

CHAPTER - IV
ANALYSIS AND INTERPRETATION

4.0	Introduction	64
4.1	Section - I Qualitative Analysis	65
4.2	Section -II Quantitative Analysis	69

CHAPTER - IV

ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the result of the study conducted to find out the **“Effect of Training Package on Developing Visual Skills of Children with Low Vision”**. A total of 60 children with low vision were selected to find out the efficacy of training package on developing visual skills of children with low vision by administering the package before and after training.

The main objective of the study is to develop visual skills among the selected children with low vision through appropriate use of optical devices and materials and to compare with type of vision loss and visual functioning, age, gender and grade level.

The data pertaining to the visual skills of children with low vision were processed and analyzed with the use of both Qualitative and Quantitative analysis and the results obtained are discussed under the following sections.

4.1 Section 1: Qualitative Analysis

1. Presents the demographic details of the sample

4.2 Section II : Quantitative Analysis

1. Comparison of visual skills of children with low vision through pre and posttest scores after introduction of visual efficiency training (paired ‘t’ test).
2. Multiple comparisons with respect to different variables (ANCOVA).

4.1 Section 1: Qualitative Analysis

4.1.1 Demographic Details of the Samples

The demographic details of the samples of the present study is presented under the table 4.1 and figure 4.1.

Table No. 4.1
Demographic details of the samples

S.No	Variable	Category	Number	Percentage
1.	Age	• 6 to 8	13	22
		• 9&10	26	43
		• 11 & 12	21	35
2.	Grade level	• I Std	06	10
		• II Std	06	10
		• III Std	16	27
		• IV Std	10	17
		• V Std	22	36
3.	Gender	• Boys	34	57
		• Girls	26	43
4.	Parents educational qualification	• Illiterate	43	36
		• School level	70	58
		• Graduation	07	06
5.	Type of family	• Joint family	12	20
		• Nuclear family	48	80
6.	Vision loss	• Blurred vision	45	75
		• Peripheral vision loss	08	13
		• Central vision loss	07	12
7.	Consanguineous marriage	• Consanguine	45	75
		• Non Consanguine	15	25
8.	Employment sector	• Business	06	10
		• Government	07	11

S.No	Variable	Category	Number	Percentage
		<ul style="list-style-type: none"> • Non government • Coolie 	31 16	52 27
9.	Eye diseases	<ul style="list-style-type: none"> • Lens problem • Genetic disorder • Refractive error • Corneal disorder • Retinal disorder • Optic atrophy • Macular problem • Glaucoma • Cone dystrophy 	18 06 10 08 07 01 06 01 03	30 10 17 14 12 01 10 01 05
10.	Field of vision	<ul style="list-style-type: none"> • Severely restricted • Restricted • Normal 	26 31 03	43 52 05
11.	Distant vision optical devices	<ul style="list-style-type: none"> • Spectacles • No improvement 	47 13	78 22
12.	Near vision optical devices	<ul style="list-style-type: none"> • Mag. spectacles • Hand held magnifier • Stand magnifier • No Improvement 	14 11 10 25	23 18 17 42

From the above table it is evident that among the selected samples majority (43%) of the children were in the age group of nine to ten years, (35%) of the children fall between the age group of eleven and twelve years and the remaining (22%) of the children belongs to six to eight years.

From the table, pertaining to grade level about 36% of the children with low vision were from grade V, 27% of the students were from grade III level and 17% of the them represents from IV grade and 10% from I and II Grade level respectively.

Among the 60 samples boys represented 57% and 43% girls. While analyzing the parent's educational qualification 58% of the parents studied

up to school level, 36 % of them were illiterates and only 6% of the parents were graduated.

While analyzing the type of family, only 20% of the family living jointly remaining 80% belongs to nuclear family system.

Among 60 children with low vision 75% of them reported having blurred vision, 12% and 13% of children suffered from central and peripheral vision loss respectively.

While analyzing the marital status of parents 75% belongs to consanguineous marriage.

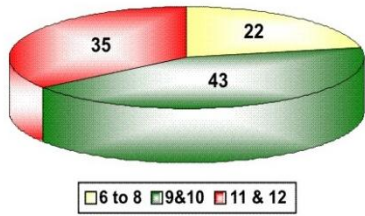
While analyzing the employment status of the parents of the low vision children, it is apparent that the majority 31% of them were employed in the non government sectors. Only 7% of them were employed in the government sectors. And the remaining 6% were doing their own business/self employment.

The study revealed that the main causes of low vision was found to be lens disorder(30%) and refractive error (17%), followed by problems with corneal disorder (14%) and Retinal disorder (12%) and other etiologies includes genetic disorder and macular problems accounting for (10%) respectively and optic atrophy (1%), Glaucoma (1%) and cone dystrophy (5%).

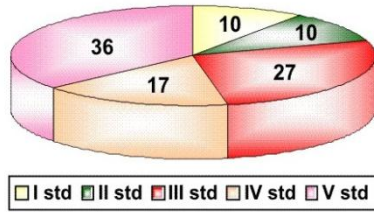
From the table it is clear that the visual acuity of low vision children were improved after refraction, 50% of the children improved to 6/60<6/18, (mild low vision), 32% children improved 3/60<6/60 (moderate low vision) and 15% children were reported with 1/60<3/60 (sever low vision) and 2% children improved to normal vision

The above table clearly indicates that 78% of children's vision was corrected with spectacles which promoted improved visual acuity. The near vision devices improved fifty eight percent of the children's visual efficiency by appropriate use of near vision devices.

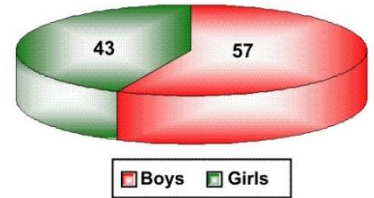
Figure 4.1
Demographic Details of the Samples



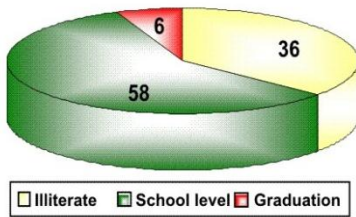
Age



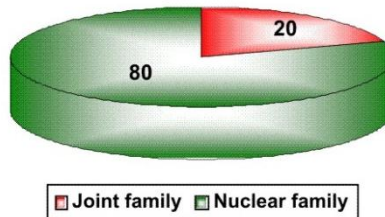
Grade Level



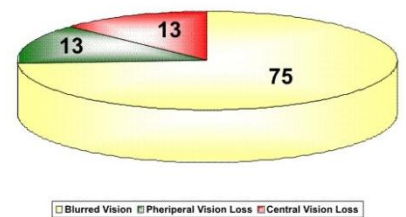
Gender



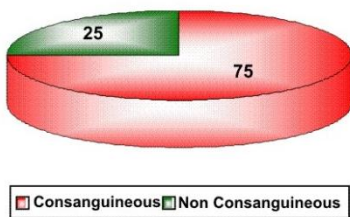
Parents Educational Qualification



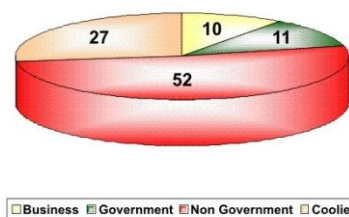
Type of family



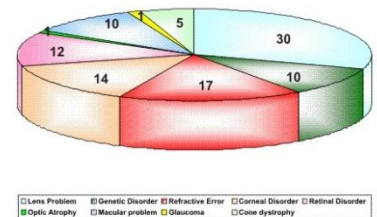
Vision loss



Consanguineous Marriage



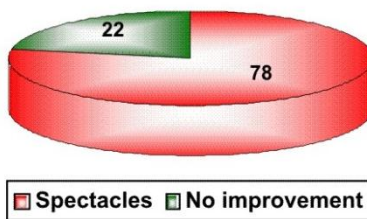
Employment Sector



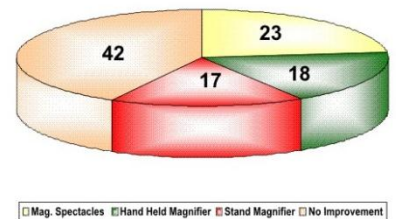
Eye Diseases



Field of Vision



Distant Vision Optical Devices



Near Vision Optical Devices

4.2 Section II : Quantitative Analysis

4.2.1 Comparison of visual skills of children with low vision with regard to pre and posttest mean scores after introduction of visual efficiency training using paired 't' test with respect to variables are presented under

a. Analysis of pre and posttest mean scores of visual efficiency of children with blurred vision

The 't' test was applied to find out significant difference between the pretest and posttest mean scores of visual efficiency of children with blurred vision. The results obtained are given in the table 4.2 and figure 4.2.

