persisting hope for remediation characterises the field, stimulated by examples of those unique individuals who purportedly had severe learning disabilities in their youth, yet made significant contributions to society as adults. Individuals such as Thomas Edison, George Patton, Woodrow Wilson, Albert Einstein, and many other distinguished men are said to have had a learning disability. Even one of the world’s most famous writers of children’s literature, Hans Christian Anderson had severe reading disabilities. As we explore the field of learning disabilities a challenging sub-area of the broader field of special education, we are confronted with more questions than answers, more contradictions than accepted facts. It is so because the field is quite new and the group of persons whom we now call learning disabled is unusually diverse. So it is necessary that
the teachers should have adequate awareness about the concepts of learning difficulties. This will help them in identifying LD students, planning educational programmes and implementing appropriate instructional strategy for them.

Under the aspect, *concept of learning difficulties*, there are fourteen items. The higher secondary school teachers have evinced high awareness about two items (S.No. 5 and 13). These teachers possess moderate level of awareness about eleven items related to the concept of learning difficulties (S.No.1,2,3,6 to 11,14). The awareness of teachers is very low regarding only one item (S.No. 4) related to the concept of learning difficulties. The responses made by the teachers reveal that the higher secondary teachers possess overall moderate level of awareness about the concept of learning difficulties. When compared with earlier research work (Sarojini, 2000; Dharmaraj, 2008), it is seen that the present teachers possess a better awareness about the concept of learning difficulties. The overall moderate level of awareness also indicates that the higher secondary teachers need better knowledge about learning difficulties.

The major characteristics of LD students are delayed spoken language development, poor spatial orientation and inadequate time concepts. These students experience difficulty in judging relationships and direction related confusion. They evince poor general motor coordination, poor manual dexterity and social imperfection. They are also known for inattention, hyperactivity, perceptual disorders and memory disorders. Teachers awareness about these characteristics is very essential to identify and to plan educational programme for LD students.
As for the aspect i.e. the characteristics of students with learning difficulties, their responses indicate that they possess moderate level of awareness about all the items (S.No. 15 to 28) related to the characteristics of students with learning difficulties. They have not shown low awareness regarding any item in similar manner, they have not exhibited high awareness about any item under this aspect. This analysis leads to the conclusion that the higher secondary school teachers have only moderate awareness about the characteristics of students with learning difficulties. As they have no high level of awareness, they should be given orientation about the different characteristics of students with learning difficulties so that they can identify the students with learning difficulties and circumvent learning difficulties in a better way.

It is very difficult to specify the causes of child’s learning disability. In most cases the cause of a child’s learning disabilities remains a mystery. Possible causes fall into three general categories such as organic and biological factors, genetic factors and environmental factors. Many professionals believe that learning disabled children have central nervous system dysfunction. Their brains malfunction in some way or the other. There has been ever increasing evidence that indicates that learning disabilities tend to run in families. There are adequate studies implicating heredity as a cause of learning disabilities, especially severe learning disabilities. Further, there is much evidence indicating that environmentally disadvantaged children are more prone to exhibit learning problems. An adequate awareness about the causes of learning difficulties will help teachers to plan programmes to circumvent such specific difficulties.

With regard to the aspect of ‘causes of learning difficulties’, the higher secondary teachers possess moderate level of awareness
about six items (S.No. 30, 34, 35, 36 to 38) related to the causes of learning difficulties. They have not manifested high awareness about any item. They have very low awareness about four items (S.No. 29, 31 to 33) related to the causes of learning difficulties. This reveals that the teachers do not know how the unhealthy home environment and science factors cause learning difficulties in students. It discloses the need for providing orientation programmes or inservice training to the teachers so that their awareness about the causes of learning difficulties can be enhanced to a considerable extent which will ensure a better preparedness on the part of the teachers to teach the LD students in the general education classrooms.

Instructional strategies for the LD students include behavioural intervention, cognitive behavioural interventions, multisensory approach and direct instruction. In practice, a teacher can combine two or more of these approaches in his instructional presentation. A judicious blend of the above approaches is bound to yield fruitful results.

As for the aspect, instructional strategies for students with learning difficulties, out of sixteen items included under the aspect, the teachers have high awareness about six items (S.No. 40, 41, 42, 50, 52, 53) This high awareness can be ascribed to their higher qualifications. It also points out that the teachers having M.Ed. and M.Phil qualifications have a reasonable knowledge about the innovative advanced techniques of instruction. These teachers possess moderate awareness (S.No. 39, 43, 44, 46 to 49, 51, 54) about the remaining items related to instructional strategies for students with learning difficulties. They have low level of awareness regarding only one item (S.No. 45). The level of awareness as reflected in the table reveals that the higher secondary teachers have moderate and high awareness
about the items related to the instructional strategies for students with learning difficulties. Their level of awareness is higher with regard to instructional strategies than their awareness with regard to concept, characteristics and causes of learning difficulties. As these aspects are related to special education and inclusive education, their awareness is somewhat moderate. But the items under these aspect i.e. instructional strategies are more familiar to the higher secondary teachers. It is because most of the teachers have studied about advanced innovative techniques of instruction either at M.Ed level or at M.Phil level. This can be ascribed to their better awareness about the items included under the dimension of instructional strategies for students with learning difficulties.

Guidance and counselling is very indispensable for the special needs children. It is more true so in case of LD students. Unless the teachers have adequate knowledge about the various measures of guidance and counselling, they cannot bring about any change in the cognitive behaviour of LD students. An awareness of guidance and counselling is very essential for the teachers to imbibe in LD students self confidence and self esteem. Once the LD students are properly tackled psychologically, it will be easy for the teachers to mould and shape them in tune with the societal needs and job requirements.

With reference to the aspect of guidance and counselling, there are ten items under this dimension. Of the ten items, the higher secondary teachers possess high awareness about six items (S.No. 55, 56, 57,59,61,63) which constitute about 30%. They have exhibited moderate awareness about four items related to guidance and counselling (S.No. 58,60,62,64) and in no item their awareness is very low. This reveals that the higher secondary teachers have adequate knowledge and adequate awareness about guidance and counselling.
Their high awareness is related to such items that highlight the role of the teachers in guidance and counselling.

The overall analysis of table-I leads to the following conclusions. The higher secondary teachers possess moderate level of awareness about the concept of learning difficulty, characteristics of students with learning difficulties and causes of learning difficulties. The teachers have better awareness about the instructional strategies for the students with learning difficulties and guidance and counselling. This can be ascribed to the better and higher qualifications possessed by the higher secondary school teachers. This also indicates that the higher secondary teachers have considerable knowledge about the innovative instructional strategies and guidance and counselling but they do not have adequate knowledge about the students with special needs. This shows that their knowledge and understanding in special education / inclusive education and students with special needs should be strengthened by means of orientation programmes or in-service training so that their competence to teach LD students can be enhanced to a considerable extent. Once their knowledge / awareness is strengthened, they will be able to identify the LD students at an early stage and they will be able to combat learning difficulties in a better way.

4.1.4. Number and Percentage of Higher Secondary Teachers with their Attitude Level towards LD in Students

Attitude rating scale was administered to all the 430 teachers selected for this study from the Puducherry region of the Union Territory of Pondicherry. Their scores in the attitude rating scale formed the base for assessing the level of attitude of the higher secondary teachers towards learning difficulties in students. Their
level of attitude towards each aspect of learning difficulties is assessed in terms of number and percentage. Table 4 reflects the number and percentage of higher secondary teachers with low, moderate and high attitude towards various aspects of learning difficulties in students and their attitude as a whole.

**Table – 4:** Number and Percentage of Higher Secondary Teachers with Low, Moderate and High Levels of Attitude towards Various Aspects of Learning Difficulties in Students.

<table>
<thead>
<tr>
<th>Learning Difficulties Attitude aspects</th>
<th>Number and percentage of Teachers with Low Attitude</th>
<th>Moderate Attitude</th>
<th>High Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept of learning difficulties</td>
<td>108 (25.12)</td>
<td>271 (63.02)</td>
<td>51 (11.86)</td>
</tr>
<tr>
<td>Characteristics of students with learning difficulties</td>
<td>137 (31.86)</td>
<td>228 (53.02)</td>
<td>65 (15.12)</td>
</tr>
<tr>
<td>Causes of learning difficulties</td>
<td>167 (38.84)</td>
<td>204 (47.44)</td>
<td>59 (13.72)</td>
</tr>
<tr>
<td>Instructional strategies for students with learning difficulties</td>
<td>41 (9.53)</td>
<td>222 (51.63)</td>
<td>167 (38.84)</td>
</tr>
<tr>
<td>Guidance and counseling</td>
<td>55 (12.78)</td>
<td>217 (50.47)</td>
<td>158 (36.74)</td>
</tr>
<tr>
<td>LD aspects as a whole</td>
<td>71 (16.51)</td>
<td>286 (66.51)</td>
<td>73 (16.98)</td>
</tr>
</tbody>
</table>

**Note:** Numbers mentioned in the brackets denote percentage.

**Level of Attitude**

- **Low**: Values from 3.42 and below
- **Moderate**: Values between 3.43 and 4.13
- **High**: Values from 4.14 and above.
Table–4, reveals that out of 430 higher secondary teachers, 271 (63.02%) teachers have moderate attitude, 108 (25.12%) teachers have low attitude, whereas 51 (11.86%) teachers have high attitude with regard to concept of learning difficulties in students. With reference to the characteristics of students with learning difficulties, 228 (53.02%) teachers possess moderate attitude, 137 (31.86%) teachers possess low attitude and the rest of 65 (15.12%) teachers possess high attitude. Further, 204 (47.44%) teachers have moderate level of attitude towards the causes of learning difficulties whereas 167 (38.84%) teachers have low level of attitude and less number of teachers (13.72%) have high level of attitude. With regard to instructional strategies for students with learning difficulties, 222 (51.63%) teachers evince moderate attitude, 167 (38.84%) teachers evince high attitude while only 42 (9.53%) belong to low attitude category. In the aspect of guidance and counselling, 217 (50.47%) teachers have exhibited moderate level of attitude followed by 158 (36.74%) teachers with high level attitude and 55 (12.78%) teachers with low level of attitude. As a whole, it is inferred that more number of teachers (66.51%) possess moderate attitude and only 16.98% of teachers possess high attitude and 16.51 teachers possess low attitude towards various aspects of learning difficulties in students. The bar diagram given below reflects the level of attitude of the teachers in terms of their number and percentage with reference to each aspect of learning difficulties in students (see Fig-3).
4.1.5 Mean Scores and Level of Attitude of the Higher Secondary Teachers towards Learning Difficulties in Students

Five dimensions of learning difficulties have been included for this study. The included aspects are concept of learning difficulties, characteristics of students with learning difficulties, causes of learning difficulties, instructional strategies for students with learning difficulties, guidance and counselling for LD students and their parents. Altogether 64 items have been included for this study. The level of attitude of higher secondary teachers for each item under each dimension is assessed on the basis of the mean scores obtained by them in the attitude rating scale. The mean scores and the level of attitude of the higher secondary teachers towards each item under the various aspects of learning difficulties are presented in table–5.
Table-5: Mean Scores and level of Attitude of the Higher Secondary Teachers towards Learning Difficulties in Students

<table>
<thead>
<tr>
<th>S.No. No.</th>
<th>Learning Difficulty Aspects</th>
<th>Mean Attitude Scores</th>
<th>Level of Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>I. Concept of Learning Difficulties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>The disorders in use of language (speech, reading, writing) and associated communication skills leads to learning difficulties in students.</td>
<td>4.19</td>
<td>H</td>
</tr>
<tr>
<td>2.</td>
<td>All the characteristics of learning difficulties are found in every student with learning difficulty</td>
<td>3.12</td>
<td>L</td>
</tr>
<tr>
<td>3.</td>
<td>Sensory handicaps leads to learning difficulties in students</td>
<td>3.72</td>
<td>M</td>
</tr>
<tr>
<td>4.</td>
<td>Learning problems due to visual, hearing or motor handicaps and specific learning difficulties of students are not one and the same.</td>
<td>3.87</td>
<td>M</td>
</tr>
<tr>
<td>5.</td>
<td>Learning difficulties in students are not concerned exclusively with social and emotional factors but also with mental deficiency.</td>
<td>3.91</td>
<td>M</td>
</tr>
<tr>
<td>6.</td>
<td>Students with learning difficulties are pessimistic with regard to future success.</td>
<td>3.47</td>
<td>M</td>
</tr>
<tr>
<td>7.</td>
<td>There are no specified causes for learning difficulties</td>
<td>2.97</td>
<td>L</td>
</tr>
<tr>
<td>8.</td>
<td>Due to hyperactivity, brain injury, perceptual disorders, minimal brain dysfunction and neurological impairments students experience learning difficulties</td>
<td>3.90</td>
<td>M</td>
</tr>
</tbody>
</table>
9. Faulty writing and reading habits at the early stage lead to writing and reading difficulties

10. Inappropriate instructions of teachers lead to specific learning difficulties in students.

11. The discrepancy between the academic achievement and intellectual ability is due to the learning difficulties experienced by the students.

