# SPECIMEN FORMAT FOR THESES OF MONTH

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|---|---|---|
| **Faculty** | : | Special Education |
| **Department** | : | Special Education |
| **Branch/ Area:** | : | Special Education |
| **Sub Subject Heading:** | : | Low vision |
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| **Title of the thesis** | : | Effect of Training Package on Developing Visual Skills of Children with Low Vision |
| (i) In Roman Script | | - |
| (ii) In roman Script | | - |
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**Abstract within 300 words:**

The main aim of the study is to find out the training strategies to improve the visual efficiency of low vision children among the selected children and to analyze the causes for low vision among the sample. Each eye disorder has educational implications. But these are not attached in the educational set up. Hence, an attempt is made to find out the different causes for Low Vision based on the medical report by the eye specialist and provided suitable optical and non optical devices to improve visual acuity and visual efficiency. This compilation may help a teacher to plan Individual Educational Plan (IEP) to enhance his / her learning. For the study the investigator selected 60 children with low vision.

**i) Major objectives** :

The objectives of the study were to:

1. Identify children with low vision using comprehensive vision assessment checklist.
2. Prepare and use visual efficiency training package to enhance visual skills of children with low vision.
3. Compare the difference between pre and posttests mean scores of visual skills of children with different vision loss viz. blurred vision, central vision loss and peripheral vision loss.
4. Find out the difference between the pre and posttests mean scores of visual skills with respect to optical and perceptual visual functioning skills.
5. Study the influence of Gender, age, type of vision loss and its interaction with respect to visual skills.
6. Create awareness to teachers and parents on the effective use of devices and materials for improving visual efficiency.

**ii) Hypothesis**:

1. There is no significant difference between pre and post test mean scores of visual skills with respect to blurred vision, central vision loss and peripheral vision loss.
2. There is no significant difference between pre and post test mean scores of visual skills with respect to blurred vision, central vision loss and peripheral vision loss.

3. There is no significant difference between pre and post test mean scores of visual skills with respect to age, gender and grade level.

## 4. **Methodology** :

***Site Description***

The sample was selected from **nine** inclusive primary schools under SSA programme in coimbatore educational district.

***Sample***

The sample consisted of children enrolled in grade I to V. A total of **60 children** were selected and among them **45** were children having **blurred vision**, **7** children with **central vision loss** and **8** with **peripheral vision loss.**

**Purposive sampling** technique was used to select the samples. The investigator explored the low vision children enrolled in the primary schools of 22 Blocks in Coimbatore educational district. Out of which 9 schools were selected using purposive sampling technique. The children having visual acuity less than 6/18 after correction, considering the WHO working definition were selected. This process was stretched up to 3 months and the final sample for the study consisted of 60 children with low vision of which **34 boys and 26 girls.**

The investigator carefully explored the inclusion of independent and dependent variables as presented under the table.

**Variables and its Level**

| S.No | Variable | Level |
|---|---|---|
| 1. | Gender | i. Boys<br>ii. Girls |
| 2. | Age group | i. 6-8 years<br>ii. 9-11 years |
| 3. | Grade level | i. I - V grade |
| 4. | Type of vision loss | i. Blurred vision<br>ii. Central vision loss<br>iii. Peripheral vision loss |
| 5. | Visual functioning | i. Optical<br>ii. Perceptual |

**Tools used for the Study**

Based on the objectives of the study, the investigator selected suitable tools such as;

**Personal data bank** was used to collect the information about the subjects such as name, age, gender, onset of blindness, visual acuity, field of vision and causes of low vision and the same personal data bank.

The **Functional vision assessment checklist** developed by Vijayan, P.andVictoria, G. (2006) was used to find out the visual efficiency of low vision children. The functional vision assessment checklist consisted of optical and perceptual visual skills consisted of 49 activities under 12 main areas of visual skills.

**Administration of Package and Data Collection Procedure**

The present study used quasi experimental design with pre and posttest without control group. The study was conducted in four phases. The flow chart 3.4 depicts administration of the test diagrammatically**.**

**Phase I- Personal data bank** was used to collect the personal data of the selected samples. Clinical assessment was done and certificate procured from ophthalmologist along with the prescription of low vision devices. The visual acuity of each child is recorded before and after correction for both near and distance vision.

**Phase II - Pretest data collection** - Pre testing was done to find out the functional skills of low vision children using the functional vision assessment checklist. After pretesting, the teachers were oriented how the visual efficiency training package needs to be used to develop appropriate functional vision skills among the children with low vision.

**Phase III - Administration of visual efficiency training package** -Visual efficiency training was given to each child individually. Care was taken to consider on the type of vision loss visual functioning, seating arrangement, lighting condition, colour, contrast back ground size, distance and position and organized the training programme. The training was given from 30 to 45 minutes per day for each child based on the visual abilities of the child for a duration of six months. The investigator sought the help of special teacher to assist in training and visited all schools on rotation and hence each school children were assisted at least thrice in a week.

**Phase IV - Posttest, data analysis and reporting -** After intervention the investigator used the same functional vision assessment check list to collect the posttest data.