Table No. 4.2
Analysis of pre and posttest mean scores of visual skills of children
with blurred vision

S. No	Visual Skill	Test	Mean	N	SD	df	't'-Value
1.	Visual awareness	pretest	5.18	45	1.86	44	14.23**
		posttest	11.51	45	2.61		
2.	Visual attention	pretest	2.62	45	0.96	44	12.59**
		posttest	4.62	45	0.61		
3.	Visual fixation	pretest	2.31	45	0.85	44	13.31**
		posttest	4.56	45	0.94		
4.	Visual focusing	pretest	1.04	45	1.19	44	5.54**
		posttest	1.96	45	1.04		
5.	Visual tracking	pretest	0.62	45	0.91	44	13.33**
		posttest	4.16	45	1.73		
6.	Visual scanning	pretest	1.91	45	0.60	44	21.57**
		posttest	4.67	45	0.64		
7.	Visual discrimination	pretest	3.20	45	0.55	44	13.74**
		posttest	4.69	45	0.63		
8.	Visual figure ground	pretest	0.31	45	0.47	44	14.20**
		posttest	2.49	45	0.99		
9.	Visual memory	pretest	0.89	45	1.85	44	10.56**
		posttest	3.82	45	0.49		
10.	Visual closure	pretest	0.29	45	0.55	44	13.55**
		posttest	2.53	45	1.10		
11.	Spatial relation and form constancy	pretest	0.00	45	0.00	44	14.04**
		posttest	2.31	45	1.10		
12.	Visual motor coordination	pretest	1.89	45	0.78	44	09.13**
		posttest	2.93	45	0.25		

**Significant at 1% level

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of visual skills of children with blurred vision differed significantly. The calculated t-value is greater than the table value 2.69 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of visual skills. Comparing the mean values obtained for the pre and post mean scores and it is inferred that the posttest scores are higher than the pretest scores. Hence the hypothesis “***there is no significant difference between the pretest and posttest mean scores of visual skills of children with blurred vision***” is rejected.

b. Analysis of pretest and posttest mean scores of visual efficiency of children with central vision loss

The ‘t’ test was applied to find out significant difference in the pretest and posttest mean scores of visual efficiency of children with central vision loss. The results obtained are given in the table 4.3 and figure 4.2.

Table No. 4.3**Analysis of pre and posttest mean scores of visual skills of children
with central vision loss**

S. No	Visual Skill	Test	Mean	N	SD	df	't'-Value
1.	Visual awareness	Pretest	2.43	7	0.79	6	4.73**
		Posttest	9.43	7	3.41		
2.	Visual attention	Pretest	1.14	7	1.07	6	3.04**
		Posttest	3.86	7	1.68		
3.	Visual fixation	Pretest	0.58	7	0.53	6	5.00**
		Posttest	4.00	7	1.53		
4.	Visual focusing	Pretest	0.00	7	0.00	6	4.58**
		Posttest	2.00	7	1.15		
5.	Visual tracking	Pretest	1.29	7	0.95	6	4.80**
		Posttest	4.14	7	1.07		
6.	Visual scanning	Pretest	0.57	7	0.53	6	5.76**
		Posttest	4.43	7	1.51		
7.	Visual discrimination	Pretest	1.14	7	1.07	6	4.69**
		Posttest	4.29	7	1.11		
8.	Visual figure ground	Pretest	0.00	7	0.00	6	5.44**
		Posttest	2.29	7	1.11		
9.	visual memory	Pretest	0.57	7	0.53	6	11.50**
		Posttest	3.86	7	0.38		
10	Visual closure	Pretest	0.57	7	0.53	6	5.30**
		Posttest	2.71	7	0.76		
11	Spatial relation and form constancy	Pretest	0.00	7	0.00	6	5.30**
		Posttest	2.14	7	1.07		
12	Visual Motor coordination	Pretest	0.57	7	0.53	6	4.58**
		Posttest	1.57	7	0.53		

**** Significant at 1% level**

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of visual skills of children with central vision loss differed significantly. The calculated t- value is greater than the table value 3.71 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest scores of visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest mean scores are higher than the pretest scores. Hence the hypothesis “***there is no significant difference between the pretest and posttest mean scores of visual skills of children with central vision loss***” is rejected.

c. Analysis of pretest and posttest mean scores of visual efficiency of children with peripheral vision loss

The ‘t’ test was applied to find out the significant difference in the pretest and posttest mean scores of visual efficiency of children with peripheral vision loss. The results obtained are given in the table 4.4 and figure 4.2.

Table No. 4.4
Analysis of pre and posttest mean scores of visual skills of children
with peripheral vision loss

S. No	Visual Skill	Test	Mean	N	SD	Df	't'-Value
1.	Visual awareness	Pretest	3.25	8	1.39	7	3.38**
		Posttest	6.75	8	3.49		
2.	Visual attention	Pretest	0.75	8	0.46	7	5.60**
		Posttest	3.50	8	1.31		
3.	Visual fixation	Pretest	2.00	8	1.31	7	2.20**
		Posttest	2.88	8	1.36		
4.	Visual focusing	Pretest	1.50	8	0.93	7	*
		Posttest	1.50	8	0.93		
5.	Visual tracking	Pretest	0.00	8	0.00	7	6.18**
		Posttest	1.63	8	0.74		
6.	Visual scanning	Pretest	0.75	8	0.46	7	6.36**
		Posttest	2.63	8	1.06		
7.	Visual discrimination	Pretest	2.25	8	1.39	7	2.76**
		Posttest	3.63	8	1.69		
8.	Visual figure ground	Pretest	0.75	8	0.46	7	2.38**
		Posttest	1.38	8	0.74		
9.	Visual memory	Pretest	0.75	8	0.46	7	2.98**
		Posttest	4.13	8	3.36		
10.	Visual closure	Pretest	1.50	8	0.93	7	1.32**
		Posttest	2.00	8	0.93		
11.	Spatial relation and form constancy	Pretest	0.00	8	0.00	7	7.00**
		Posttest	0.88	8	0.35		
12.	Visual motor coordination	Pretest	0.00	8	0.00	7	9.00**
		Posttest	2.25	8	0.71		

** Significant at 1% level

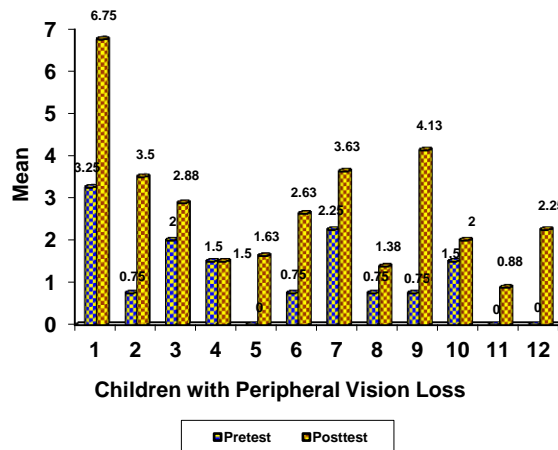
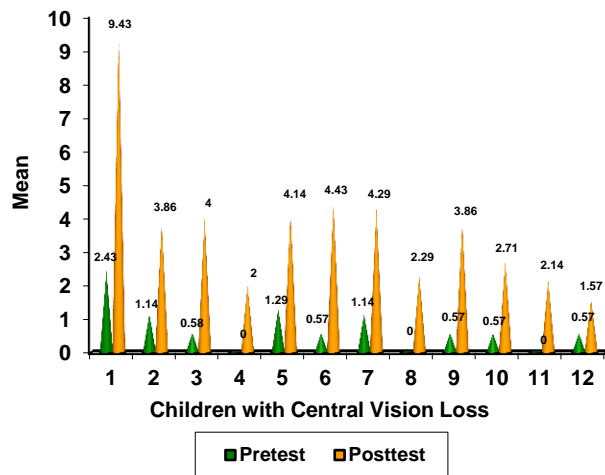
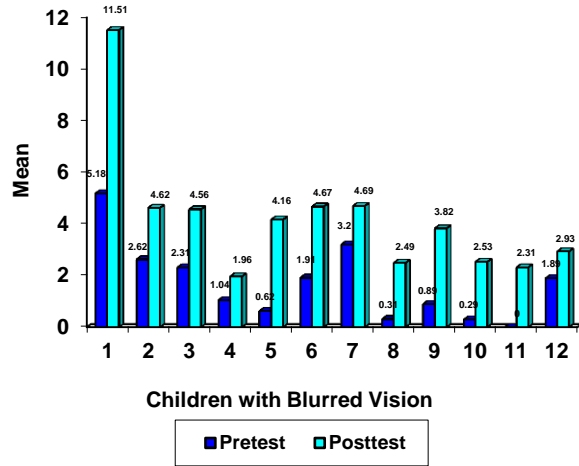
* **The t cannot be computed because the standard error of the difference is 0.**

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of visual skills of children with peripheral vision loss differed significantly. The calculated t-value is greater than the table value is 3.50 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest scores are higher than the pretest mean scores. Hence the **hypothesis “*there is no significant difference between the pretest and posttest mean scores of visual skills of children with peripheral vision loss*”** is rejected.