12. Learning difficulty is not a problem but it is just not trying of a student in his studies.

13. Students with learning difficulties are more influenced by external stimuli than internal stimuli.

14. Learning difficulties in students do not lead to any special abilities

II. Characteristics of Students with learning difficulties

15. Learning difficulties in students lower their self esteem and self confidence leading to inferiority complex.

16. Effects of emotional disturbance and environmental disadvantages may have positive influence on learning difficulties of students.

17. Students with learning difficulties often shift from one incomplete action to another and they are not attentive
18. Students with learning difficulties are inactive, passive and slow learners. 3.60 M
19. Distractibility and short attention span are the signs of students with learning difficulties. 3.86 M
20. LD students exhibit serious difficulties in social adjustments. 3.22 M
21. Inability to follow simple, oral directions special relationship and difficulty in understanding classroom discussion attribute to learning difficulties in students. 3.84 M
22. Short/Long term memory problems are the symptoms of students with learning difficulties. 3.81 M
23. All the students with learning difficulties are capable to formulate sentences and do not have any confusion in relationship and tenses. 2.99 L
24. Lack of phonological awareness leads to difficulties in verbal communication. 3.64 M
25. Circumlocutory expression of ideas is one of the symptoms of students with learning difficulties. 3.46 M
26. Failure to construct meaningful words from phonics is characterized by students with learning difficulties. 3.56 M
27. Students with arithmetic difficulties possess problems in understanding reversibility of functions, directions and patterns. 3.68 M
28. Students with conceptual organisational problems may experience difficulties in writing chemical formulae and drawing biological diagrams.

III. Causes of Learning Difficulties

29. Social and economic status of the family may have powerful effect on students with learning difficulties.

30. Home environment does not influence learning difficulties in students.

31. Nutritional deficiency leads to learning difficulties in students.

32. The students with learning difficulties may exhibit hypoactive or hyperactive behaviours.

33. Heredity runs in families with severe reading difficulties.

34. Immature motor development and visual defects are the factors causing difficulty in handwriting and drawing diagrams.

35. Effective teaching of reading at early years leads to overcoming reading difficulties in students.

36. Poor teaching environment in schools leads to specific learning difficulties in students.

37. Auditory discrimination ability helps students to overcome learning difficulties.
38. Lack of phonemic awareness, phonic skills of language teachers causes reading difficulty and inadequate communication skills in students.

3.76 M

IV. Instructional Strategies for Students with Learning Difficulties

39. Repeated teaching of misspelled words, practicing the use of spelling dictionary and computerized spell check may reduce the difficulty in writing.

4.26 H

40. Comprehension in language can be improved by motivating the students to read stories

4.22 H

41. Structural programme approach and self monitoring techniques have effective influence on hyperactive students.

3.98 M

42. Learning strategies curriculum helps students to overcome the problem of word identification, reading comprehension and handwriting.

3.98 M

43. Reciprocal teaching facilitates reading comprehension in students with learning difficulties.

3.81 M

44. For arts subject like history, political science etc students with reading difficulties may be guided to read aloud and paraphrase the subject content.

3.94 M

45. All the students with learning difficulties cannot be taught effectively by the same method.

4.04 M
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>46.</td>
<td>Systematic exercises focusing on the development of neuropsychological skills facilitate to overcome the writing and drawing difficulties in students.</td>
<td>3.89</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>47.</td>
<td>Practising peer tutoring, group learning and multi sensory approach leads to confidence building and overcome learning difficulties in students.</td>
<td>4.07</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>48.</td>
<td>Self instructional training and behaviour modification techniques are helpful in overcoming learning difficulties in students.</td>
<td>3.99</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>49.</td>
<td>Problem solving training increases social competency, reduce behavioural and inattention problems in students with learning difficulties</td>
<td>3.88</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>50.</td>
<td>Close rapport between the school and home is essential for identification of learning difficulties in students.</td>
<td>4.19</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>51.</td>
<td>Free access to resource persons, resource centres equipped with teaching aids will facilitate in reducing specific learning problems in students.</td>
<td>4.07</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>52.</td>
<td>LD students require individual attention from the teachers to overcome their difficulties</td>
<td>4.29</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>53.</td>
<td>Students with learning difficulties can learn materials equally with other students if proper instructional strategies are adopted.</td>
<td>3.81</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>54.</td>
<td>Efficient use of multisensory approach leads to reduction in learning difficulties in students.</td>
<td>3.93</td>
<td>M</td>
<td></td>
</tr>
</tbody>
</table>
V. Guidance and Counselling

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>55.</td>
<td>Through proper guidance and counselling, teachers can promote self confidence in students with learning difficulties.</td>
<td>4.52</td>
<td>H</td>
</tr>
<tr>
<td>56.</td>
<td>Developing a good rapport with students with learning difficulties is essential to avoid/break emotional barriers.</td>
<td>4.32</td>
<td>H</td>
</tr>
<tr>
<td>57.</td>
<td>The students’ negative attitudes towards their peers with learning difficulties can be bypassed through peer group guidance and counselling.</td>
<td>4.08</td>
<td>M</td>
</tr>
<tr>
<td>58.</td>
<td>Parent counselling related to dietary aspects facilitates to overcome learning difficulties in students.</td>
<td>3.88</td>
<td>M</td>
</tr>
<tr>
<td>59.</td>
<td>Parents counselling helps them to understand the different aspects of difficulties faced by the students with learning difficulties.</td>
<td>4.18</td>
<td>H</td>
</tr>
<tr>
<td>60.</td>
<td>Parental involvement in planning, development and organization of educational programmes for students with learning difficulties leads to better understanding of their students ability.</td>
<td>4.13</td>
<td>M</td>
</tr>
<tr>
<td>61.</td>
<td>PTA meetings, discussions and group work may not help the teachers to overcome learning difficulties in students.</td>
<td>2.88</td>
<td>L</td>
</tr>
<tr>
<td>62.</td>
<td>Community counselling leads for development of positive attitude towards students with disabilities.</td>
<td>3.63</td>
<td>M</td>
</tr>
</tbody>
</table>
63. Parental guidance facilitates to monitor and overcome learning difficulties in students at home as well as the school situations. 4.02 H

64. The severe LD students can be helped by directing their parents to take the students to the specialists (Audiologist, Psychologist and Occupational therapist). 3.97 M

<table>
<thead>
<tr>
<th>Level of Attitude</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Values from 3.42 and below</td>
</tr>
<tr>
<td>Moderate</td>
<td>Values between 3.43 and 4.13</td>
</tr>
<tr>
<td>High</td>
<td>Values from 4.14 and above</td>
</tr>
</tbody>
</table>

Table-5 contains five sections, each section dealing with a particular aspect of learning difficulties i.e. concept of learning difficulties, characteristics of students with learning difficulties, causes of learning difficulties, instructional strategies for students with learning difficulties and guidance and counselling for LD students and their parents.

One’s own awareness and attitude towards a particular phenomenon mould the human behaviour. Likewise, teacher’s attitude towards learning difficulties is very vital for the teaching and learning of LD students. Attitude is the key factor for development and implementation of any educational programme. This is more true so with regard to the programmes for LD students. The success of the programmes for the LD students depends, to a large extent, on the attitude of teachers working in those schools.
Under the aspect, \textit{concept of learning difficulty} there are fourteen items. The higher secondary teachers have a positive attitude towards one item (S.No. 1) related to the concept of learning difficulties. The attitude of the higher secondary teachers is just moderate with regard to the items S.No. 3 to 6 and 8 to 13. Their attitude towards three items related to the concept of learning difficulties (S.No. 2, 7 and 14) is very low. Positive attitude is very essential for better performance. Hence orientation programme or in-service training should be provided to the higher secondary teachers so that desirable positive attitude can be developed in teachers. Once their low or negative attitude is nullified and positive attitude is developed, they will be able to tackle learning difficulties in students more effectively.

With regard to the next aspect i.e. \textit{the characteristics of students with learning difficulties}, their responses indicate that their attitude towards LD students is just moderate. They have just exhibited moderate attitude towards twelve items (S.No. 15 to 22, 24 to 28) related to the characteristics of students with learning difficulties. Their attitude is very low or negative towards only one item in this section. They have not shown positive attitude towards only one item (S.No. 23) under this dimension. It indicates that there is a greater need to develop positive attitude in the higher secondary teachers so that they will evince an empathetic attitude towards LD students and devise their instruction so as to reach out to the LD students. Without a positive attitude on the part of the teachers, any amount of instruction imparted by them cannot be much effective.

As for the aspect of \textit{causes of learning difficulties}, the higher secondary teachers have evinced a favourable attitude towards one of
the ten items (S.No.10) and moderate attitude towards seven items (S.No. 29 to 32, 34, 36 to 38) related to the causes of learning difficulties and they have shown a very low attitude towards the remaining items under this dimension. (S.No. 30,33). It envisages that positive attitude should be developed in students so that they can understand the various causes of learning difficulties which will lead to better teaching of students with learning difficulties.

As for the next item i.e. *instructional strategies for students with learning difficulties*, out of the sixteen items included under this dimension, the higher secondary school teachers have evinced a positive or high level attitude towards four items related to the instructional strategies (S.No. 39,40,50,52). Their positive attitudes are related to motivational technique, learning strategies, close rapport, and individual attention. The teachers have shown just moderate attitude towards twelve items under this dimension (S.No. 41 to 49, 51, 53, 54). Their attitude is just moderate towards repeated teaching, reciprocal teaching, reading aloud and paraphrase, systematic exercises, peer tutoring, group learning, self instructional training, problem solving training and free access to resource persons. They have not manifested very low attitude towards any item related to the instructional strategies. To be more clear, their attitude is either favourable or moderate as far as the instructional strategies are concerned.

With regard to the aspect of *guidance and counselling*, the higher secondary teachers have exhibited a very high positive attitude towards four items (S.No. 55,56,59,63) related to guidance and counselling. To be more specific, the teachers have shown positive
attitude towards promoting self-confidence through counselling, developing a good rapport, peer group guidance, and parental guidance. They have manifested moderate attitude towards five items (S.No. 57,58,60,62 and 64) related to guidance and counselling. Their attitude is moderate towards parents guidance related to dietary aspects, parental involvement in planning, community counselling and referral to specialists. They have negative attitude towards only one item in this dimension (S.No.61).

The overall analysis of table-5 leads to the following conclusions. The higher secondary teachers evince moderate attitude towards most of the items under the aspects / dimensions i.e. concept of learning difficulties, characteristics of LD students and causes of learning difficulties. This may be ascribed to their inadequate orientation or exposure with regard to special education / inclusive education and the special needs students.

