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CONTENTS

ACADEMIC AND SOCIAL SKILLS OF VISUALLY IMPAIRED STUDENTS IN INCLUSIVE EDUCATION AT SECONDARY STAGE

** MS. D. NIRUPALINI ** DR. G. VICTORIA NAOMI*

Abstract:

Vision plays a vitally important role in both early developmental learning and academic learning. The purpose of the study is to investigate the performance of academic and social skills of Visually Impaired students studying in Secondary school. The study adopted descriptive survey method with 25 Visually impaired students studying in the Inclusive Education programme. The present study reflected students' special interests, abilities, goals, frustrations, barriers, and/or feelings that impacts future planning.

Introduction:

Vision is an integral part to standardized learning. Students who lack visual abilities often feel lost in a confusing educational maze. Communication and learning styles are significantly affected by vision loss, whether these losses or impairments are lifelong, intermittent, or increase over time. Most students with visual impairments are educated in inclusive settings and receive instruction from general education teachers. The students may also receive services from special education teachers and/or related service providers.

The Impact of Vision Loss on Learning :

Vision plays a vitally important role in both early developmental learning and academic learning (Day, 1997). One characteristic shared universally by children with VI is that they are limited in their ability to learn incidentally from their environment. Since vision is the primary sense through which a student would typically explore, organise, synthesise and integrate information about their environment, its absence or limitation significantly impacts upon a student's curiosity, exploration and information gathering ability. This reduced or sometimes inability to pick up visual cues makes students with VI susceptible to 'learned helplessness' whereby they exhibit passive and/or helpless behaviour (Seligman, 1991).

Consequently, VI may lead to students being delayed in other areas of development including cognitive, physical, emotional and neurological (Day, 1997) and to struggle in their attainment of key developmental milestones such as acquiring communication and social skills, attaining orientation, mobility and life skills, and understanding abstract ideas and concepts. For this reason, it is essential that students with VI are provided with opportunities for personal as well as academic development (NICHCY, 2004; Waldron et al, 2006).

This study attempted to analyze performance in the academic and social skills of Visually impaired students studying at Secondary level in Inclusive schooling.

Purpose :

The purpose of this study is to investigate the performance of academic and social skills of Visually impaired students studying in secondary school.

Objectives of the study :

- To find out the like and dislikes of students school environment.

- To analyze the subject preference in terms of academically capable and difficulty.
- To examine the social skill development of Visually impaired students.

Method

a. Site:

Descriptive survey method was adopted to collect data in the selected Inclusive schools at Kancheepuram and Thiruvanamalai District, Tamil Nadu, India.

b. Sample

The sample comprised of 25 visually impaired students studying from Grade IX to XII in the selected Inclusive schools.

c. Tool

Standardized assessment tool by Massachusetts, Department of Elementary and Secondary Education, Maiden to assess the academic and social skills of Visually impaired students. Permission to use the tool was approved for any research.

Results and Findings:

Table 1: Likes and Dislikes of Visually impaired students :

S. No.	Likes about the school environment (Items)	No.	%	Dislikes about the school environment (Items)	No.	%
1	Special teacher	14	56%	-Nil-	15	60%
2	Study programme	8	32%	Teachers do not tell while writing on black board	4	16%
3	Friends	3	12%	To be in class	4	16%
4				No ventilation in classroom	1	4%
5				School timing	1	4%

The table predicts that 56% of students like the availability of special teacher as the best aspect in the school. Sixteen percent of the students expressed dislike of teachers who do not simultaneously tell what they are writing on the black board.

Table 2: Subject preference

S. No.	Item	%
1	Easy subject	
	- English	28%
	- History	20%
	- Tamil (Regional language)	16%

	- Commerce	12%
	- Accounts	8%
	- All	8%
	- Science	4%
	- Economics	4%
2	Difficult subject	
	- Accounts	36%
	- English	28%
	- Maths	20%
	- Office management	8%
	- Nil	8%
3	Taking notes in class	
	- By listening	56%
	- Using slate & stylus	36%
	- Record	8%
4	School work	
	- By own	52%
	- With help	48%

The table indicates that 28% of students find English as the easy subject and 36% find Accounts a difficult subject. For taking notes in the class, 56% of students listens and 36% use slate and stylus. Another 48% of students do school work with help and 52% on their own.