From the above table it is found that, when comparing the pre and posttest mean scores of visual focusing skill indicates that there is no difference in the pretest and posttest mean scores. Hence, the ‘t’ test cannot be computed because of the standard error of the difference is ‘0’

Figure 4.2

Analysis of pre and posttest mean scores of visual skills of children with blurred vision, central vision loss & peripheral vision loss



- | | | |
|---------------------|--------------------------|---|
| 1. Visual awareness | 5. Visual tracking | 9. Visual memory |
| 2. Visual attention | 6. Visual scanning | 10. Visual closure |
| 3. Visual fixation | 7. Visual discrimination | 11. Spatial relation and form constancy |
| 4. Visual focusing | 8. Visual figure ground | 12. Visual motor coordination |

d. Analysis of pretest and posttest mean scores of visual efficiency of low vision boys

The 't' test was applied to find out significant difference in the pretest and posttest mean scores of visual efficiency of boys with low vision. The results obtained are given in the table 4.5 and figure 4.3.

Table No. 4.5
Analysis of pretest and posttest mean scores of visual efficiency of low vision boys

S. No	Visual Skill	Test	Mean	N	SD	df	't'-Value
1.	Visual awareness	Pretest	4.65	34	1.97	33	10.96**
		Posttest	10.97	34	3.07		
2.	Visual attention	Pretest	2.21	34	1.20	33	11.71**
		Posttest	4.50	34	0.90		
3.	Visual fixation	Pretest	2.12	34	1.07	33	9.35**
		Posttest	4.35	34	1.01		
4.	Visual focusing	Pretest	0.88	34	1.12	33	4.13**
		Posttest	1.68	34	0.94		
5.	Visual tracking	Pretest	0.47	34	0.83	33	12.02**
		Posttest	4.03	34	1.64		
6.	Visual scanning	Pretest	1.62	34	0.85	33	15.87**
		Posttest	4.47	34	0.86		
7.	Visual discrimination	Pretest	2.76	34	1.02	33	8.73**
		Posttest	4.59	34	0.70		
8.	Visual figure ground	Pretest	0.29	34	0.46	33	10.23**
		Posttest	2.38	34	1.02		
9.	Visual memory	Pretest	0.65	34	0.69	33	12.45**
		Posttest	4.06	34	1.50		
10.	Visual closure	Pretest	0.47	34	0.75	33	9.57**
		Posttest	2.53	34	0.99		
11.	Spatial relation and form constancy	Pretest	0.00	34	0.00	33	11.75**
		Posttest	2.21	34	1.09		
12.	Visual motor coordination	Pretest	1.68	34	1.09	33	7.14**
		Posttest	2.68	34	0.59		

** Significant at 1% level

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of visual skill scores of **boys with low vision** differed significantly. The calculated t-value is greater than the table value is 2.73 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest scores are higher than the pretest mean scores. Hence the hypothesis “***there is no significant difference between the pretest and posttest mean scores of visual skills of low vision boys***” is rejected.

e. Analysis of pretest and posttest mean scores of visual efficiency of low vision girls

The 't' test was applied to find out significant difference in the pretest and posttest mean scores of visual efficiency of low vision girls. The results obtained are given in the table 4.6 and figure 4.3.

Table No. 4.6
Analysis of pretest and posttest mean scores of visual efficiency of low vision girls

S. No	Visual Skill	Test	Mean	N	SD	df	't'-Value
1.	Visual awareness	Pretest	04.54	26	2.04	25	9.59**
		Posttest	10.19	26	3.46		
2.	Visual attention	Pretest	02.20	26	1.17	25	6.77**
		Posttest	04.23	26	1.07		
3.	Visual fixation	Pretest	02.00	26	1.02	25	8.15**
		Posttest	04.15	26	1.43		
4.	Visual focusing	Pretest	01.12	26	1.18	25	4.72**
		Posttest	02.19	26	1.10		
5.	Visual tracking	Pretest	00.81	26	0.98	25	8.03**
		Posttest	03.54	26	1.94		
6.	Visual scanning	Pretest	01.58	26	0.70	25	11.62**
		Posttest	04.23	26	1.31		
7.	Visual discrimination	Pretest	02.92	26	1.06	25	7.86**
		Posttest	04.38	26	1.20		
8.	Visual figure ground	Pretest	00.39	26	0.50	25	8.99**
		Posttest	02.23	26	1.07		
9.	Visual memory	Pretest	01.08	26	2.33	25	5.58**
		Posttest	03.62	26	0.75		
10.	Visual closure	Pretest	00.50	26	0.71	25	7.97**
		Posttest	02.42	26	1.15		
11.	Spatial relation and form constancy	Pretest	00.00	26	0.00	25	8.46**
		Posttest	01.96	26	1.18		
12.	Visual motor coordination	Pretest	01.23	26	0.82	25	9.19**
		Post test	02.69	26	0.62		

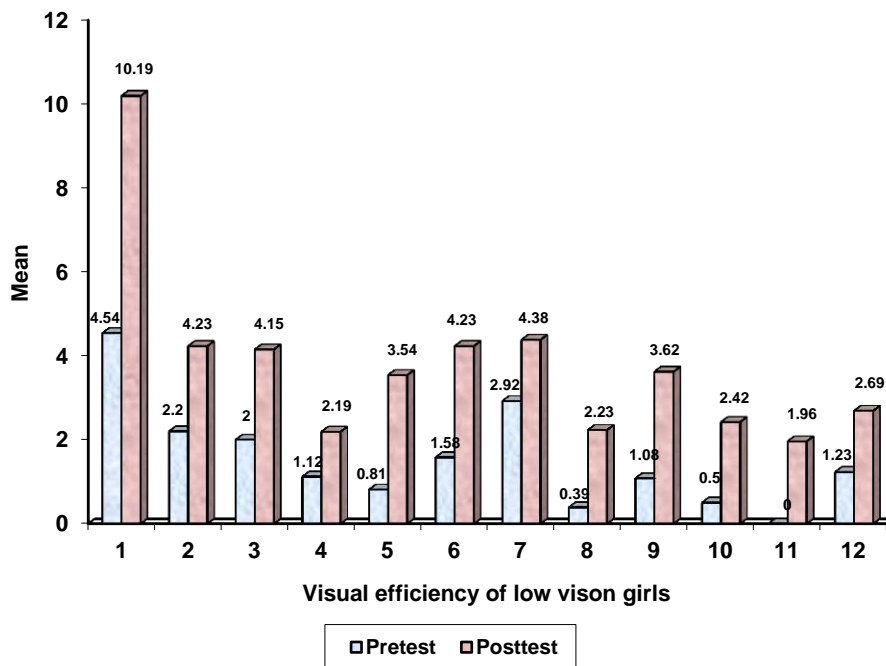
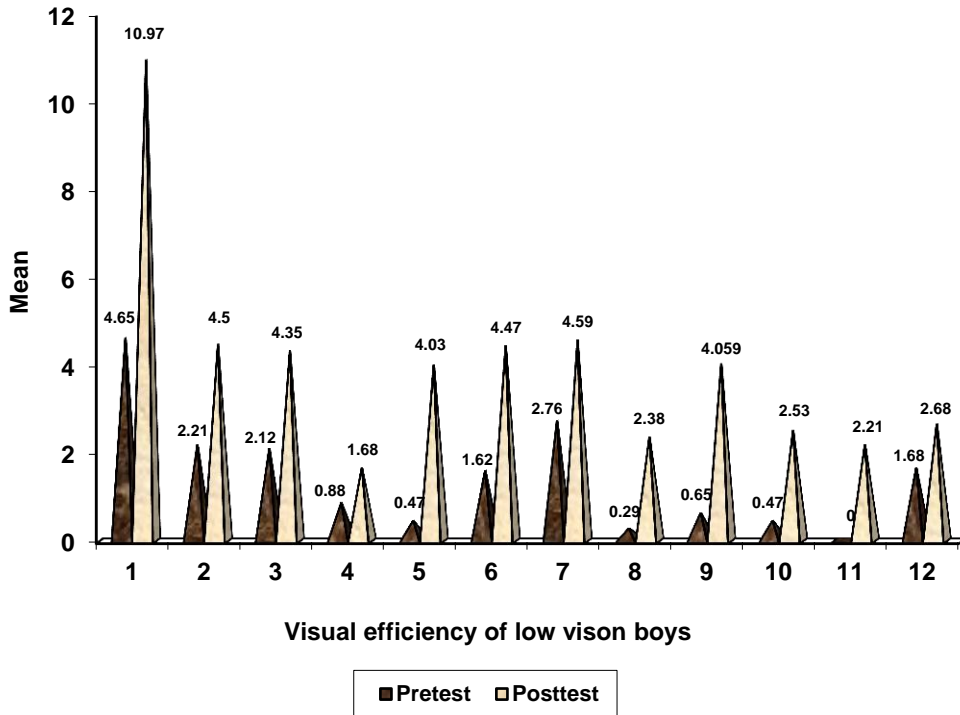
** Significant at 1% level