As for the other two aspects, instructional strategies and guidance and counselling, they have exhibited a better attitude towards most of the items related to those aspects. Their attitude is positive with regard to motivational technique, learning strategies structural programmes, close rapport and individual attention. They have shown just moderate attitude towards repeated teaching, reciprocal teaching self instructional training and problem solving training. Their attitude is very low towards using the same method for all the students and application of multisensory approach. As for guidance and counselling, they have shown either high attitude or moderate attitude. Their attitude is positive towards promoting self-confidence, developing good rapport, peer group guidance and parental guidance. Their attitude is moderate towards parental involvement in planning, community counselling and referral to specialists.
PART–II: Differential Analysis

4.2. Differential Analysis on the Awareness and Attitude of Higher Secondary Teachers in dealing with Learning Difficulties in Students

In order to study the significant difference between two or more than two groups of samples, differential studies are made. In this part, as a first step to know the significant difference between different levels of higher secondary teachers’ awareness and attitude towards students with learning difficulties, mean and SD were calculated for awareness and attitude scores separately. Based on these means and SDs, t-values were worked out to know the significant difference between different categories of teachers due to variation in each variable such as gender, age, type of school, nature of the school, experience of the teacher, qualification, subject of the teacher, location of the school etc. Wherever two groups are involved in a variable, t-test is applied and for more than two groups f-test is used to assess the significant difference between / among the groups.

4.2.1. Effect of ‘Gender’ on the Awareness of Higher Secondary Teachers about the Different Aspects of Students with Learning Difficulties in Students

Mean and SD of the awareness scores of men and women higher secondary teachers on various aspects of learning difficulties and the calculated t-values are presented in table-6.
Table – 6, indicates that, obtained t-values are not significant at 0.05 level with regard to the teachers’ awareness about the concept of learning difficulties (0.67), characteristics of students with learning difficulties (1.86), causes of learning difficulties (1.05), Instructional strategies for students with learning difficulties (0.93), guidance and counselling (1.19) and awareness as a whole (1.50). It means, men and women teachers do not differ significantly in their awareness of learning difficulties. Hence, the formulated hypothesis ‘there exists significant difference in the awareness of higher secondary teachers’ about the different aspects of learning difficulties in students due to variation in their gender’ is rejected.

From the above analysis, it is concluded that the variable gender has not brought any significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties in students. This finding support the findings of Sarojini (2000) and Dharmaraj (2000) who have established that gender has not caused any significant difference in the awareness of teachers.

4.2.2. Effect of ‘Age’ on the Awareness of Higher Secondary Teachers about various Aspects of Learning Difficulties

The calculated F-values based on the mean and SD of the awareness scores of higher secondary teachers and the calculated t-values with regard to various aspects learning difficulties in students based on the age of teachers are presented in table-7.
The table–7 clearly indicates that the obtained F-values for all the aspects, i.e. concept of learning difficulties (1.12), characteristics of students with learning difficulties (1.31), causes of learning difficulties (1.86), instructional strategies for students with learning difficulties (0.91), guidance and counselling (0.54) and awareness as a whole (1.22) are not significant at 0.05 level. This indicates that the higher secondary teachers do not differ from one another in their awareness about learning difficulties in students due to variation in their age. Despite belonging to different age groups, they evince the same level of awareness. Hence the formulated hypothesis, ‘there exists significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties in students due to variation in their age’ is rejected.

The above analysis leads to the conclusion that the variable age has not significantly influenced the awareness of higher secondary teachers about the different aspects of learning difficulties in students. Even though they belong to different age groups, they evince same level of awareness about learning difficulties in students. It is in agreement with the findings of Selvakani (2000), and Beth (1997) who have substantiated that age has not caused significant difference in the awareness of teachers about learning difficulties.

4.2.3. Effect of ‘Educational Qualification’ on the Awareness of Higher Secondary School Teachers about different Aspects of Learning Difficulties in Students

Mean, SD of the awareness scores of higher secondary teachers with varied educational qualifications background on different aspects of learning difficulties and the calculated F-values are presented in table–8.
From the table-8, it is noted that, the calculated F–values are not significant at 0.05 level with regard to teachers’ awareness about the concept of learning difficulties (1.57), characteristics of students with learning difficulties (0.75), causes of learning difficulties (0.36), instructional strategies for students with learning difficulties (0.56), guidance and counselling (0.06) and awareness as a whole (0.14). It shows that the higher secondary teachers do not differ from one another significantly in their awareness about learning difficulties due to variation in their educational qualification. They are very much alike in their level of awareness about learning difficulties in students despite the difference in their educational qualification. Hence the formulated hypothesis \textit{there exists significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties in students due to variation in their educational qualification} is rejected.

The above analysis gives the conclusion that the variable educational qualification has not brought any significant difference in the awareness of higher secondary teachers about different aspects of learning difficulties in students. It is in tune with the findings of Sarojini (2000) and Dharmaraj (2000).

\textbf{4.2.4. Effect of ‘Training in Special Education’ on the Awareness of Higher Secondary School Teachers about the different Aspects of Learning Difficulties in Students}

In table–9, the mean and the SD of the awareness scores of higher secondary teachers on various aspects of learning difficulties in students based on the nature of training they received in special education are furnished.
Table–9 reveals that the F–values obtained are not significant at 0.05 level with regard to awareness of teachers about the concept of learning difficulties (1.46), characteristics of students with learning difficulties (1.61), causes of learning difficulties (2.56), instructional strategies for students with learning difficulties (2.20), guidance and counselling (0.71) and awareness as a whole (1.65). It reveals that the training in special education does not make the higher secondary teachers differ significantly in their awareness of learning difficulties. Therefore, the formulated hypothesis *there exists significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties in students due to variation in their training in special education*, is rejected.

From the above, it is concluded that variation in special education training the teachers received has not brought any significant difference in the awareness of higher secondary teachers about different aspects of learning difficulties in students. This result supports the findings of Selvakani (2000) Lombard et al., (1998) and Schum and Vaughn (1992).

4.2.5. Effect of ‘Years of Experience’ on the Awareness of Higher Secondary School Teachers about the different Aspects of Learning Difficulties

Table – 10 depicts the mean and SD of the awareness scores of higher secondary teachers on various aspects of learning difficulties in students based on their years of experience.
A glance at table-10 shows that the F-values obtained with regard to the aspects such as concept of learning difficulties, (2.69) characteristics of students with learning difficulties (2.88), causes of learning difficulties (3.42) and awareness as a whole (3.35) are significant at 0.05 level. The f-values obtained in respect of instructional strategies (1.75) and guidance and counselling (1.76) are not significant at 0.05 level. It indicates that the variable i.e years of experience has its own influence on the awareness of higher secondary school teachers in the aspects such as concept of learning difficulties, characteristics of LD students and causes of learning difficulties in children.

On the other hand, it has not shown any significant difference in the awareness of teachers about instructional strategies and guidance and counselling. It establishes that the higher secondary school teachers have same level of awareness about the instructional strategies and guidance and counselling inspite of the marked difference in their years of experience. Hence, the formulated hypothesis there exists significant difference in the awareness of the higher secondary teachers about different aspects of students with learning difficulties in students due to variation in their years of experience’ is accepted with regard to aspects such as concept of learning difficulties, characteristics of LD students and causes of learning difficulties and the same hypothesis is rejected with regard to instructional strategies and guidance and counselling.

From the above it can be concluded that the variations in years of experience has significant bearing on the awareness of higher secondary teachers about various aspects of learning difficulties.
The obtained results show that there is significant difference in the awareness of higher secondary school teachers in the aspects such as concept, characteristics and causes of learning difficulties. But it does not specify between which two groups this significant difference lies. So to pinpoint between which two groups there lies significant difference, t-test has been applied further and the obtained results are shown in tables 10A to 10D.

**Table – 10A:** Mean and SD of the awareness scores of higher secondary school teachers on the concept of learning difficulties due to variation in *their years of experience*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5 years (G1)</td>
<td>97</td>
<td>32.49</td>
<td>4.91</td>
<td>G1 vs G2 = 1.37@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G1 vs G3 = 1.77@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G1 vs G4 = 1.31@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G1 vs G5 = 0.19@</td>
</tr>
<tr>
<td>6 – 10 years (G2)</td>
<td>70</td>
<td>33.44</td>
<td>4.00</td>
<td>G2 vs G3 = 0.37@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G2 vs G4 = 2.83*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G2 vs G5 = 1.42@</td>
</tr>
<tr>
<td>11 – 15 years (G3)</td>
<td>51</td>
<td>33.69</td>
<td>3.25</td>
<td>G3 vs G4 = 3.30**</td>
</tr>
<tr>
<td>16 – 20 years (G4)</td>
<td>76</td>
<td>31.64</td>
<td>3.64</td>
<td>G3 vs G5 = 1.90@</td>
</tr>
<tr>
<td>21 &amp; Above years (G5)</td>
<td>136</td>
<td>32.61</td>
<td>3.92</td>
<td>G4 vs G5 = 1.80@</td>
</tr>
</tbody>
</table>

**Note:**

* Significant 0.05 level  
** Significant at 0.01 level.
@ Not Significant at 0.05 level.

From table - 10A, it can be seen that significant difference exists between the teachers with 6 to 10 years of experience (G2) and the teachers with 16 to 20 years of experience (G4). Teachers with 6 to 10 years of experience have better awareness about the concept of learning difficulties. Similarly, there is significant difference between the teachers with 11 to 15 years of experience (G3) and the teacher with 16 to 20 years of experience (G4). It implies that the less is the years of experience, the better is the awareness about LD in students. Recently the concept of LD has been introduced in several universities.
and colleges in India. Perhaps this may be the reason for the teachers with ten years of experience demonstrating better awareness that the teachers with more years of experience. There is no significant difference between any other two groups.

From the above, it is concluded; that less is the teachers’ years of experience, there better is the awareness about the concept of learning difficulties.

**Table-10B:** Mean, SD and the calculated t-values of the awareness scores of higher secondary teachers on the aspect characteristics of students with learning difficulties due to variation in *their years of experience* and to calculated *t*-values

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
</table>
| 1 – 5 years (G₁)       | 97 | 32.92| 4.96| G₁ Vs G₂ = 1.43@  
|                        |    |      |     | G₁ Vs G₃ = 0.09@  
|                        |    |      |     | G₁ Vs G₄ = 2.09*  
|                        |    |      |     | G₁ Vs G₅ = 0.43@  
| 6 – 10 years (G₂)      | 70 | 32.96| 4.40| G₂ Vs G₃ = 1.27@  
|                        |    |      |     | G₂ Vs G₄ = 3.39** 
| 11 – 15 years (G₃)     | 51 | 32.84| 5.00| G₃ Vs G₄ = 1.90@  
| 16 – 20 years (G₄)     | 76 | 31.31| 5.03| G₃ Vs G₅ = 0.25@  
| 21 & Above years (G₅)  | 136| 32.64| 4.59| G₄ Vs G₅ = 1.90@  

**Note:**  
* Significant at 0.05 level.  
** Significant at 0.01 level.  
@ Not Significant at 0.05 level.

From table-10B, it is evident that there is significant difference between the teachers with 1 to 5 years of experience and the teachers with 16 to 20 years of experience (2.01) and between the teachers with 6 to 10 years of experience and the teachers with 16 to 20 years of experience (3.39). Similarly, there exists significant difference between the teachers with 6 to 10 years of experience and the teachers with more than 21 years of experience. It means, less is the years of
experience, the better is the awareness of H.S.S teachers about the characteristics of LD students. There is no significant difference between rest of the groups awareness about the characteristics of LD students.

From the above, it is concluded that the less is the experience of the teachers, the more will be the awareness of teachers.