## 5. Findings:

The findings covering the above categories are presented as follows:

1. There were total of 60 low vision students clinically certified as low visions (having visual acuity less than 6/18) were selected for the study.
2. Among 60 students 75% reported having blurred vision loss, 12% with central vision loss and 13 % children with peripheral vision loss. Hence it is found that the prevalence of blurred vision loss is higher than central vision loss and peripheral vision loss.
3. Among the sixty children with low vision, 56% were boys and the remaining 44% were girls. It was found that the prevalence of low vision among boys is higher than that of girls.
4. It was found that the highest percentage (45%) of children with low vision fall under the age group of 9 & 10 years than 22% between6-8 years and 35% between 11-12 years respectively
5. 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.
6. It is understood that 20% of students were belongs to Joint family system and 80% of them belongs to Nuclear family system.
7. While analyzing the marital status of parents it is found that the major cause of low vision i.e 75% due to consanguineous marriage.
8. 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.
9. The study reveals that the main causes of low vision was found to be (30%) lens disorder 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%).
10. Optical devices enhanced the visual acuity of students with blurred vision, central vision and peripheral vision loss. The prescribed Spectacles for Distant Vision (Spectacles), 78% students (47 students out of 60) were benefitted through spectacles which enhanced their visual acuity and it helped to improve their functional visual efficiency. Only 13 students (22%) were observed that there is no improvement or not benefitted with optical devices. These results were confirm by the study of Victoria, G. and Tyagi, S.K (2007) that low vision students on the whole benefited with the use of optical devices.

11. From the table it is clear that the visual acuity of low vision children were improved after refraction, 50% of them improved to 6/60<6/18, (mild low vision), 32% of them improved to 3/60<6/60 (moderate low vision) and 16% of them were reported with 1/60<3/60 (sever low vision) and 2% children improved to normal vision
12. The above table clearly indicates that 78% of children's vision was corrected with spectacles which promoted better visual acuity. The near vision devices helped 58% children performed better in near vision tasks.
13. With regard to near vision it is observed that, about 58% of them were benefitted through near vision devices (near vision spectacles, magnifiers) which enhanced their visual efficiency and with that they were able to perform the post tests effectively. Whereas 42% of them were not benefitted by near vision devices.
14. With reference to field of vision, Out of 60 students 43% of them field of vision were severely restricted, 52% of them having restricted field of vision and only 5% of students having normal field of vision.
15. Comparing the children with 3 types of vision loss, the children with blurred vision showed better performance in all visual tasks followed by central vision loss then peripheral vision loss.
16. Pertaining to optical and perceptual visual functioning, children secured higher score in optical functioning than perceptual functioning.
17. The study revealed that low vision skills such as visual closure, visual fixation and spatial relation and form constancy a majority of the children showed poor performance than other visual skills.
18. There is no effect of gender, age group and grade level on the visual skills of children with low vision.
19. The indigenous low vision kit was found to be effective in improving the visual skills of low vision children.
20. The training imparted to the special educators was helped to impart effective functional vision training to their respective low vision students.
21. It was found that the posttest mean scores of functional visual skills of low vision children with **blurred vision** have been significantly increased comparing with the mean scores in pretest. The calculated t- value is greater than the table value 2.69 at 1% level of significance pertaining to all visual skills.

22. It was found that the posttest mean scores of functional visual skills of children with **Central vision loss** have been significantly increased comparing with the mean scores in pretest. The calculated t-value is greater than the table value 3.71 at 1% level of significance pertaining to all visual skills.

23. It was found that the post mean scores of functional visual skills of children with **Peripheral vision loss** have been significantly increased comparing with the mean scores in pretest. The calculated t-value is greater than the table value 3.50 at 1% level of significance pertaining to all visual skills except the skill of visual focusing.

24. It was found that the posttest mean scores of functional visual skill of low vision boys have been significantly increased comparing with the mean scores in pretest. The calculated t- value is greater than the table value is 2.73 at 1% level of significance pertaining to all visual skills.

25. It was found that the posttest mean scores functional visual skills of low vision girls have been significantly increased comparing with the mean score in pretest. The calculated t- value is greater than the table value is 2.79 at 1% level of significance pertaining to all visual skills.

26. While referring the pre and posttest mean scores of optical visual functioning and perceptual visual functioning of children with **Blurred vision, Central vision loss and Peripheral vision loss** the calculated t-value is greater than the table value at 1% level of significance.

27. The ANCOVA source table indicates that the main effect gender has no statistical significance in the visual functioning. Both boys and girls showed approximately equivalent scores.

28. Based on the results of analysis of variance the posttest mean scores of three conditions of visual loss compared by taking any two groups and Scheffe's 'F' test was applied to test the significant difference in adjusted mean scores. It is inferred that the posttest scores of blurred and central vision loss do not differ significantly However, the difference between blurred and peripheral vision groups and central and peripheral vision groups were found to be significant at 5% level. This shows that blurred vision group's adjusted mean is 10 which is significantly higher than adjusted mean of peripheral group (9.20). Similarly, central vision group adjusted mean is 10 which found significantly higher than the peripheral vision group of adjusted mean 6.83.

29. Majority of the teachers viewed that visual efficiency training should be developed at the early years in a systematic way which will help the children to use their remaining vision better in their classroom and emphasized that the training to parents is essential because with the coordination of parents in the right time the visual skills could be developed.

30. The teachers expressed that the interaction of low vision children with non disabled children in the inclusive set up would positively improve their visual efficiency in an effective manner.

31. Teachers and students unanimously felt that the field trips to various places would facilitate in vision training through firsthand experience. It will help to develop visual efficiency by means of visual, auditory, and through tactual experience. This might have created an inhibition to understand naturally. Also they felt that the difficulty in relating time to distance is mostly because of the lack of real experience.

32. The important finding in the present study is that 100% of children with low vision were attending regular schools and the most commonly reported difficulties were related to their studying/reading habits like copying from the blackboard, reading textbook at arm's length, and writing along a straight line, differentiating pictures, to identify distance objects, assuming or measuring distance. It was interesting to observe that a statistically significant improvement occurred in the visual efficiency which was related to their academics, that is, there was a significant decrease in number of children who were unable to do their routine activities due to not able to use their remaining vision. This is a very important inference of the study since a timely intervention could help in maximizing their academic output.

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