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of visual skills scores of

girls with low vision differed significantly. The calculated t-value is greater than the table value at is 2.79 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest scores are higher than the pretest mean scores. Hence the hypothesis “***there is no significant difference between the pretest and posttest mean scores of visual skills of low vision girls***” is rejected.

Figure No. 4.3

Analysis of pretest and posttest mean scores of visual efficiency of low vision boys & girls



- | | | |
|---------------------|---------------------------|---|
| 1. Visual awareness | 9. Visual tracking | 13. Visual memory |
| 2. Visual attention | 10. Visual scanning | 14. Visual closure |
| 3. Visual fixation | 11. Visual discrimination | 15. Spatial relation and form constancy |
| 4. Visual focusing | 12. Visual figure ground | 16. Visual motor coordination |

f. Analysis of pre and posttest mean scores of optical and perceptual visual skills of children with blurred vision

The 't' test was applied to find out significant difference in the pretest and posttest mean score of optical and perceptual visual skills of children with blurred vision. The results obtained are given in the table 4.7 and figure 4.4.

Table No. 4.7
Analysis of pre and posttest mean score of optical and perceptual visual skills of children with blurred vision

S. No	Visual Skill	Test	Mean	N	SD	Df	't'-Value
1.	Optical functioning	Pretest	13.69	45	4.48	44	17.08**
		Posttest	31.47	45	5.93		
2.	Perceptual functioning	Pretest	06.58	45	2.03	44	12.40 **
		Posttest	14.09	45	3.60		

** Significant at 1% level

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of optical visual functioning and perceptual visual functioning of children with blurred vision differed significantly. The calculated t- value is greater than the table value 2.69 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of optical and perceptual visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest mean scores are higher than the pretest mean scores. Hence the hypothesis "***there is no significant difference between the pretest and posttest mean scores of visual skills of optical visual functioning and perceptual visual functioning of children with blurred vision***" is rejected.

g. Analysis of pre and posttest mean scores of optical and perceptual visual skills of children with central vision loss

The 't' test was applied to find out significant difference in the pretest and posttest mean score of optical and perceptual visual skills of children with central vision loss. The results obtained are given in the table 4.8 and figure 4.4.

Table No. 4.8
Analysis of pre and posttest mean scores of optical and perceptual visual skills of children with central vision loss

S. No	Visual Skill	Test	Mean	N	SD	df	't'-Value
1.	Optical functioning	Pretest	06.00	7	3.74	6	5.20 **
		Posttest	27.86	7	8.75		
2.	Perceptual functioning	Pretest	02.86	7	2.67	6	5.33 **
		Posttest	12.57	7	3.51		

** Significant at 1% level

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of optical visual functioning and perceptual visual functioning of children with central vision loss differed significantly. The calculated t- value is greater than the table value 3.71 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of optical and perceptual visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest mean scores are higher than the pretest mean scores. Hence the hypothesis "***there is no significant difference between the pretest and posttest mean scores of visual skills of optical visual functioning and perceptual visual functioning of children with central vision loss***" is rejected.

h. Analysis of pre and posttest mean scores of optical and perceptual visual skills of children with peripheral vision loss

The 't' test was applied to find out significant difference in the pretest and posttest mean score of optical and perceptual visual skills of children with peripheral vision loss. The results obtained are given in the table 4.9 and figure 4.4.

Table No. 4.9
Analysis of pre and posttest mean score of optical and perceptual visual skills of children with peripheral vision loss

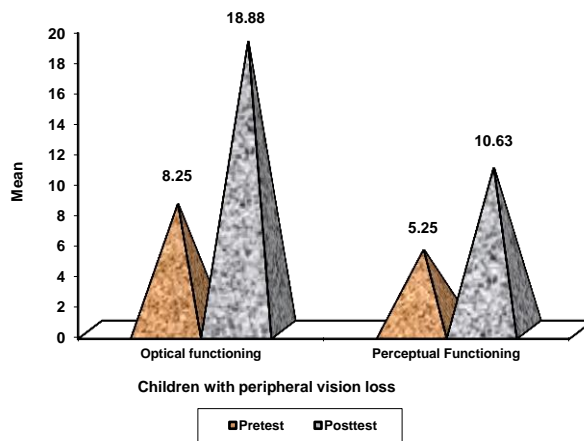
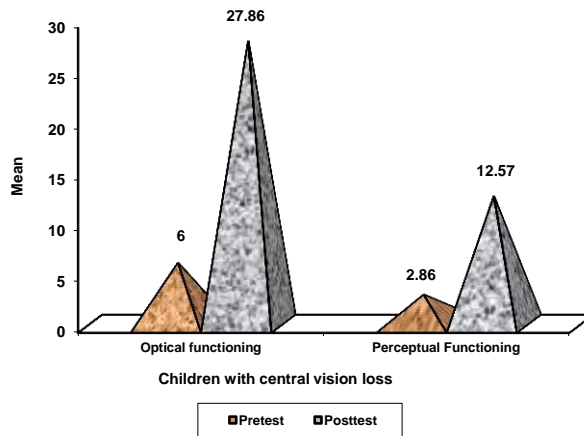
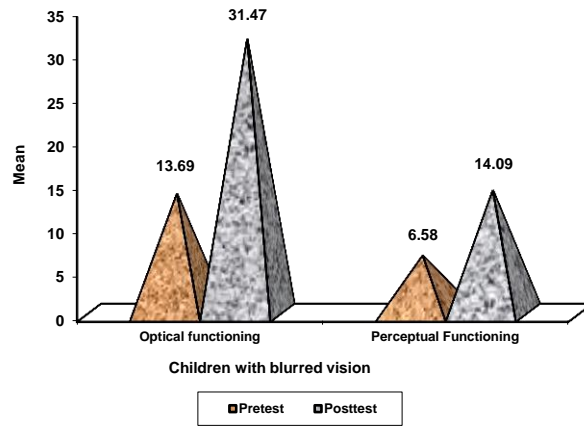
S. No	Visual Skill	Test	Mean	N	SD	df	't'-Value
1.	Optical functioning	Pretest	08.25	8	4.50	7	5.62**
		Posttest	18.88	8	7.30		
2.	Perceptual functioning	Pretest	05.25	8	3.24	7	4.45**
		Posttest	10.63	8	4.21		

**Significant at 1% level

With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of optical visual functioning and perceptual visual functioning of children with peripheral vision loss differed significantly. The calculated t- value is greater than the table value 3.50 at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of optical and perceptual visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest mean scores are higher than the pretest mean scores. Hence the hypothesis "***there is no significant difference between the pretest and posttest mean scores of visual skills of optical visual functioning and perceptual visual functioning of children with peripheral vision loss***" is rejected.