**Table-10C:** Mean, SD and the calculated t-values of the awareness scores of higher secondary teachers on the aspect of ‘causes of learning difficulties’ due to variation in teachers experience and the calculated t-values

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5 years (G1)</td>
<td>97</td>
<td>22.70</td>
<td>2.76</td>
<td>G1 vs G2 = 0.45@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G1 vs G3 = 0.51@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G1 vs G4 = 3.12**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G1 vs G5 = 1.23@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G2 vs G3 = 0.79@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G2 vs G4 = 2.14*</td>
</tr>
<tr>
<td>6 – 10 years (G2)</td>
<td>70</td>
<td>22.46</td>
<td>3.88</td>
<td>G2 vs G5 = 1.69@</td>
</tr>
<tr>
<td>11 – 15 years (G3)</td>
<td>51</td>
<td>22.98</td>
<td>3.37</td>
<td>G3 vs G4 = 2.94*</td>
</tr>
<tr>
<td>16 – 20 years (G4)</td>
<td>76</td>
<td>21.11</td>
<td>3.74</td>
<td>G3 vs G5 = 1.40@</td>
</tr>
<tr>
<td>21 &amp; Above years (G5)</td>
<td>136</td>
<td>22.23</td>
<td>3.06</td>
<td>G4 vs G5 = 2.23*</td>
</tr>
</tbody>
</table>

**Note:**

* Significant at 0.05 level.
** Significant at 0.01 level.
\@ Not Significant at 0.05 level.

From table-10C, it is understood that there exists significant difference between the teachers with 1 to 5 years of experience, the teachers with 6 to 10 years of experience and the teachers with 16 to 20 years of experience. Similarly, there is significant difference between the teachers with 11 to 15 years of experience and the teachers with 16 to 20 years of experience. This result clearly indicated that the teachers with more years of experience have not shown better awareness about the cause of LD in students. This can be ascribed to their lack of exposure to the concept of LD in the
training programmes. This envisages the need for orientation or in-service programme on LD’s for the teachers with more years of experience. There is no significant difference between any other two groups.

The above analysis gives the conclusion that the teachers with 1 to 5 years of experience and the teacher with 6 to 10 years of experience have better awareness about the causes of learning difficulties than the teachers belonging to any other category. This better awareness can be attributed to the coverage of learning difficulties in their teacher training courses and their interaction and observation in the classroom environment.

**Table-10D:** Mean, SD and the calculated t-values of the awareness scores of higher secondary teachers on LD aspects as a whole due to variation in their years of experience.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5 years (G₁)</td>
<td>97</td>
<td>152.97</td>
<td>15.73</td>
<td>G₁ vs G₂ = 1.15&lt;br&gt;G₁ vs G₃ = 1.28&lt;br&gt;G₁ vs G₄ = 2.19*&lt;br&gt;G₁ vs G₅ = 0.34@&lt;br&gt;G₂ vs G₃ = 3.12**&lt;br&gt;G₁ vs G₅ = 2.00*</td>
</tr>
<tr>
<td>6 – 10 years (G₂)</td>
<td>70</td>
<td>155.76</td>
<td>15.18</td>
<td>G₁ vs G₄ = 2.19*&lt;br&gt;G₁ vs G₅ = 0.34@&lt;br&gt;G₂ vs G₄ = 3.14**&lt;br&gt;G₂ vs G₅ = 1.54@&lt;br&gt;G₃ vs G₁ = 3.12**&lt;br&gt;G₃ vs G₅ = 1.63@&lt;br&gt;G₁ vs G₅ = 2.00*</td>
</tr>
<tr>
<td>11 – 15 years (G₃)</td>
<td>51</td>
<td>156.33</td>
<td>14.98</td>
<td>G₂ vs G₃ = 0.21@&lt;br&gt;G₃ vs G₅ = 1.63@&lt;br&gt;G₁ vs G₅ = 2.00*</td>
</tr>
<tr>
<td>16 – 20 years (G₄)</td>
<td>76</td>
<td>147.59</td>
<td>16.24</td>
<td>G₂ vs G₅ = 1.54@&lt;br&gt;G₃ vs G₁ = 3.12**&lt;br&gt;G₃ vs G₅ = 1.63@&lt;br&gt;G₁ vs G₅ = 2.00*</td>
</tr>
<tr>
<td>21 &amp; Above years (G₅)</td>
<td>136</td>
<td>152.24</td>
<td>16.23</td>
<td>G₃ vs G₅ = 1.63@&lt;br&gt;G₁ vs G₅ = 2.00*</td>
</tr>
</tbody>
</table>

**Note:**

* Significant at 0.05 level.
** Significant at 0.01 level.
@ Not Significant at 0.05 level.

From table-10D, it can be seen that there is significant difference between the first three categories of teachers and the last category of teachers. The first three categories of teachers have better awareness...
about the different aspects of learning difficulties than the teachers belonging to the remaining two categories. There is no significant difference between any two of the first three categories, especially between group-2 and group-3.

This table shows the trend that the teachers with 1 to 5, 6 to 10, and 11 to 15 years of experience have better awareness about the different aspects of learning difficulties than the experienced teachers with 16 to 20 years and more than 20 years of experience. This table vouchsafes the significance of the inclusion of learning difficulties in the teacher training programmes. Since the young teachers with less years of experience had studied about learning difficulties in their teacher training syllabus they have evinced a higher level of awareness than their senior teachers. Thus this table testifies to the better awareness of the teachers with less experience than their counterparts with more years of experience. The results of the present study (10A to 10D) are in agreement with the findings of Sarojini (2000), Guido (1990) and Prainer (2003). Who have stressed the importance and established the impact of including the concept of learning difficulties in the teacher education syllabus as well as in the teacher training programmes.

4.2.6. Effect of ‘Location of School’ on the Awareness of Higher Secondary Teachers about the different Aspects of Learning Difficulties in Students

In table – 11, the t-values, based on the mean and SD of the awareness scores of rural and urban higher secondary school teachers on various aspects of learning difficulties based on the variation in the location of the schools are presented.
From table -11, it is seen that the t-values obtained in respect of the aspects such as; concept of learning difficulties (0.53), characteristics of students with learning difficulties (1.86), instructional strategies for students with learning difficulties(1.72), guidance and counselling (0.53) and awareness as a whole (1.75) are not significant at 0.05 level. On the other hand, the t-value (2.02) obtained in respect of the aspect causes of learning difficulties in students are significant at 0.05 level. It is evident that the teachers working in rural and urban areas differ significantly only in their awareness about the causes of learning difficulties. In other aspects, they do not differ at all. Hence, the formulated hypothesis ‘there exists significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties in students due to variation in the location of school’ is accepted with regard to causes of learning difficulties only. The mean values also reveal that the urban school teachers possess better awareness (22.46) than the rural school teachers (21.68).

From the above, it can be concluded that, the variable location of school has significant influence on the awareness of teachers about the causes of learning difficulties. The teachers working in urban area have better awareness than their counterparts working in rural area. On the other hand, the variable location of the school has no significant influence on teachers’ awareness about the other aspects of learning difficulties. This result is in tune with the findings of Dharmaraj (2000) Susan Stainback and William Stainback (1982).

4.2.7. Effect of ‘Nature of the School’ on the Awareness of Higher Secondary Teachers About the different Aspects of Students with Learning Difficulties in Students

In table – 12, the F-values, based on the mean and SD of the awareness scores of government, government aided and private higher secondary teachers on various aspects of learning difficulties are presented.
From table 12, it can be observed that the obtained F-values with respect to the concept of learning difficulties (0.85), instructional strategies for students with learning difficulties (1.40) and guidance and counselling (0.57) are not significant at 0.05 level. It implies that the awareness of higher secondary teachers does not differ significantly in the above mentioned aspects. On the other hand, the F-values obtained for the aspects - characteristics of students with learning difficulties (3.13) and the causes of learning difficulties (4.49) are significant at 0.05 level. It reveals that there is marked difference in the awareness of higher secondary teachers about the characteristics and causes of learning difficulties in children. Hence, the formulated hypothesis that there exists significant difference in the awareness of higher secondary teachers about different aspects of learning difficulties in student due to variation in the nature of the school the teachers are working in is accepted with regard to the aspects characteristics of students with learning difficulties and causes of learning difficulties only.

The above analysis gives the conclusion that there is no significant difference among the teachers working in government schools, aided schools and private schools in their awareness about the concept of learning difficulties, instructional strategies for students with learning difficulties and guidance and counselling. Whereas, there is significant difference in their awareness about the characteristics of students with learning difficulties and causes of learning difficulties the teachers working in private schools have better awareness than the teachers working in government schools and aided schools. It supports the findings of Kusuma Harinath (2001), Selvakani (2000) and Bowers et al. (1998).

The F-values (3.13 and 4.49) indicate that there is significant difference in the awareness of teachers of different schools. But the F-values do not specify between which two groups these significant difference lies. So to find out between which two group there is
significant difference, t-values have been calculated and are presented in the following tables-12A and 12B.

**Table-12A:** Mean and SD of the awareness scores of higher secondary teachers on the characteristics of students with learning difficulties due to variation in nature of schools and the calculated t-values.

<table>
<thead>
<tr>
<th>Nature of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. Schools (G₁)</td>
<td>245</td>
<td>32.28</td>
<td>4.76</td>
<td>G₁ vs G₂ = 1.03@</td>
</tr>
<tr>
<td>Govt. Aided Schools (G₂)</td>
<td>11</td>
<td>31.45</td>
<td>2.46</td>
<td>G₁ vs G₃ = 2.31*</td>
</tr>
<tr>
<td>Private Schools(G₃)</td>
<td>174</td>
<td>33.39</td>
<td>4.93</td>
<td>G₂ vs G₃ = 2.33*</td>
</tr>
</tbody>
</table>

**NOTE:**

* Significant at 0.05 level.
@ Not Significant at 0.05 level.

From table 12A, it is clear that there is significant difference between Govt. school teachers and the private school teachers in their awareness about learning difficulties. Similarly, there exists significant difference between the teachers of aided schools and the teachers of private schools in their awareness about learning difficulties in students.

The above analysis gives the conclusion that the private school teachers have better awareness about the characteristics of students with learning difficulties than the teachers belonging to the government schools and the aided schools. The teachers belonging to the aided schools stand last in their awareness about the characteristics of students with learning difficulties.

**Table-12B:** Mean, SD and calculated t-values of awareness scores of higher secondary teachers on the causes of learning difficulties due to variation in the nature of schools they are working in.
<table>
<thead>
<tr>
<th>Nature of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. Schools (G1)</td>
<td>245</td>
<td>21.93</td>
<td>3.27</td>
<td>$G_1 \text{ vs } G_2 = 0.48^@$</td>
</tr>
<tr>
<td>Govt. Aided Schools (G2)</td>
<td>11</td>
<td>20.91</td>
<td>6.99</td>
<td>$G_1 \text{ vs } G_3 = 2.82^{**}$</td>
</tr>
<tr>
<td>Private Schools (G3)</td>
<td>174</td>
<td>22.81</td>
<td>3.03</td>
<td>$G_2 \text{ vs } G_3 = 0.90^@$</td>
</tr>
</tbody>
</table>

**Note:**
- * Significant at 0.05 level.
- ** Significant at 0.01 level.
- @ Not Significant at 0.05 level.

From table 12B, it is seen that the obtained t-values indicate that there is no significant difference between government school teachers and the aided school teachers (0.48) and between the govt. school teachers and the private school teachers (0.90). The other t-value 2.82 shows that there is significant difference between the government school teachers and the private school teachers regarding their awareness about the causes of learning difficulties.

From the above analysis, it can be concluded that the private school teachers have better awareness about the aspect of causes of learning difficulties than the teachers belonging to the government schools and the aided schools.