Table 3: Social skill development

S. No.	Social skill component	%
1	Preference for fun	
	- Play with friends	56%
	- Chat with friends	32%
	- Singing	8%
	- Swimming	4%
2	Free time preference	
	- Play with friends	48%
	- Listen to music	28%
	- Watching TV	20%
	- Outing	4%

3	After finishing high school	
	- Go for job	76%
	- Study in college	24%
4	Spending time with siblings	
	- Play	52%
	- Chat	24%
	- Outing	24%

It is evident that 56% and 48% of students have fun and utilises free time by playing with friends. After finishing high school 76% want to go for job and 24% of students want to continue their higher studies by going to college. Fifty two percent of students spend time with their sibling by playing.

Conclusion:

It is essential that students with Visual impairment are provided with opportunities for personal as well as academic development. The present study reflected students' special interests, abilities, goals, frustrations, barriers, and/or feelings that impacts future planning. This study will assist teachers, school administrators and other school personnel to understand how a visual impairment affects a student's ability to function across all settings in the school environment. Understanding the "hidden" characteristics of a vision loss will enable non-vision specialists to facilitate meaningful inclusion and participation of students with visual impairments.

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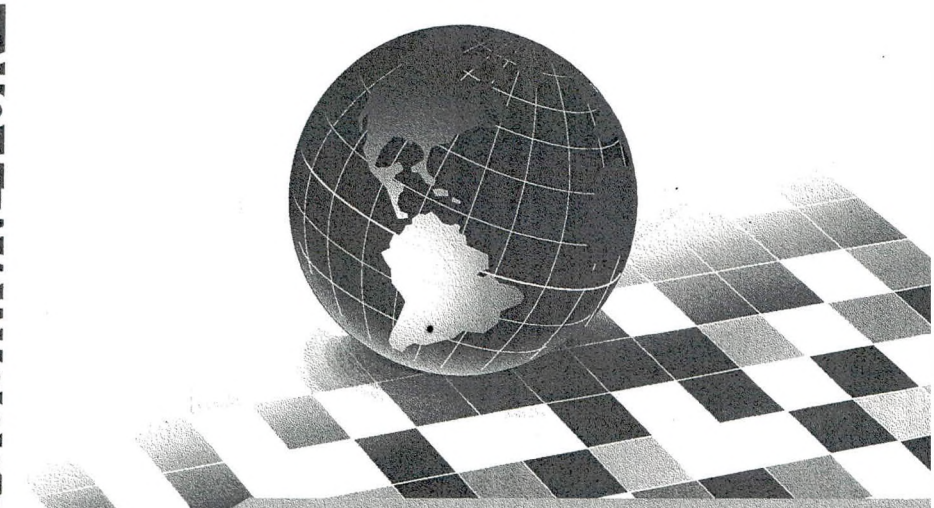

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Research Paper | Social Sciences

Application of Grade Ii Braille Among Visually Impaired Students Studying in Inclusive School

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ABSTRACT

Braille is the internationally recognized reading and writing system for the blind and partially sighted people. Braille is not a language, it is another way to read and write a language. Grade I Braille is typically used only by those who are new to learning the Grades of Braille. In Grade II Braille, a cell can represent a shortened form of a word. Many cell combinations have been created to represent common words. There are part-word contractions, in which a single cell represents an entire commonly, used word. For reducing space and increasing reading speed Grade II Braille should be used. Hence the study was conducted with the objectives of identifying English Braille readers in the inclusive schools and comparing the mean reading speed before and after introduction of Grade II Braille. Among the 35 students identified, only 10 students were reading English Braille. After two months intensive intervention, the students learnt the Grade II Braille and improved their reading speed and reduced their reading errors.

KEYWORDS : visual impairment, Braille, Grade I & II Braille, Braille

Introduction

Braille is the internationally recognized reading and writing system for the blind and partially sighted people. The system was founded in 1852 by Louis Braille (1809-1852), who lived in France and was himself blind. Louis Braille invented the Braille System, with which the alphabet as well as punctuation marks and numbers could be represented in a palpable form.

Braille is not a language, it is another way to read and write a language. Characters are represented by an arrangement of raised dots. Each Braille character or cell is made up of six dot positions, arranged in a rectangle comprising of two columns of three dots. A dot may be raised at any of the six positions to form many combinations. The positions are being universally numbered 1 through 3 from top to bottom on the left and 4 through 6 from top to bottom on the right.

Grade I Braille is typically used only by those who are new to learning the Grades of Braille and Grade II Braille takes place immediately after teaching the basics of Grade I Braille. In Grade II Braille, a cell can represent a shortened form of a word. Many cell combinations have been created to represent common words. Simon Ager (1998) Grade II, which consists of the 26 standard letters of the alphabet, punctuation and contractions. The contractions are employed to save space because a Braille page cannot fit as much text as a standard printed page. Books, signs in public places, menus, and most other Braille materials are written in Grade II Braille. Grade II Braille in total consists of 189 contractions.