Figure 4.4

Analysis of pre and posttest mean scores of optical and perceptual visual skills of children with blurred vision, central vision loss and peripheral vision loss



i. Analysis of optical and perceptual visual functioning with respect to low vision boys and girls

The 't' test was applied to find out significant difference in the pretest and posttest mean scores of optical and perceptual visual functioning with respect to boys and girls with low vision. The results obtained are given in the table 4.10 and figure 4.5.

Table No. 4.10
Analysis of optical and perceptual visual functioning with respect to low vision boys and girls

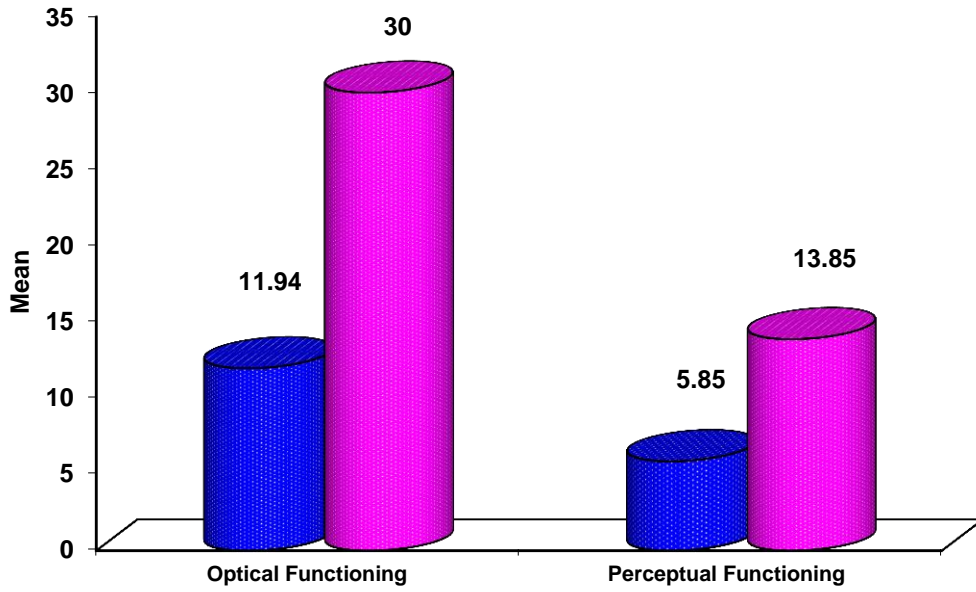
	Visual Skill	Test	Mean	N	SD	df	't'-Value
Boys	Optical functioning	Pretest	11.94	34	5.22	33	13.21 **
		Posttest	30.00	34	6.76		
	Perceptual functioning	Pretest	05.85	34	2.13	33	11.03 **
		Posttest	13.85	34	3.55		
Girls	Optical functioning	Pretest	12.23	26	5.29	25	10.88 **
		Posttest	28.54	26	8.79		
	Perceptual functioning	Pretest	06.12	26	3.06	25	08.60 **
		Posttest	12.92	26	4.14		

****Significant at 1% level**

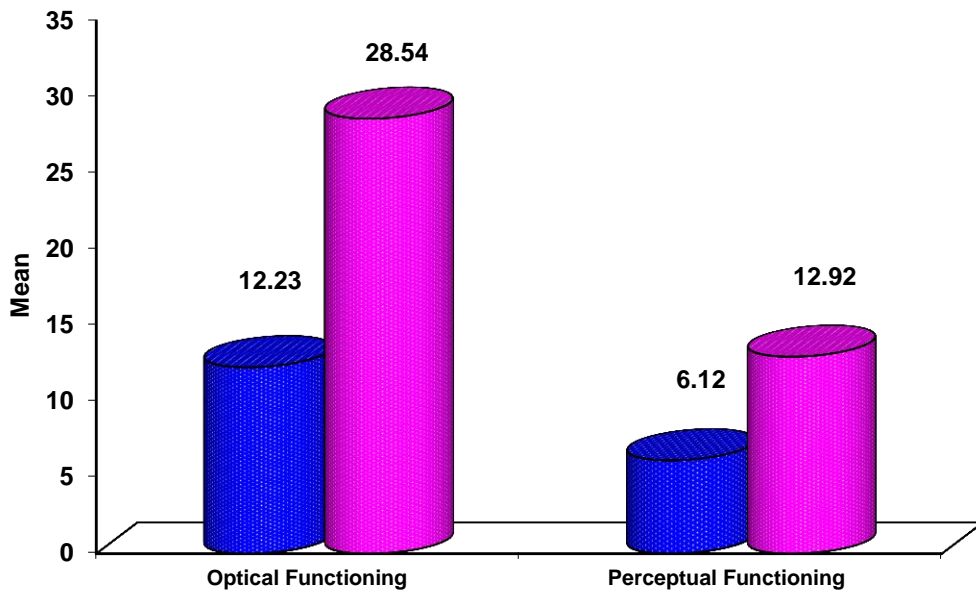
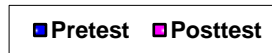
With reference to the above table, paired sample t-test was applied to find out whether the pre and posttest mean scores of optical visual functioning and perceptual visual functioning of children with peripheral vision loss differed significantly. The calculated t-value is greater than the table value 2.73 for boys and 2.79 for girls students at 1% level of significance. Hence, it is inferred that there is a significant difference between pre and posttest mean scores of optical and perceptual visual skills. Comparing the mean values obtained for the pre and post mean scores it is inferred that the posttest mean scores are higher than the pretest scores. Hence the hypothesis "***there is no significant difference between the pretest and posttest mean scores of visual skills of optical visual functioning and perceptual visual functioning with respect to low vision boys and girls***" is rejected.

Figure 4.5

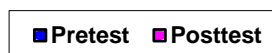
Analysis of optical and perceptual visual functioning with respect to low vision boys and girls



Low vision boys



Low vision girls



4.3.2 Multiple comparisons with respect to different variables (ANCOVA). Analysis of posttest mean scores of vision loss based on gender by using ANCOVA and comparison between three different visual loss using Scheffe's Test

The pretest and posttest mean scores of blurred, peripheral and central vision loss with regard to gender were analyzed by using ANCOVA along with adjusted posttest mean scores. The results are given in table 4.11.

a. Analysis of posttest mean scores of visual awareness

Table No.4.11

ANCOVA - Analysis of posttest mean scores of visual awareness

Source	Sum of Squares	Df	Mean Square	F-Value
Covariate-visual awareness score-pre	65.31	1	65.31	08.32 **
between groups	109.65	2	54.82	06.99**
between gender	9.49	1	9.42	01.20 Ns
groups vs gender	19.58	2	9.79	01.25 Ns
Error	415.98	53	7.85	
Total	619.93	59		

****Significant at 1% level Ns-Not Significant**

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis *“The posttest mean scores of visual awareness do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender”*.

To test the above three hypothesis, controlling the effect of pretest mean scores of visual awareness (co-variant) on posttest mean scores the ANCOVA result shows that, visual awareness pretest mean scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (8.32) is greater than the table value (7.1) at 1% level of significance.

The results further showed that the 'F' value comprising the 3 groups of vision loss (6.99) is greater than the table value (3.03). Hence, it is inferred that, the adjusted posttest mean scores of **visual awareness** differed significantly among the three groups of vision loss. Hence the hypothesis ***“The posttest mean scores of visual awareness do not differ significantly (1) between the three groups of vision loss”*** is rejected.

Gender wise, the calculated 'F' value was found to be 1.20 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis ***“Posttest mean scores of visual awareness do not differ significantly (2) between low vision boys and girls”*** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (1.25) was less than the table value of (3.17) . Hence the hypothesis ***“The posttest mean scores of visual awareness do not differ significantly (3) between Intervention of vision loss and gender”*** is accepted.