**4.2.8. Effect of ‘Subject of Teaching’ on the Awareness of Higher Secondary School Teachers about various Aspects of Learning Difficulties.**

Mean, SD and the calculated F-values of the awareness scores of higher secondary teachers on various aspects of learning difficulties based on the subjects the teachers teach are presented in table-13.
The calculated F-values in table–13 clearly reveal that only for the aspect of guidance and counseling, the F-value obtained is significant (2.63) at 0.05 level. As for other aspects, the F-values are not significant at 0.05 level. [Concept of learning difficulties (1.57), characteristics of students with learning difficulties (0.55), causes of learning difficulties (1.01), instructional strategies for students with learning difficulties (0.81) and awareness as a whole (1.39)]. It evinces that the higher secondary teachers, irrespective of the subjects they teach evince same level awareness about all aspects of learning difficulties except the aspect of guidance and counselling. Hence the formulated hypothesis ‘there exists significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties due to variation in their subject of teaching” is accepted in respect of guidance and counselling and is rejected for other aspects.

To conclude, the variable subject of teaching of higher secondary teachers has significantly influenced their awareness only about one aspect, i.e. guidance and counselling. It had no influence with regard to other aspects. It is in agreement with the findings Bearn et al., (1998) and Nagomi Ruth (2000).

The F-value (2.63) obtained in respect of the aspect of guidance and counselling reveals that there is significant difference among the various subject teachers in their awareness about guidance and counselling. But the F-value does not specify between which two groups the significant difference lies. Hence, to know between which two groups there is significant difference, t-values have been calculated and presented in table -13A.
Table-13A: Mean, SD and the F-values of the awareness scores of higher secondary teachers on the aspect of guidance and counselling based on the variation in the subject of teaching

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Language (G₁)</td>
<td>47</td>
<td>25.02</td>
<td>3.54</td>
<td>G₁ vs G₂ = 1.97@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G₁ vs G₃ = 0.49@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G₁ vs G₄ = 2.5*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G₁ vs G₅ = 0.16@</td>
</tr>
<tr>
<td>English (G₂)</td>
<td>36</td>
<td>26.47</td>
<td>3.15</td>
<td>G₂ vs G₃ = 2.05*</td>
</tr>
<tr>
<td>Science (G₃)</td>
<td>244</td>
<td>25.30</td>
<td>3.59</td>
<td>G₂ vs G₄ = 0.26@</td>
</tr>
<tr>
<td>Arts (G₄)</td>
<td>61</td>
<td>26.64</td>
<td>3.06</td>
<td>G₂ vs G₅ = 1.44@</td>
</tr>
<tr>
<td>Commerce (G₅)</td>
<td>42</td>
<td>25.17</td>
<td>4.79</td>
<td>G₃ vs G₄ = 2.95*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G₃ vs G₅ = 0.17@</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G₄ vs G₅ = 1.76@</td>
</tr>
</tbody>
</table>

Note: * Significant at 0.05 level. @ Not Significant at 0.05 level.

From table-13A, it is clear that there is significant difference between the regional language teachers and the arts teachers. Similarly, there is significant difference between the English teachers and the science teachers and between the science teachers and the arts teachers. There exists no significant difference between any other two groups.

From the above, it is concluded that the arts teachers and the English teachers have better awareness about the aspect of guidance and counselling than the other teachers. The better awareness may be attributed to their remedial measures which they undertake in the class frequently and which give them a firsthand knowledge about the students and their learning difficulties.

4.2.9. Effect of ‘Type of School’ on the Awareness of Higher Secondary Teachers about the different Aspects of Students with Learning Difficulties in Students

Table-14 presents the mean, SD and the calculated F-values of the awareness scores of higher secondary teachers on various aspects of learning difficulties based on the type of school they are working in.
From table-14, it can be seen that the obtained F-values in respect of aspects such as concept of learning difficulties (0.63), characteristics of students with learning difficulties (2.15), instructional strategies for students with learning difficulties (0.73), guidance and counselling (0.12) and awareness as a whole are not significant 0.05 level. On the other hand, the F-value (4.26) in respect of the causes of learning difficulties is significant at 0.05 level. It implies that the higher secondary teachers, irrespective of the type of school they are working in, do not differ significantly from one another in their awareness about various aspects of learning difficulties except the aspect causes of learning difficulties. Therefore, the formulated hypothesis ‘there exists significant difference in the awareness of the higher secondary teachers about the different aspects of learning difficulties in students due to variation in the type of school they are working in’ is accepted in respect of the aspect of causes of learning difficulties only and rejected with regard to other aspects.

From the above, it can be concluded that there is no significant difference among the teachers working in different schools such as boys schools, girls schools and coeducational schools in their awareness about the concept of learning difficulties, characteristics of students with learning difficulties, instructional strategies for students with learning difficulties, guidance and counselling. Whereas, there is significant difference in their awareness about the causes of learning difficulties. With reference to this particular aspect, the teachers working in coeducational schools have better awareness about the causes of learning difficulties than the teachers working in girls schools and boys schools. In the awareness about the causes of learning difficulties the girl schools teachers stand next to the teachers of
coeducational schools with the teachers of boys schools trailing behind. It supports the findings of Jeyaprabha (2003) and Sarojini (2000).

The obtained F-value (4.26) in respect of the causes of learning difficulties simply reveals that there is significant difference. But it does not substantiate between which two groups this significant difference lies. So, to know between which two groups there is significant difference, t-test is applied. The obtained result is furnished in table-14A.

Table-14A: Mean and SD of the awareness scores of higher secondary teachers on causes of learning difficulties based on the type of school the teachers working in and the calculated t-values

<table>
<thead>
<tr>
<th>Types Of Schools</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys Schools (G₁)</td>
<td>78</td>
<td>21.60</td>
<td>3.2</td>
<td>G₁ vs G₂ = 0.65@</td>
</tr>
<tr>
<td>Girls Schools (G₂)</td>
<td>134</td>
<td>21.92</td>
<td>3.75</td>
<td>G₁ vs G₃ = 2.66*</td>
</tr>
<tr>
<td>Co-ed Schools (G₃)</td>
<td>218</td>
<td>22.71</td>
<td>3.07</td>
<td>G₂ vs G₃ = 2.06*</td>
</tr>
</tbody>
</table>

Note: * Significant at 0.05 level.
@ Not Significant at 0.05 level.

From table-14A, it is clear that the obtained t-value 0.65 is not significant at 0.05 level, whereas the other two t-values are significant at 0.05 level. It implies that there is no significant difference (0.65)
between the teachers of the boys schools and the girls schools in their awareness about the causes of learning difficulties. On the other hand, there is significant difference between the teachers of boys schools and the teachers of coeducational schools (2.66), and between the teachers of girls schools and the teachers of coeducational schools (2.06) in their awareness about the causes of learning difficulties. This table further reveals that the teachers working in coeducation schools have better awareness than their counterparts working in the other two types of schools.

From the above, it can be concluded that the coeducational school teachers have better awareness about the causes of learning difficulties in students than the teachers working in boys schools and girls schools. In the awareness about the causes of learning difficulties, the girl schools teachers stand next with the teachers of boys schools trailing behind them. This better awareness of teachers in coeducational schools and girls schools can be attributed to the concern and the involvement they evince in the school as well as in classroom environment due to greater expectation from the parents as well as from the management. These expectations account for better concern and higher level of awareness on the part of the teachers working in coeducation schools.

4.3.1. Effect of ‘Gender’ on the Attitude of Higher Secondary Teachers towards various Aspects of Students with Learning Difficulties

In table–15, the t-values based on the mean and SD of the attitude scores of men and women teachers on various aspects of learning difficulties are presented.
Table–15 indicates that the calculated t-values are not significant at 0.05 level with regard to the attitude of teachers towards the concept of learning difficulties (0.11), causes of learning difficulties (0.57), instructional strategies for students with learning difficulties (1.38), guidance and counselling (0.78) and attitude towards LD as a whole (1.32). The t-value is significant at 0.05 level only in respect of characteristics of students with learning difficulties (1.97). It shows that men and women teachers do not differ significantly in their attitude towards various aspects of learning difficulties except in the aspect of characteristics of students with learning difficulties. Hence the formulated hypothesis ‘there is significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due variation in gender’ is rejected with regard to all aspects except for the aspect characteristics of students with learning difficulties.

From the above, it can be concluded that gender has not significantly influenced the attitude of the teachers towards various aspects of learning difficulties. Only with regard to the characteristics of students with learning difficulties there is significant difference between the men teachers and women teachers. Women teachers evince a more favourable attitude towards the characteristics of students with learning difficulties than the men teachers. This can be attributed to the keen observation and the better concern they evince in the classroom environment. It supports the findings of Bearn et al., (1998) and Harris Mary (1998).

4.3.2. Effect of ‘Age’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties

The F-values obtained, based on the mean and SD of the attitude scores of higher secondary teachers on various aspects of learning difficulties in students and aspects as a whole due to variation in age are presented in table–16.
Table–16 reveals that the F-values with respect to the concept of learning difficulties (0.46), characteristics of students with learning difficulties (1.46), causes of learning difficulties (0.56), instructional strategies for students with learning difficulties (0.46), guidance and counselling (0.88) and attitude as a whole (1.14) are not significant at 0.05 level. It means, there is no significant difference in the attitude scores of the teachers belonging to different age groups. This indicates that the independent variable ‘age’ has not exercised any influence on the attitude of the teachers towards various aspects of learning difficulties. Despite belonging to different age groups, they have exhibited the same level of attitude. Hence, the formulated hypothesis ‘there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in age’ is rejected.

From the above analysis, it can be concluded that the independent variable age has not significantly influenced the attitude of higher secondary teachers towards the various aspects of learning difficulties in students. Despite the difference in the age groups, the teachers belonging to the different age groups have evinced same level of attitude.

4.3.3. Effect of ‘Educational Qualification’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties in Students

The F-values calculated based on the mean and SD of the attitude scores of higher secondary teachers on various aspects of learning difficulties are presented in table-17.
From table-17, it is noted that the F-values are not significant for the aspects such as; the concept of learning difficulties (1.36), characteristics of students with learning difficulties (0.99), causes of learning difficulties (2.20), instructional strategies for students with learning difficulties (0.87), guidance and counselling (0.51) and attitude as a whole (1.12) at 0.05 level. It shows that the higher secondary teachers possessing different educational qualifications do not differ significantly in their attitude towards learning difficulties in students. Hence the formulated hypothesis ‘there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in educational qualification’ is rejected.

It can, therefore, be concluded that educational qualification does not cause significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties. Despite the variation in educational qualification, they all evince similar attitude towards different aspects of learning difficulties. It is in agreement with the findings of Jena (2000) and Sarojini (2000) who have also arrived at similar findings in their studies.

### 4.3.4. Effect of ‘Training in special education’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties in Students

In table–18, the mean, SD and the F-values of attitude scores of higher secondary teachers on various aspects of learning difficulties in students based on the variation in the independent variable i.e. training in special education are furnished.
Table–18 reveals that, the F-values obtained are not significant at 0.05 level with regard to the concept of learning difficulties (0.68), characteristics of students with learning difficulties (0.42), causes of learning difficulties (0.58), instructional strategies for students with learning difficulties (2.29), guidance and counselling (1.48) and attitude as a whole (0.63). It discloses that the training in special education of higher secondary teachers does not have any impact on the attitude of teachers towards different aspects of learning difficulties. Therefore, the formulated hypothesis, ‘there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in training in special education’ is rejected.

The above analysis leads to the conclusion that training in special education causes no significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties. Despite the difference in the training in special education or inclusive education are in teaching special needs children, they all evince the same level of attitude towards different aspects of learning difficulties. It lends support to the findings of Lombard (1998), Schunn and Vaughn (1992).

4.3.5. Effect of ‘Years of Experience’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties in Students

Mean, SD and the calculated F-values of the attitude scores of higher secondary teachers on various aspects learning difficulties and based on variation in the independent variable i.e. years of experience are presented in table–19.
From table-19, it is clear that the F-values obtained with regard to all the aspects [concept of learning difficulties (0.82), characteristics of students with learning difficulties (1.42), causes of learning difficulties (0.75), instructional strategies for students with learning difficulties (1.37), guidance and counselling (1.11) and attitude as a whole (1.24) are not significant at 0.05 level. It manifests that the higher secondary teachers do not differ significantly from one another in their attitude towards learning difficulties inspite of the significant difference in their years of experience. Therefore, the formulated hypothesis \textit{there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in their years of experience} is rejected.