Table No. 4.12
Scheffe's comparisons between three different conditions of vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1)F 5%
				Blurred	Central	Peripheral	
Blurred	10.09	45	7.85		0.007	9.20	6.34*
Central	10.00	7				4.77	
Peripheral	6.83	8					

* Significant at 5% level

the three conditions of visual loss the mean scores of posttest were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F'

test comparing the adjusted means of blurred and central loss groups was 0.007 which is lesser than the critical value of 6 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 10 which is significantly higher than adjusted mean of peripheral group (9). Similarly, central group adjusted mean 10 is found significantly higher than the peripheral group of adjusted mean of 6.83.

b. Analysis of posttest mean scores of visual attention

Table No. 4.13

ANCOVA - Analysis of posttest mean scores of visual attention

Source	Sum of Squares	Df	Mean Square	F-Value
Covariate- visual attention-Pre	3.71	1	3.71	4.91*
Between groups	7.07	2	3.54	4.7*
Between gender	0.96	1	0.96	1.27 Ns
Groups vs gender	4.38	2	2.19	2.9 Ns
Error	40.06	53	0.766	
Total	56.18	59		

*Significant at 5% level Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of visual attention do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of visual attention (co-variant) of posttest mean scores the ANCOVA result shows that, visual attention pretest mean scores have

significant effect on the posttest mean scores. Since, the calculated 'F' value (4.91) is greater than the table value (4) at 1% level of significance.

The results further showed that the 'F' value comprising the 3 groups of vision loss (4.7) is greater than the table value (3). Hence, it is inferred that, the adjusted posttest mean scores of **visual attention** differed significantly among the three groups of vision loss. Hence the hypothesis **“The posttest mean scores of visual attention do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated 'F' value was found to be 1.3 which is less than the table value of 4. at 5% level of significance. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis **“Posttest mean scores of visual attention do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (2.9) was less than the table value of (3) at 5% level of significance. Hence the hypothesis **“The posttest mean scores of visual attention do not differ significantly (3) between Intervention of vision loss and gender”** is accepted.

Table No. 4.14
Scheffe's comparisons between three different conditions of visual loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1) F 5%
				Blurred	Central	Peripheral	
Blurred	4.59	45	0.76		3.09	8.52	6.34*
Central	3.96	7				0.62	
Peripheral	3.61	8					

* Significant at 5% level

The three conditions of vision loss mean scores of posttest were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest scores after removing the effect of pretest mean scores Scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 3.09 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 4.59 which is significantly higher than adjusted mean of peripheral group (8.5). Similarly, central group adjusted mean 3.96 is found significantly higher than the peripheral group of adjusted mean of 3.61.

c. Analysis of posttest mean scores of visual fixation

Table No. 4.15

ANCOVA - Analysis of posttest mean scores of visual fixation

Source	Sum of Squares	df	Mean Square	F-value
Covariate - visual fixation - Pre	6.23	1	6.23	5.6 *
Between groups	17.37	2	8.68	7.8**
Between gender	0.67	1	0.67	0.60Ns
Groups vs gender	2.41	2	1.20	1.08 Ns
Error	59.05	53	1.11	
Total	85.73	59		

*Significant at 5% level **Significant at 1% level Ns - Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of **visual fixation** do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effects of pretest mean scores of visual fixation (co-variant) on posttest mean scores. The ANCOVA result shows that, visual fixation pretest mean scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (5.6) is greater than the table value (4) at 1% level of significance.

The results further showed that the 'F' value comprising the 3 groups of vision loss (7.79) is greater than the table value (5.03). Hence, it is inferred that, the adjusted posttest mean scores of visual fixation differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual fixation do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated 'F' value was found to be 0.60 which is less than the table value of 4.02. Hence, the adjusted post test mean scores do not differ significantly between boys and with low vision. Hence, the hypothesis **“Posttest mean scores of visual fixation do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (1.08) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual fixation do not differ significantly (3) between Intervention of vision loss and gender”** is accepted.

Table No. 4.16
Scheffe's comparisons between three different conditions of vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1) F 5%
				Blurred	Central	Peripheral	
Blurred	4.34	45	1.11		0.04	16.07	6.34*
Central	4.42	7				9.73	
Peripheral	2.71	8					

* Significant at 5% level

The three conditions of vision loss mean scores of posttest were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 0.04 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 4.34 which is significantly higher than adjusted mean of peripheral group (16.07). Similarly, central group adjusted mean 4.42 is found significantly higher than the peripheral group of adjusted mean of 2.71.

d. Analysis of posttest mean scores of visual focusing

Table No. 4.17

ANCOVA - Analysis of posttest mean scores of visual focusing

Source	Sum of Squares	df	Mean Square	F-value
Covariate- visual focusing-Pre	13.22	1	13.22	17.31 **
Between groups	5.38	2	2.69	3.52 *
Between gender	1.76	1	1.76	2.30 Ns
Groups vs gender	2.56	2	1.28	1.68Ns
Error	40.48	53	0.76	
Total	63.40	59		

**** Significant at 1% level * significant at 5% level Ns- Not significant**

Analysis of Co- Variance (ANOVA) was applied to test the hypothesis "The posttest mean scores of visual focusing do not differ significantly (1) between the three groups of visual loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of visual focusing (co-variant) on posttest mean scores. The ANCOVA result showed that, visual focusing pretest mean scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (17.31) is greater than the table value (7.14) at 1% level of significance.

The results further showed that the 'F' value comprising the 3 groups of vision loss (3.52) is greater than the table value (3.17). Hence, it is inferred that, the adjusted posttest mean scores of visual focusing differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual focusing do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated 'F' value was found to be 2.30 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis **“Posttest mean scores of visual focusing do not differ significantly (2) between low vision boys and girls was accepted.**

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (1.68) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual focusing do not differ significantly (3) between Intervention of vision loss and gender”** is accepted.

Table No. 4.18
Scheffe's comparisons between three different conditions
of vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1) F 5%
				Blurred	Central	Peripheral	
Blurred	1.91	45	0.76		2.12	4.70	6.34*
Central	2.43	7				7.56	
Peripheral	1.19	8					

*Significant at 5% level

The three conditions of vision loss posttest mean scores were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 2.12 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 1.91 which is significantly higher than adjusted mean of peripheral group (4,70). Similarly, central group adjusted mean 2.43 is found significantly higher than the peripheral group of adjusted mean of 1.19.

e. Analysis of posttest mean scores of visual tracking

Table No. 4.19

ANCOVA - Analysis of posttest mean scores of visual tracking

Source	Sum of Squares	Df	Mean Square	F-value
Covariate- visual tracking -Pre	13.80	1	13.80	5.59 *
Between groups	34.79	2	17.40	7.04 **
Between gender	6.62	1	6.62	2.68 Ns
Groups vs gender	0.89	2	0.44	0.18 Ns
Error	130.90	53	2.47	
Total	186.98	59		

** Significant at 1% level * significant at 5% level Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of **visual tracking** do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of visual tracking (co-variant) on posttest mean scores. The ANCOVA result showed that, visual focusing pretest mean scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (5.59) is greater than the table value (4.02) at 1% level of significance.

The results further showed that the 'F' value comprising the 3 groups of vision loss (7.04) is greater than the table value (5.03). Hence, it is inferred that, the adjusted posttest mean scores of visual tracking differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual tracking do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated 'F' value was found to be 2.68 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between low vision boys and girls. Hence, the hypothesis **“Posttest mean scores of visual tracking do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (0.44) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual tracking do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.20
Scheffe's comparisons between three different conditions of vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1)F 5%
				Blurred	Central	Peripheral	
Blurred	4.10	45	2.47		0.05	14.36	6.34*
Central	3.97	7				6.96	
Pheripheral	1.82	8					

*Significant at 5% level

The three conditions of vision loss posttest mean scores were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 0.05 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 4.10 which is significantly higher than adjusted mean of peripheral group (14.36). Similarly, central group adjusted mean 3.97 is found significantly higher than the peripheral group of adjusted mean of 1.82.

f. Analysis of posttest mean scores of visual scanning

Table No. 4.21

ANCOVA - Analysis of posttest mean scores of visual scanning

Source	Sum of Squares	Df	Mean Square	F-value
Covariate – visual scanning –Pre	7.75	1	7.75	11.48 **
Between groups	20.67	2	10.33	15.29 **
Between gender	1.25	1	1.25	1.85 Ns
Groups vs gender	2.45	2	1.23	1.81 Ns
Error	35.81	53	0.68	
Total	67.93	59		

**** Significant at 1% level * significant at 5% level Ns- Not significant**

Analysis of Co- Variance (ANOVA) was applied to test the hypothesis "The posttest mean scores of **visual scanning** do not differ significantly (1) between the three groups of visual loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of visual scanning (co-variant) on posttest mean scores. The ANCOVA result showed that, visual focusing pretest mean scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (11.48) is greater than the table value (7.14) at 1% level of significance.

The results further showed that the 'F' value comprising the 3 groups of vision loss (15.29) is greater than the table value (5.03). Hence, it is inferred that, the adjusted posttest mean scores of visual scanning differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual scanning do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated 'F' value was found to be 1.85 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between low vision boys and girls. Hence, the hypothesis **“Posttest mean scores of visual scanning do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (1.81) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual scanning do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.22
Scheffe's comparisons between three different conditions of vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1) F 5%
				Blurred	Central	Peripheral	
Blurred	4.59	45	0.68		0.01	42.52	6.34
Central	4.55	7				22.47	
Peripheral	2.53	8					

*Significant at 5% level

The three conditions of vision loss posttest mean scores were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 0.01 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 4.59 which is significantly higher than adjusted mean of peripheral group (42.52). Similarly, central group adjusted mean 4.55 is found significantly higher than the peripheral group of adjusted mean of 2.53.

g. Analysis of posttest mean scores of visual discrimination

Table No. 4.23

ANCOVA - Analysis of posttest mean scores of visual discrimination

Source	Sum of Squares	df	Mean Square	F-value
Covariate- visual discrimination –Pre	7.08	1	7.08	10.51 **
Between groups	4.76	2	2.38	3.54 *
Between gender	1.38	1	1.38	2.05 Ns
Groups vs gender	4.12	2	2.06	3.06 Ns
Error	35.67	53	0.67	
Total	53.00	59		

** Significant at 1% level * significant at 5% level Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of **visual discrimination** do not differ significantly (1) between the three groups of vision loss (2)

between low vision boys and girls and (3) Intervention between vision loss and gender”.

To test the above three hypothesis controlling the effect of pretest mean scores of visual discrimination (co-variant) on posttest mean scores. The ANCOVA result shows that, visual focusing pretest mean scores have significant effect on the posttest mean scores. Since, the calculated ‘F’ value (10.51) is greater than the table value (7.14) at 1% level of significance.

The results further showed that the ‘F’ value comprising the 3 groups of vision loss (3.54) is greater than the table value (3.17). Hence, it is inferred that, the adjusted posttest mean scores of visual discrimination differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual discrimination do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated ‘F’ value was found to be 2.05 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis **“Posttest mean scores of visual discrimination do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated ‘F’ value (3.06) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual discrimination do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.24
Scheffe's comparisons between three different conditions of
vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1)F 5%
				Blurred	Central	Peripheral	
Blurred	4.29	45	0.67		2.31	6.46	6.34*
Central	4.79	7				9.46	
Peripheral	3.49	8					

* Significant at 5% level

The three conditions of visual loss posttest mean scores were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 2.31 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 4.29 which is significantly higher than adjusted mean of peripheral group (6.46). Similarly, central group adjusted mean 4.79 is found significantly higher than the peripheral group of adjusted mean of 3.49.

h. Analysis of posttest mean scores of visual figure ground discrimination

Table No. 4.25
ANCOVA - Analysis of posttest mean scores of visual figure ground discrimination

Source	Sum of Squares	Df	Mean Square	F-value
Covariate- visual figure ground discrimination –Pre	0.03	1	0.03	0.04 Ns
Between groups	9.77	2	4.89	5.19 **
Between gender	0.728	1	0.72	0.76 Ns
Groups vs gender	2.54	2	1.27	1.35 Ns
Error	49.93	53	0.94	
Total	62.98	59		

** Significant at 1% level * significant at 5% level Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis “The posttest mean scores of **visual figure ground discrimination** do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender”.

To test the above three hypothesis controlling the effect of pretest mean scores of visual figure ground discrimination (co-variant) on posttest mean scores. The ANCOVA result showed that, visual focusing pretest mean scores have no significant effect on the posttest mean scores. Since, the calculated ‘F’ value (0.04) is less than the table value (4.02).

The results further showed that the ‘F’ value comprising the 3 groups of vision loss (5.19) is greater than the table value (5.03). Hence, it is inferred that, the adjusted posttest mean scores of visual figure ground discrimination differed significantly among the three groups vision loss. Hence the hypothesis “**The posttest mean scores of visual figure ground**

discrimination do not differ significantly (1) between the three groups of vision loss” is rejected.

Gender wise, the calculated ‘F’ value was found to be 0.76 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between low vision boys and girls. Hence, the hypothesis **“Posttest mean scores of visual figure ground discrimination do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated ‘F’ value (1.35) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual figure ground discrimination do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.26

Scheffe’s comparisons between three different conditions of vision loss

Group	Adj. Mean	No.	Mse	Scheffe's-F test			(k-1) F 5%
				Blurred	Central	Peripheral	
Blurred	2.50	45	0.94		0.001	12.79	6.34 *
Central	2.49	7				6.94	
Peripheral	1.17	8					

***Significant at 5% level**

The three conditions of vision loss posttest mean scores were compared by taking any two groups and Scheffe’s ‘F’ test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe’s ‘F’ test comparing the adjusted means of blurred and central loss groups was 0.001 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 2.50 which is significantly higher than adjusted mean of peripheral group (12.79). Similarly, central group adjusted mean 2.49 is found significantly higher than the peripheral group of adjusted mean of 1.17.

i. Analysis of posttest mean scores of visual memory

Table No. 4.27

ANCOVA - Analysis of posttest mean scores of visual memory

Source	Sum of Squares	Df	Mean Square	F-value
Covariate- visual memory-Pre	0.38	1	0.38	0.26 Ns
Between groups	0.65	2	0.33	0.22 Ns
Between gender	3.20	1	3.20	2.14 Ns
Groups vs gender	7.42	2	3.71	2.48 Ns
Error	79.28	53	1.50	
Total	90.93	59		

Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of **visual memory** do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of visual memory (co-variant) on posttest mean scores. The ANCOVA result showed that, visual memory pretest mean scores have no significant effect on the posttest mean scores. Since, the calculated 'F' value (0.26) is lesser than the table value (4.02).

The results further show that the 'F' value comprising the 3 groups of vision loss (0.22) is lesser than the table value (3.17). Hence, it is inferred that, the adjusted posttest mean scores of visual memory do not differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual memory do not differ significantly (1) between the three groups of vision loss”** is accepted.

Gender wise, the calculated 'F' value was found to be 2.14 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis **“Posttest mean scores of visual memory do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (2.48) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual figure ground discrimination do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

j. Analysis of posttest mean scores of visual closure

Table No. 4.28

ANCOVA - Analysis of posttest mean scores of visual closure

Source	Sum of Squares	Df	Mean Square	F-value
Covariate- visual closure -Pre	0.29	1	0.29	0.26 Ns
Between groups	4.55	2	2.27	2.04 Ns
Between gender	0.35	1	0.35	0.31 Ns
Groups vs gender	0.74	2	0.37	0.33 Ns
Error	59.06	53	1.11	
Total	64.98	59		

Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis **“The posttest mean scores of visual closure do not differ**

significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender”.

To test the above three hypothesis controlling the effect of pretest mean scores of visual closure (co-variant) on posttest mean scores. The ANCOVA result showed that, visual closure pretest mean scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (0.26) is less than the table value (4.02).

The results further showed that the 'F' value comprising the 3 groups of vision loss (2.04) is lesser than the table value (3.17). Hence, it is inferred that, the adjusted posttest mean scores of visual closure do not differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of visual closure do not differ significantly (1) between the three groups of vision loss”** is accepted.

Gender wise, the calculated 'F' value was found to be 3.31 which is less than the table value of 4.02 at 5%. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis **“Posttest mean scores of visual closure do not differ significantly (2) between low vision boys and girls ”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (0.33) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual closure do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

k. Analysis of posttest mean scores of visual spatial relation and form constancy

Table No. 4.29

ANCOVA - Analysis of posttest mean scores of visual spatial relation and form constancy

Source	Sum of Squares	df	Mean Square	F-value
Between groups	14.02	2	7.01	6.38 **
Between gender	1.16	1	1.16	1.05 Ns
Groups vs gender	0.82	2	0.412	0.37 Ns
Error	59.40	54	1.10	
Total	75.40	59		

**** Significant at 1% level Ns- Not significant**

Analysis of Co- Variance (ANOVA) was applied to test the hypothesis “The posttest mean scores of **visual spatial relation and form constancy** do not differ significantly (1) between low vision boys and girls and (2) Intervention between vision loss and gender”.