From the above it can be concluded that the variable \textit{years of experience} has caused no significant difference in the teachers’ attitude towards different aspects of learning difficulties. Despite the variation in their years of experience, they have evinced same attitude towards the different aspects of learning difficulties. The findings of this table coincide with the findings of Guido (1990) and Praisner (2003).

\textbf{4.3.6. Effect of ‘Location of School’ on the Attitude of Higher Secondary Teachers towards Various Aspects of Learning Difficulties in Students}

Mean, SD and the calculated t-values of attitude scores of higher secondary teachers with regard to various aspects of learning difficulties based on the variation in location of the school are presented in Table–20.
Table – 20: Mean, SD and calculated t–values of attitude scores of higher secondary teachers on various aspects of learning difficulties and aspects as a whole based on the variation in the independent variable i.e. location of school

<table>
<thead>
<tr>
<th>Learning Difficulties Attitude aspects</th>
<th>Rural (N = 109)</th>
<th>Urban (N = 321)</th>
<th>Calculated t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D</td>
<td>Mean</td>
</tr>
<tr>
<td>Concept of learning difficulties</td>
<td>50.51</td>
<td>4.61</td>
<td>50.83</td>
</tr>
<tr>
<td>Characteristics of students with learning difficulties</td>
<td>50.16</td>
<td>5.77</td>
<td>51.27</td>
</tr>
<tr>
<td>Causes of learning difficulties</td>
<td>35.78</td>
<td>4.63</td>
<td>36.55</td>
</tr>
<tr>
<td>Instructional strategies for students with learning difficulties</td>
<td>63.20</td>
<td>6.69</td>
<td>64.75</td>
</tr>
<tr>
<td>Guidance and counseling</td>
<td>38.71</td>
<td>6.25</td>
<td>39.67</td>
</tr>
<tr>
<td>Aspects as a whole</td>
<td>238.37</td>
<td>19.05</td>
<td>243.08</td>
</tr>
</tbody>
</table>

Note: * Significant at 0.05 level
      @ Not significant at 0.05 level

From table-20, it can be seen that the t-values obtained in respect of instructional strategies for students with learning difficulties (2.00) and attitude as a whole (2.08) are significant at 0.05 level. It establishes that the urban teachers and the rural teachers differ significantly from each other in their attitude towards instructional strategies for the students with learning difficulties. Hence the formulated hypothesis there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in the location of the school is
accepted with regard to the aspect of instructional strategies for LD students and attitude as a whole. From the mean values it is understood that the teachers working in urban schools have better (64.75) attitude towards the aspect of instructional strategies for students with learning difficulties than the teachers working in rural area (63.20). It is also understood that the attitude as a whole of higher secondary teachers in urban area is (243.08) better than that of the teachers in rural (238.37) area. The t–values obtained with regard to the concept of learning difficulties (0.56), the characteristics of students with learning difficulties (1.68), causes of learning difficulties (1.48) and guidance and counselling (1.47) are not significant at 0.05 level. Hence the formulated hypothesis is rejected with regard to the above mentioned aspects.

From the above, it can be concluded that the variable, location of school has significantly influenced the attitude of teachers with reference to the instructional strategies for students with learning difficulties and attitude as a whole. The teachers working in urban area have better attitude than the teachers working in rural area. On the other hand, the variable location of the school has no significant influence on teachers’ attitude towards the other aspects of learning difficulties. It is in agreement with the findings of Drury (1994), Husuma Harinath (2001) and Harris Mary (1998)

4.3.7. Effect of ‘Nature of School’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties in Students

Mean, SD and the calculated F-values of attitude scores of higher secondary teachers on various aspects of learning difficulties based on the variation in nature of school are presented in table-21.
Table-21: Mean SD and the calculated F-values of attitude scores of higher secondary teachers on various aspects of students with learning difficulties and aspects as a whole based on the variation in the nature of school

<table>
<thead>
<tr>
<th>Learning Difficulties Attitude aspects</th>
<th>Nature of School</th>
<th>Calculated F-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Govt. (N = 245) (G1)</td>
<td>Govt. aided (N = 11) (G2)</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>S.D</td>
</tr>
<tr>
<td>Concept of learning difficulties</td>
<td>50.40</td>
<td>5.00</td>
</tr>
<tr>
<td>Characteristics of students with learning difficulties</td>
<td>49.96</td>
<td>6.03</td>
</tr>
<tr>
<td>Causes of learning difficulties</td>
<td>35.81</td>
<td>4.75</td>
</tr>
<tr>
<td>Instructional strategies for students with learning difficulties</td>
<td>63.91</td>
<td>6.96</td>
</tr>
<tr>
<td>Guidance and counseling</td>
<td>39.20</td>
<td>4.90</td>
</tr>
<tr>
<td>Attitude as a whole</td>
<td>239.28</td>
<td>20.76</td>
</tr>
</tbody>
</table>

** Note:**  ** Significant at 0.01 level  
@ Not Significant at 0.05 level

From table-21, it can be observed that the F-values obtained in respect of aspects such as concept of learning difficulties (1.71), instructional strategies for students with learning difficulties and guidance and counselling (0.57) are not significant at 0.05 level. On the other hand, the F-values obtained in respect of aspects such as characteristics of students with learning difficulties (12.71), causes of
learning difficulties (5.21) and aspects as a whole (5.12) are significant at 0.01 level. Therefore, the formulated hypothesis ‘there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in the nature of schools they are working in’ is accepted with regard to the above aspects and rejected in respect of other aspects.

From the above table it can be concluded that there is significant difference among the higher secondary teachers working in government, aided and private schools in their attitude towards the characteristics of students with learning difficulties, causes of learning difficulties and aspects as a whole whereas there is no significant difference among the higher secondary teachers working in Government, aided and private schools in their attitude towards others aspects of learning difficulties. The teachers working in private schools have better attitude towards students with learning difficulties than the teachers belonging to the Government and aided schools. This can be ascribed to the nature of teachers’ role in the private schools where the management expects optimum output from the teachers. It coincides with the findings of Reiter et al., (1998) and Kusuma Harinath (2001).

The F-values obtained with regard to characteristics of students with learning difficulties, causes of learning difficulties and aspects as a whole (12.71, 5.21 and 5.12) show that there is significant difference among the higher secondary teachers in their attitude towards these aspects of learning difficulties. But they do not specify between which two groups there lies the significant difference. Hence to know between which two groups there lays the significant difference; t-values have been calculated and are presented in table-21A, 21B and 21C.

**Table-21A:** Mean SD and the calculated t-values of the attitude scores of higher secondary teachers on the aspect of
characteristics of students with learning difficulties due to variation in *nature of schools*

<table>
<thead>
<tr>
<th>Nature of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. schools</td>
<td>245</td>
<td>49.96</td>
<td>6.03</td>
<td>*G₁ vs G₂ = 3.04 ***</td>
</tr>
<tr>
<td>Govt. aided schools</td>
<td>11</td>
<td>47.00</td>
<td>2.97</td>
<td>*G₂ vs G₃ = 4.46 ***</td>
</tr>
<tr>
<td>Private schools</td>
<td>174</td>
<td>52.70</td>
<td>6.31</td>
<td>*G₂ vs G₃ = 5.60 ***</td>
</tr>
</tbody>
</table>

**Note**: ** Significant at 0.01 level.

From table-21A, it is evident that the obtained t-values (3.04, 4.46, 5.60) are significant at 0.01 level. It implies that there is significant difference in the attitude of the teachers towards the characteristics of students with learning difficulties. The private school teachers have a better attitude towards the characteristics of students with learning difficulties. The private school teachers are closely followed by the government school teachers with 49.96 mean value and the aided school teachers trail behind with 47.0 mean value. It establishes that the nature of the school plays a prominent role in the attitude of the teachers towards the students with learning difficulties.

**Table-21B**: Mean, SD and the t-values of the attitude scores of higher secondary teachers on the aspect of causes of learning difficulties due to variation in *nature of school*

<table>
<thead>
<tr>
<th>Nature of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. Schools</td>
<td>245</td>
<td>35.81</td>
<td>4.75</td>
<td><em>G₁ vs G₂ = 1.18 @</em></td>
</tr>
<tr>
<td>Govt. Aided Schools</td>
<td>11</td>
<td>34.55</td>
<td>3.42</td>
<td>**G₃ vs G₁ = 2.93 ***</td>
</tr>
<tr>
<td>Private Schools</td>
<td>174</td>
<td>37.24</td>
<td>5.05</td>
<td>*G₃ vs G₂ = 2.45 *</td>
</tr>
</tbody>
</table>

**Note**: * Significant at 0.05 level. ** Significant at 0.01 level.
@ Not Significant at 0.01 level.

From table-21B, it can be understood that the obtained t-value 1.18 is not significant at 0.05 level whereas the other two t-values are significant at 0.01 level. It points out that there is no significant...
difference between the government school teachers and the aided school teachers in their attitude towards the causes of learning difficulties. On the other hand, there is significant difference in the attitude of teachers towards the causes of learning difficulties between the government school teachers and the private schools teachers. Similarly, there is significant difference in the attitude of teachers towards the causes of learning difficulties between the aided school teachers and the private school teachers. The private school teachers have more favourable attitude towards the causes of learning difficulties than the teachers of government schools, and aided schools. This can be attributed to the better concern of the private school teachers and ‘go the easy way attitude’ of the government school teachers.

**Table-21C:** Mean SD and the calculated t-values of the attitude scores of higher secondary teachers on the aspects as a whole due to variation in *nature of the school*

<table>
<thead>
<tr>
<th>Nature of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. schools (G₁)</td>
<td>245</td>
<td>239.28</td>
<td>20.76</td>
<td>G₁ vs G₂ = 0.83@</td>
</tr>
<tr>
<td>Govt. aided schools (G₂)</td>
<td>11</td>
<td>234.36</td>
<td>19.07</td>
<td>G₃ vs G₁ = 2.89*</td>
</tr>
<tr>
<td>Private schools (G₃)</td>
<td>174</td>
<td>246.03</td>
<td>25.39</td>
<td>G₃ vs G₂ = 1.93@</td>
</tr>
</tbody>
</table>

Note:  
* Significant at 0.05 level.
@ Not Significant at 0.05 level.

From table-21C, it is understood that the obtained t-values (0.83, 1.93) are not significant at 0.05 level and the t-value 2.89 is significant
at 0.05 level. It reveals that there is no significant difference in the attitude of teachers towards all aspects of learning difficulties between the government school teachers and the aided school teachers. On the other hand, there is significant difference between the government school teachers and the private school teachers in their attitude towards all aspects of learning difficulties. From the above table it can be concluded that the private school teachers have better attitude towards all aspects of learning difficulties than the teachers belonging to the other two types of schools i.e. government schools and the aided schools. This can be attributed to the involvement and commitment of the teachers working in private schools. The parental expectation and the management expectation make the teachers of the private schools evince better concern and favourable attitude towards various aspects of learning difficulties found in children. This finding is in agreement with the earlier findings of Dharmaraj (2000) and Sarojini (2000).

4.3.8. Effect of ‘Subject of Teaching’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties

Mean, SD and the calculated F-values of attitude scores of higher secondary teachers on various aspects of students with learning difficulties and aspects as a whole based on the variation in subject of teaching are presented in table – 22.

Table – 22: Mean, SD and the calculated F-values of attitude scores of higher secondary teachers on various aspects of students with learning difficulties and aspects as a whole based on the variation in the independent variable i.e. subject of teaching
The calculated F-values in table–22 clearly reveal that the attitude of higher secondary teachers towards all the aspects [concept of learning difficulties (0.97), characteristics of students with learning difficulties (0.60), causes of learning difficulties (0.62), instructional strategies for students with learning difficulties (0.50), guidance and counselling (0.78) and attitude as a whole (0.60)] are not significant at 0.05 level. It vouchsafes that the higher secondary teachers, inspire of their subject of teaching, do not differ significantly from one another in their attitude towards various aspects of learning difficulties. Despite the difference in their subject of teaching, there is no difference in their attitude towards learning difficulties. Hence, the formulated hypothesis ‘there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in their subject of teaching’ is rejected.

From the above analysis it can be concluded that the variable subject of teaching of higher secondary teachers has not influenced significantly their attitude towards the different aspects of students with learning difficulties. Notwithstanding the variation in the subject of teaching, the higher secondary teachers have evinced same attitude towards different aspects of learning difficulties.

4.3.9. Effect of ‘Type of School’ on the Attitude of Higher Secondary Teachers towards various Aspects of Learning Difficulties in Students

Mean, S.D and the calculated F-values of attitude scores of higher secondary teachers on various aspects of learning difficulties based on the variation in the type of school are presented in table – 23.

Table-23: Mean, S.D and calculated F-values of attitude scores of higher secondary teachers on various aspects of learning difficulties and aspects as a whole based on the variation in the independent variable i.e. type of school.
From table-23, it is observed that the F-values obtained in respect of aspects such as concept of learning difficulties (1.31), instructional strategies for students with learning difficulties (0.68) and guidance and counselling (0.61) are not significant at 0.05 level. Whereas the F-values obtained in respect of other aspects i.e. characteristics of students with learning difficulties (12.46), causes of learning difficulties (7.57) and aspects as a whole(4.89) are significant at 0.01 level. It reveals that the higher secondary teachers differ from one another in some aspects of learning difficulties such as characteristics of students with learning difficulties, causes of learning difficulties and attitude as a whole while there is no marked difference with reference to the other aspects. Therefore, the formulated hypothesis that ‘there exists significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties in students due to variation in the type of the school they are working in’ is accepted.

From the above it can be concluded that there is significant difference among the higher secondary teachers working in boys schools, girls schools and co-educational schools in their attitude towards characteristics of students with learning difficulties, causes of learning difficulties and aspects as a whole whereas there is no significant difference among the higher secondary teachers in their attitude towards other aspects of learning difficulties. The teachers working in coeducational schools have better attitude towards students with learning difficulties than the teachers belonging to the boys and girls schools. This may be ascribed to the nature of the role teachers play in coeducational school where they expect optimum output from the teachers in term of quality an service. This finding is in agreement with the findings of Dharmaraj (2000), Sarojini (2000) and Hoffman and Barbara (1995).

The F-values obtained reveal that there is significant difference among the boys, girls and co-educational schools teachers in their attitude towards aspects such as characteristics of students with
learning difficulties, causes of learning difficulties and aspects of as a whole (12.46, 7.57, 4.89). But the F-values do not specify between which two groups there is significant difference. Hence to know between which two groups there lies the significant difference, t-values have been calculated which are presented in the table-23A, 23B and 23C.

**Table-23A:** Mean, SD and the calculated t-values of the attitude scores of higher secondary teachers on the aspect of characteristics of students with learning difficulties due to variation in type of school

<table>
<thead>
<tr>
<th>Type of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys Schools (G₁)</td>
<td>78</td>
<td>49.59</td>
<td>5.6</td>
<td>G₁ vs G₂ = 0.17@</td>
</tr>
<tr>
<td>Girls Schools (G₂)</td>
<td>36</td>
<td>49.46</td>
<td>5.82</td>
<td>G₁ vs G₃ = 3.71**</td>
</tr>
<tr>
<td>Co-Ed Schools(G₃)</td>
<td>244</td>
<td>52.44</td>
<td>6.43</td>
<td>G₂ vs G₃ = 4.49**</td>
</tr>
</tbody>
</table>

**Note:**

* ** Significant at 0.01 level.
* @ Not Significant at 0.05 level.

From table-23A, it can be seen that the obtained t-value (0.17) is not significant at 0.05 level whereas the other two t-values (3.71, 4.49) are significant at 0.05 level. It shows that there is no significant difference between the boys schools teachers and the girls schools teachers whereas there is significant difference between the boys school teachers and the coeducation school teachers and between the girls school teachers and the coeducation schools teachers (4.49).

The above analysis leads to the conclusion that the coeducational schools teachers have better attitude towards
characteristics of students with learning difficulties and the causes of learning difficulties than the teachers belonging to the boys schools and the girls schools.

Table-23B: Mean, SD and the t-values of the attitude scores of higher secondary teachers on the aspect of causes of learning difficulties due to variation in the type of school

<table>
<thead>
<tr>
<th>Type of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys Schools (G1)</td>
<td>78</td>
<td>34.92</td>
<td>5.16</td>
<td>G₁ vs G₂ =1.30@</td>
</tr>
<tr>
<td>Girls Schools (G2)</td>
<td>36</td>
<td>35.83</td>
<td>4.36</td>
<td>G₁ vs G₃ = 3.37**</td>
</tr>
<tr>
<td>Co-Ed Schools (G3)</td>
<td>244</td>
<td>37.2</td>
<td>4.96</td>
<td>G₂ vs G₃ = 2.71*</td>
</tr>
</tbody>
</table>

Note: * Significant at 0.05 level.  
** Significant at 0.01 level.  
@ Not significant at 0.05 level.

From table-23B, it is clear that the t-value obtained 1.30 is not significant at 0.05 level and the other two t-values are significant at 0.01 and 0.05 level respectively. It implies that there is no significant difference between the boys schools teachers and the girls schools teachers in their attitude towards causes of learning difficulties. On the other hand, there is significant difference between the boys school teachers and coeducational schools teachers and between the girls school teachers and the coeducational schools teachers in their attitude towards causes of learning difficulties.

From the above analysis it can be concluded that the teachers working in co-educational schools have a better attitude towards the causes of learning difficulties than the teachers belonging to girls schools and the boys schools. In the level of attitude, the girls schools teachers come next with the boys schools teachers at the tail.
Table-23C: Mean SD and the t-values of the attitude scores of higher secondary teachers on the aspect of attitude as a whole due to variations in type of school

<table>
<thead>
<tr>
<th>Type of School</th>
<th>N</th>
<th>Mean</th>
<th>S.D</th>
<th>Calculated t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys Schools (G₁)</td>
<td>78</td>
<td>238.24</td>
<td>20.68</td>
<td>G₁ vs G₂ = 0.09@</td>
</tr>
<tr>
<td>Girls Schools (G₂)</td>
<td>36</td>
<td>238.51</td>
<td>21.54</td>
<td>G₁ vs G₃ = 2.46**</td>
</tr>
<tr>
<td>Co-Ed Schools (G₃)</td>
<td>244</td>
<td>245.27</td>
<td>24.09</td>
<td>G₂ vs G₃ = 2.73**</td>
</tr>
</tbody>
</table>

Note: ** Significant at 0.01 level.
      @ Not significant at 0.05 level.

From table-23C, it can be understood that the obtained t-value (0.09) is not significant at 0.05 level and the other two t-values (2.46, 2.73) are significant at 0.05 level. It shows that there is no significant difference between the boys school teachers and the girls schools teachers in their attitude towards all aspects of learning difficulties as a whole. On the other hand, there is significant difference between the boys schools teachers and the coeducational schools teachers and between the girls school teachers and the coeducation schools teachers in their attitude towards all aspects of learning difficulties.

The above analysis gives the conclusion that the coeducation school teachers have better attitude towards different aspects of learning difficulties as a whole than the teachers belonging to the girls schools and the boys schools. In terms of level of attitude, the girls schools teachers rank second and the boys schools teachers stand last.

Part – IV: Correlation Studies

Correlation is the relationship between two or more paired variables or two or more sets of data. The degree of relationship is measured and represented by the coefficient of correlation. This coefficient may be identified by either the letter r, the Greek letter rho (ρ), or other symbols, depending on the data distributions and the way of coefficient
has been calculated. Variables may be positively or negatively correlated. When one increases, if the other tends to decrease, the variables are said to be negatively correlated. On the other hand, when one increases, if the other tends to increase, both the variables are said to be positively correlated. As far as this study is concerned, correlation analysis has been made to study whether, how and how far both the variables i.e. awareness and attitude are correlated.

**Table-24:** Relationship between awareness and attitude of higher secondary teachers with regard to various aspects of learning difficulties in students and LD aspects as a whole.

Correlations between awareness and attitude scores have been computed based on the three levels (viz. low, moderate and high) of higher secondary teachers in respect of various aspects of learning difficulties in students.

<table>
<thead>
<tr>
<th>Aspects of Learning Difficulties</th>
<th>Correlation between Awareness and Attitude</th>
<th>Calculated r-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Concept of learning difficulties</td>
<td>0.11@</td>
<td>0.13*</td>
</tr>
<tr>
<td>Characteristics of students with learning difficulties</td>
<td>0.04@</td>
<td>0.17*</td>
</tr>
<tr>
<td>Causes of learning difficulties</td>
<td>– 0.01@</td>
<td>0.05@</td>
</tr>
<tr>
<td>Instructional strategies for students with learning difficulties</td>
<td>– 0.13@</td>
<td>0.28**</td>
</tr>
<tr>
<td>Guidance and counselling</td>
<td>– 0.27@</td>
<td>0.01@</td>
</tr>
<tr>
<td>Aspects as a whole</td>
<td>0.04@</td>
<td>0.38**</td>
</tr>
</tbody>
</table>

**Note:**

* Significant at 0.05 level.

** Significant at 0.01 level.

@ Not significant at 0.05 level
From table-24, it is clear that, there exists significant relationship between awareness and attitude in respect of the concept of learning difficulties at moderate level (0.13) and high level (0.42) only. As for the characteristics of students with learning difficulties, significant relationship prevails only at moderate level (0.17). This table further reveals that there exists no significant relationship between awareness and attitude of higher secondary teachers with regard to causes of learning difficulties and guidance and counselling. Significant relationship is inferred from the table in respect of instructional strategies for students with learning difficulties between awareness and attitude at moderate level (0.28) and high level (0.30) only. As a whole, the awareness and attitude of higher secondary teachers are significantly related in moderate (0.38) and high levels (0.34) only. To sum up, no significant relationship prevails between awareness and attitude at low level in respect of any aspect of learning difficulties. This finding adds evidence to the findings of Treder and David (2000).

4.4. Stepwise Multiple Regression Analysis

Multiple regression is the term used for predicting Y from two or more independent variables combined. The formula for multiple regression is just an extension of that for linear regression.

\[ Y = a + b_1 X_1 + b_2 X_2 + \ldots \]

It is believed that several variables either independently or together influence that dependent variable. The task of scientific evaluation consists in establishing how much and how well a set of
independent variables, having a logical bearing on the dependent variables, facilitate accurate prediction. This can be well accomplished by applying stepwise Multiple Regression Analysis. As far as this study is concerned, the stepwise Multiple Regression Analysis has been worked out to identify and predict the independent variables and their contribution to the dependent variables. The summary of Multiple Regression Analysis is presented in table – 25.

**Table-25: Summary of Stepwise Multiple Regression Analysis**

**Dependent Variables:** Awareness and Attitude of Higher Secondary Teachers.

**Independent Variables:** Gender, Age, Educational Qualification, Training in Special Education, Subject of Teaching, Years of Experience, Location of school, Nature of School and Type of School.