The results showed that the ‘F’ value comprising the 3 groups of vision loss (6.38) is greater than the table value (5.02). Hence, it is inferred that, the adjusted posttest mean scores of visual spatial relation and form constancy differed significantly among the three groups vision loss. Hence the hypothesis “The posttest mean scores of **visual spatial relation and form constancy** do not differ significantly (1) between the three groups of vision loss” is rejected.

Gender wise, the calculated ‘F’ value was found to be 1.05 which is less than the table value of 4.02. Hence, the adjusted posttest scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis “**Posttest mean scores of visual spatial relation and form constancy do not differ significantly (2) between low vision boys and girls**” was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (0.37) was less than the table value of (3.17). Hence the hypothesis **“The posttest scores of visual spatial relation and form constancy do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.30
Scheffe's comparisons between three different conditions of vision loss

Group	Adj. Mean	No	Mean Square	Scheffe's-F test			(k-1)F 5%
				Blurred	Central	Peripheral	
Blurred	2.30	45	1.1		0.04	13.24	6.34
Central	2.21	7				6.42	
Peripheral	0.83	8					

*Significant at 5% level

The three conditions of vision loss posttest mean scores were compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores were found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 0.04 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 2.30 which is significantly higher than adjusted mean of peripheral group (13.24). Similarly, central group adjusted mean 2.21 is found significantly higher than the peripheral group of adjusted mean of 0.83.

I. Analysis of posttest mean scores of visual motor coordination

Table No. 4.31

ANCOVA - Analysis of posttest mean scores of visual motor coordination

Source	Sum of Squares	Df	Mean Square	F-value
Covariate- visual motor coordination- Pre	6.24	1	6.24	48.45 **
Between groups	6.93	2	3.47	26.91**
Between gender	0.23	1	0.23	1.81 Ns
Groups vs gender	0.76	2	0.38	2.94 Ns
Error	6.83	53	0.13	
Total	20.98	59		

** Significant at 1% level Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis “The posttest mean scores of **visual motor coordination** do not differ significantly (1) between the three groups of visual loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender”.

To test the above three hypothesis controlling the effect of pretest mean scores of visual coordination (co-variant) on posttest mean scores. The ANCOVA result showed that, visual closure pretest mean scores have significant effect on the posttest mean scores. Since, the calculated ‘F’ value (48.45) is greater than the table value (7.14) at 1% level of significance.

The results further showed that the ‘F’ value comprising the 3 groups of vision loss (26.91) is greater than the table value (5.03). Hence, it is inferred that, the adjusted posttest mean scores of visual coordination differed significantly among the three groups vision loss. Hence the hypothesis “**The posttest mean scores of visual motor coordination do not differ significantly (1) between the three groups of vision loss**” is rejected.

Gender wise, the calculated 'F' value was found to be 1.87 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between boys and girls with low vision. Hence, the hypothesis **“Posttest mean scores of visual motor coordination do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed no significant difference as the calculated 'F' value (2.94) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of visual motor coordination do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.32
Scheffe's comparisons between three different conditions of vision loss

Group	Adj. Mean	No.	Mean Square	Scheffe's-F test			(k-1) F 5%
				Blurred	Central	Peripheral	
Blurred	2.82	45	0.13		38.46	8.17	6.34*
Central	1.91	7				7.56	
Pheripheral	2.42	8					

*Significant at 5% level

The three conditions of visual loss posttest mean scores where compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference adjusted mean scores where found that the posttest mean scores after removing the effect of pretest mean scores scheffe's 'F' test comparing the adjusted means of blurred and central loss groups was 38.46 which is higher than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred

group's adjusted mean is 2.30 which is significantly higher than adjusted mean of peripheral group (13.24). Similarly, central group adjusted mean 2.21 is found significantly higher than the peripheral group of adjusted mean of 0.83.

m. Analysis of posttest mean scores of optical visual skills

Table No. 4.33
Analysis of posttest mean scores of optical visual skills
by using ANCOVA

Source	Sum of Squares	Df	Mean Square	F-Value
Covariate - Optical functioning	338.19	1	338.19	8.23 **
Between groups	792.15	2	396.07	9.64 **
Between Gender	45.07	1	45.07	1.10 Ns
Groups Vs Gender	119.77	2	59.88	1.46 Ns
Error	2178.76	53	41.11	
Total	3473.93	59		

** Significant at 1% level Ns- Not significant

Analysis of Co- Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of **optical visual skills** do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of optical visual skills (co-variant) on posttest mean scores. The ANCOVA result showed that, **optical visual skills** pretest scores have significant effect on the posttest mean scores. Since, the calculated 'F' value (8.23) is greater than the table value (7.10) at 1% level of significance.

The results further show that the 'F' value comprising the 3 groups of vision loss (9.64) is greater than the table value (4.99). Hence, it is inferred

that, the adjusted posttest mean scores of optical visual skills differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of optical vision skills do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated ‘F’ value was found to be 1.10 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between low vision boys and girls. Hence, the hypothesis **“Posttest mean scores of optical visual skills do not differ significantly (2) between low vision boys and girls”** was accepted.

The intervention effect between vision loss and gender showed that no significant difference as the calculated ‘F’ value (1.46) was less than the table value of (3.17). Hence the hypothesis **“The posttest mean scores of optical visual skills do not differ significantly (3) between intervention of vision loss and gender”** is accepted.

Table No. 4.34
Scheffe’s comparisons between three different conditions of vision loss

Group	Adj. Mean	No	Mean Square	Scheffe’s Test			(K-1) F 5%
				Blurred	Central	Peripheral	
Blurred	30.42	45	41.11		0.20	21.78	6.34*
Central	29.27	7				9.70	
Peripheral	18.94	8					

*Significant at 5% level

The three conditions of visual loss posttest scores where compared by taking any two groups and Scheffe’s ‘F’ test was applied to test the significant difference adjusted mean scores where found that the posttest scores after removing the effect of pretest mean scores scheffe’s ‘F’ test comparing the adjusted means of blurred and central loss groups was 0.20 which is lesser than the critical value of 6.34 at 5% level of significance.

Hence, it is inferred that the posttest mean scores of blurred and central vision loss do not differ significantly. However, it is found that difference between blurred and peripheral groups and central and peripheral groups were found to be significant at 5% level. This shows that blurred group's adjusted mean is 30.42 which is significantly higher than adjusted mean of peripheral group (21.78). Similarly, central group adjusted mean 29.27 is found significantly higher than the peripheral group of adjusted mean of 18.94.

n. Analysis of posttest mean scores of perceptual visual skills

Table No. 4.35
Analysis of posttest mean scores of perceptual visual skills by
using ANCOVA

Source	Sum of Squares	Df	Mean Square	F-value
Covariate - Optical functioning	32.45	1	32.45	2.39 Ns
Between groups	66.88	2	33.44	2.47 Ns
Between Gender	16.05	1	16.05	1.18 Ns
Groups Vs Gender	22.73	2	11.37	0.84 Ns
Error	718.74	53	13.56	
Total	856.85	59		

Ns - Not Significant

Analysis of Co-Variance (ANCOVA) was applied to test the hypothesis "The posttest mean scores of **perceptual visual skills** do not differ significantly (1) between the three groups of vision loss (2) between low vision boys and girls and (3) Intervention between vision loss and gender".

To test the above three hypothesis controlling the effect of pretest mean scores of perceptual visual skills (co-variant) on posttest mean scores. The ANCOVA result shows that, perceptual visual skills pretest mean scores

have significant effect on the posttest mean scores. Since, the calculated 'F' value (2.39) is lesser than the table value (4.02).

The results further showed that the 'F' value comprising the 3 groups of vision loss (2.47) is lesser than the table value (3.17). Hence, it is inferred that, the adjusted posttest mean scores of perceptual visual skills do differed significantly among the three groups vision loss. Hence the hypothesis **“The posttest mean scores of perceptual visual skills do not differ significantly (1) between the three groups of vision loss”** is rejected.

Gender wise, the calculated 'F' value was found to be 1.10 which is less than the table value of 4.02. Hence, the adjusted posttest mean scores do not differ significantly between low vision boys and girls. Hence, the hypothesis **“*Posttest mean scores of perceptual visual skills do not differ significantly (2) between low vision boys and girls*”** was accepted.

The intervention effect between vision loss and gender showed that no significant difference as the calculated 'F' value (1.46) was less than the table value of (3.17). Hence the ***hypothesis “The posttest mean scores of perceptual visual skills do not differ significantly (3) between intervention of vision loss and gender”*** is accepted.

Based on the results obtained the summary and findings are presented in the V chapter.