The stepwise multiple regression analysis has been worked out to identify and predict the independent variables and their contribution to the dependent variables i.e. awareness and attitude. The independent variables in this study are gender, age, educational qualification, training in special education, years of experience, nature of the school, location of the school, type of school and subject teaching. For each dependent variable stepwise multiple regression analysis has been carried out separately and the same is presented in the following table. The coefficient, the calculated $R^2$ and the percentage of contribution of independent variables are furnished in table-25.
Table-25: Co-efficient $R^2$ and Percentage of Contribution of Independent Variables to Awareness and Attitude

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Coefficient</th>
<th>Individual contribution of the Variable ($R^2$)</th>
<th>Percentage wise individual contribution of the Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awareness</strong></td>
<td>Gender</td>
<td>0.073</td>
<td>0.005</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-0.069</td>
<td>0.005</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Training in special education</td>
<td>0.077</td>
<td>0.006</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>Years of experience</td>
<td>-0.072</td>
<td>0.005</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Location of school</td>
<td>0.086</td>
<td>0.007</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Nature of school</td>
<td>0.097</td>
<td>0.009</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Type of school</td>
<td>0.068</td>
<td>0.005</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Attitude</strong></td>
<td>Years of experience</td>
<td>-0.036</td>
<td>0.001</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-0.075</td>
<td>0.006</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>Location of school</td>
<td>0.090</td>
<td>0.008</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>Nature of school</td>
<td>0.142</td>
<td>0.020</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Type of school</td>
<td>0.136</td>
<td>0.018</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Awareness</td>
<td>0.5614</td>
<td>0.264</td>
<td>26.4</td>
</tr>
</tbody>
</table>
The first part of the stepwise multiple regression analysis is related to awareness of higher secondary teachers about various aspects of learning difficulties in students and the second part of the stepwise multiple regression analysis is related to the attitude of the higher secondary teachers towards various aspects of learning difficulties.

The first part of the stepwise multiple regression analysis indicates that each of the independent variables gender, age, training in special education, years of experience, location of school, nature of school and type of school accounts for about one percent contribution to the awareness of higher secondary teachers. So it can be concluded that the independent variables such as gender, age, training in special education, years of experience, location of school, nature of school and type of school are the major predictors in influencing the awareness of higher secondary teachers about various aspects of learning difficulties while educational qualification and subject of teaching are not at all the predictors.

The second part of the stepwise multiple regression analysis reveals that each of the independent variables such as nature of school and type of school contribute about two percent to the attitude of higher secondary teachers towards various aspects of learning difficulties. Likewise, age and location of the school account for around one percent contribution and years of experience is ascribable for only point one percent contribution. So it can be concluded that the independent variables such as nature of school, types of school, are the major predictors followed by age and location of the school in influencing the attitude of higher secondary teachers towards various aspects of learning difficulties. On the other hand, the independent variables such as gender, educational qualification, training in special education, and subject of teaching are not at all the predictors.
4.5. An Overview of Findings

PART – I: Findings of Descriptive Analysis

1) The higher secondary teachers possess moderate awareness about the concept of learning difficulty, characteristics of students with learning difficulties and causes of learning difficulties. The teachers have better awareness about the instructional strategies for the students with learning difficulties, guidance and counselling. This can be ascribed to the better and higher qualifications possessed by the higher secondary school teachers. This also indicates that the higher secondary teacher have considerable knowledge about the innovative instructional strategies and guidance and counselling but they do not have adequate knowledge about the students with special needs. This shows that their base in special education / inclusive education and students with special needs should be strengthened by means of orientation programmes or inservice training so that their competence to teach LD students can be enhanced to a considerable extent. Once their knowledge as well as awareness is strengthened, they will be able to identify the LD students at an early stage and they will be able to combat learning difficulties in a better way. It is in tune with the findings of Nagomi Ruth (2000) Sarojini (2000), Selvakani (2000), Brent et al. (2003) and Kusuma Harinath (2001).

2) The higher secondary teachers evince moderate attitude towards most of the items under the aspects / dimensions such as concept of learning difficulties, characteristics of LD students and causes of learning difficulties. This may be ascribed to their inadequate orientation or exposure with regard to special
education / inclusive education and the special needs students. As for the other two aspects, instructional strategies and guidance and counselling, they have exhibited better attitude towards most of the items related to these aspects. Their attitude is high and positive with regard to motivational technique, learning strategies structural programmes, self monitoring technique, close rapport and individual attention. They have shown just moderate attitude towards repeated teaching, reciprocal teaching self instructional training and problem solving training. Their attitude is very low towards using the same method for all the students and application of multisensory approach. As for guidance and counselling, they have shown either positive attitude or moderate attitude. Their attitude is positive towards promoting self-confidence, developing good rapport, peer group guidance and parental guidance. Their attitude is moderate towards parental involvement in planning community counselling and referral to specialists. The above findings are in agreement with the findings of Harris Mary (1998), Jena (2000), Kusuma (2001), Reiter et al. (1998) and Susan Stainback and William Stainback (1982)

PART – II: Findings of Differential Analysis
1. Gender causes no significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties in students. It supports the findings of Sarojini (2000) and Dharmaraj (2000).

2. The variable age has not significantly influenced the awareness of higher secondary teachers about different aspects of learning difficulties in students. The variable age has not significantly influenced the awareness of higher secondary teachers about the different aspects of learning difficulties in students. Even though they belong to different age groups, they evince same level of
awareness but learning difficulties students. It is in agreement with the findings of Selvakani (2000), and Beth (1997).

3. *Educational qualification* does not cause significant difference in the awareness of higher secondary teachers about the different aspects of learning difficulties. It is in tune with the findings of Sarojini (2000) and Dharmaraj (2000).


5. The variable *years of experience* has caused significant difference in the awareness higher secondary teachers about various aspects of learning difficulties. The experienced teachers have better awareness about the concept, characteristics and causes of learning difficulties. It is in agreement with the findings of Sarojini (2000), Guido (1990) and Prisner (2003).

6. The variable, *location of school* has significantly influenced the awareness of teachers with reference to the aspect causes of learning difficulties. The teachers working in urban area have better awareness than the teachers working in rural area. On the other hand, the variable *location of the school* has no significant influence on teachers’ awareness about the other aspects of learning difficulties. It is in tune with the findings of Dharmaraj (2000) Susan Stainback and William Stainback (1982).

7. There is no significant difference among the teachers working in govt schools, aided schools and private schools in their awareness about the concept of learning difficulties, instructional strategies for students with learning difficulties and guidance and counselling whereas there is significant difference among these teachers in their awareness about characteristics of students with learning difficulties and causes of learning difficulties. With regard to these two aspects, the teachers working in private schools have better awareness than the teachers working in govt schools and
aided schools. It supports the findings of Kusuma Harinath (2001), Selvakani (2000) and Bowers et al. (1998).

8. The variable subject of teaching of higher secondary teachers has significantly influenced their awareness only about the aspect, guidance and counselling. Subject of teaching has had no influence on the awareness of teachers regarding other aspects.

9. There is no significant difference among the teachers working in different schools such as boys schools, girls schools and coeducational schools in their awareness about concept of learning difficulties, characteristics of students with learning difficulties, instructional strategies for students with learning difficulties, guidance and counselling whereas there is significant difference among them in their awareness about the causes of learning difficulties. As for this particular aspect, the teachers working in coeducational schools have better awareness than the teachers working in girls schools and boys schools. In the awareness about the causes of learning difficulties, the girls schools teachers stand next to the teachers of coeducational schools with the teachers of boys schools trailing behind. It supports the findings of Jeyaprabha (2003) and Sarojini (2000).

10. Gender has not influenced the attitude of the teachers towards various aspects of learning difficulties. Only with regard to the characteristics of students with learning difficulties, there is significant difference between the men and women teachers. Women teachers evince a more favourable attitude towards the characteristics of students with learning difficulties than the men teachers. This can be attributed to the keener observation and the better concern they evince in the classroom environment. It supports the findings of Bearn et al. (1998) and Harris Mary (1998).

11. The independent variable age has not significantly influenced the attitude of higher secondary teachers towards the various aspects of learning difficulties in students.
12. *Educational qualification* does not cause significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties. Despite the variation in educational qualification, they all evince similar attitude towards different aspects of learning difficulties. It is in agreement with the findings of Jena (2000) and Sarojini (2000).

13. *Training in special education* causes no significant difference in the attitude of higher secondary teachers towards different aspects of learning difficulties. In spite of the difference in the training, they all evince same attitude towards different aspects of learning difficulties. It lends support to the findings of Lombard, (1998), Schunm and Vaughn (1992).

14. The variable *years of experience* has caused no significant difference in the teachers’ attitude towards different aspects of learning difficulties. Though they significantly differ from one another in their years of experience, they have evinced same attitude towards the different aspects of learning difficulties. The findings of this table coincides with the findings of Guido (1990) and Praisner (2003).

15. The variable, *location of school* has significantly influenced the attitude of teachers with reference to the instructional strategies for students with learning difficulties and attitude as a whole. The teachers working in urban area have better attitude than the teachers working in rural area towards the aspects, instructional strategies for students with learning difficulties and attitude as a whole. On the other hand, the variable *location of the school* has no significant influence on teachers’ attitude towards the other aspects of learning difficulties. It is in agreement with the findings of Drury (1994), Husuma Harinath (2001) and Harris Mary (1998).

16. There is significant difference among the higher secondary teachers working in Government, aided and private schools in their attitude towards characteristics of students with learning
difficulties, causes of learning difficulties and aspects as a whole, whereas there is no significant difference among the higher secondary teachers working in Government, aided and private schools in their attitude towards others aspects of learning difficulties. The teachers working in private schools have better attitude towards students with learning difficulties than the teachers belonging to the Government and aided schools. This can be ascribed to the nature of teachers’ role in the private schools where they expect optimum output from the teachers. It coincides with the findings of Reiter et al. (1998) and Kusuma Harinath (2001).

17. The variable subject of teaching of higher secondary teachers has not influenced significantly their attitude towards the different aspects of students with learning difficulties. Notwithstanding the variation in the subject of teaching, the higher secondary teachers have evinced same attitude towards different aspects of learning difficulties.

18. There is significant difference among the higher secondary teachers working in boys schools, girls schools and co-educational schools in their attitude towards characteristics of students with learning difficulties, causes of learning difficulties and aspects as a whole, whereas there is no significant difference among the higher secondary teachers in their attitude towards other aspects of learning difficulties. The teachers working in private schools have better attitude towards students with learning difficulties than the teachers belonging to the govt and aided schools. This may be ascribed to the nature of the role the teachers play in private schools where they expect optimum output from the teachers in terms of quality and service. This findings is in agreement with the findings of Dharmaraj (2000), Sarojini (2000) and Hoffman and Barbara (1995).
PART – III: Findings of Correlation Analysis
There exists significant relationship between awareness and attitude in respect of the concept of learning difficulties at moderate level (0.13) and high level (0.42) only. With regard to characteristics of students with learning difficulties significant relationship prevails only at moderate level (0.17). It is also revealed that there exists no significant relationship between awareness and attitude of higher secondary teachers with regard to causes of learning difficulties and guidance and counselling. Significant relationship is inferred from the table in respect of instructional strategies for students with learning difficulties between awareness and attitude at moderate level (0.28) and high level (0.30) only. As a whole, the awareness and attitude of higher secondary teachers are significantly related at moderate (0.38) and high levels (0.34) only. To sum up no significant relationship prevails between awareness and attitude at low level in respect of all aspects of learning difficulties. This finding adds evidence to the findings of Treder and David (2000).

PART – IV: Findings of Multiple Regression Analysis
The independent variables such as gender, age, training in special education, years of experience, location of school, nature of school and type of school are the major predictors in influencing the awareness of higher secondary teachers about various aspects of learning difficulties while educational qualification and subject of teaching are not at all predictors. As for attitude, the independent variables such as nature of school, types of school, age and location of the school are the major predictors in influencing the attitude of higher secondary teachers towards various aspects of students with learning difficulties. On the other hand, the independent variables such as gender, educational qualification, training in special education, subject of teaching and years of experience are not at all predictors.

Summary and suggestions are presented in the forthcoming chapter.