Rationale for the study

The level of reading through Braille of visually impaired children should be up to the mark as against their normal peers.

According to Stephens (1989), "Braille has important symbolic significance in that it represents an assertion of quality between visually impaired and sighted persons with respect to written communication". Braille is every bit as print to their sighted peers.

In 1987 and 1988 the National Federation of the Blind and the American Council of the Blind adopted resolutions decrying the decline in Braille literacy and called for greater availability of Braille instruction for blind children (Jernigan, 1988; Stephens, 1989).

Saving space was one of the major reasons for the introduction of contracted Braille (Foulke, 1982; Irwin, 1970; Zickel & Hooper, 1957). The space-saving capacity of Braille is directly affected by the frequency with which contractions appear in written English, but little research has been done in this area either (Kederis, Siems, & Haynes, 1965), and none has been done in recent years (Durre, 1992). Hence for reducing/saving space and increasing reading speed Grade II Braille should be used. This study titled **"Application of Grade II Braille among Visually Impaired Students Studying at Inclusive School"** is an attempt intending to bring about Grade II Braille reading programme.

Objectives of the study

The objectives of the study were to:

- Explore the Braille Readers in the Inclusive School.
- Identify the English Braille Readers.
- Compare mean Grade II Braille Reading Speed before and after introducing of Grade II Braille.
- Compare mean Time Taken for Braille Reading before and after introducing of Grade II Braille.
- Compare mean Scores of Errors committed before and after introducing of Grade II Braille.
- Compile a Case Profile of English Braille Reader.

Hypothesis of the study

- There is no significant difference in the mean Grade II Braille Reading Speed before and after introducing of Grade II Braille.
- There is no significant difference in the mean Time Taken for Braille Reading before and after introducing of Grade II Braille.
- There is no significant difference in the mean Scores of Errors before and after introducing of Grade II Braille.

Method

a. Site description

The site selected for this study was Inclusive Schools at Coimbatore District, Tamil Nadu, India and they are:

1. Sri Avinashilingam Girls' Higher Secondary School, Coimbatore.
2. T.E.L.C Middle School, Coimbatore.
3. C.S.I Boys' Higher Secondary School, Coimbatore.

b. Sample selected for the study

- The sample selected had total absence of vision studying from Grades VIII to XI. The only criterion for the selection of the sample was that they should read English Braille at least in uncontracted form.
- The study explored five Inclusive Schools and identified 35 visually impaired students. Among them only 10 students were identified as English Braille Readers and hence these 10 students were selected as final sample for the study.

c. Design of the study

The present study adopted Case Study Method to examine the Braille

Reading Skills of the selected subjects. Braille Reading in terms of usage of Grade II Braille and Speed, Time Taken and Type of Errors committed was assessed before and after intervention.

d. Construction of the tool

The tools used for the study are as follows:

ii) Reading Speed Assessment Checklist

Reading Speed in terms of words per minute was assessed with the checklist. The Assessment Checklist included the details such as total number of words given, number of words read, time taken to complete reading the passage, and type of errors.

iii) Reading Passage

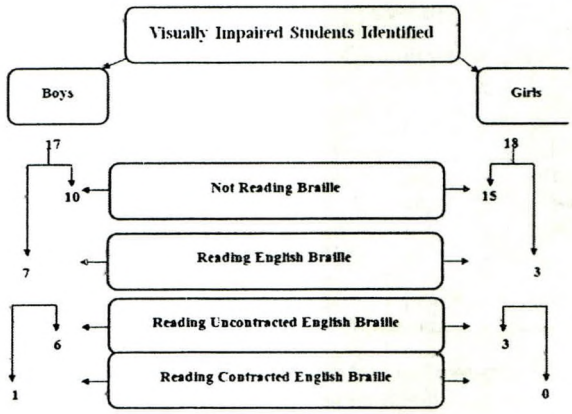
A passage consisting of 70 words was given to each student which included 49 contractions and without repetition of 24 contractions. The time taken to complete the passage was noted. The number of words that can be read by the student in one minute was calculated. The reading errors that included addition, omission, and regression while reading were noted. Scoring was calculated words per minute with the following formulae

$$\text{Words per minute} = \frac{\text{Total number of words read - Errors}}{\text{Time taken for reading}} \times 60\text{sec}$$

Results

Result: 1

The flow chart below shows the survey of visually impaired students in inclusive school and their English Braille reading status.



The following chart shows that among the 35 students only 10 students were reading English Braille with one student using contracted Braille.

Result : 2

The reading speed of 10 students before and after intervention was given in the following table.

Table 2 : Grade II Braille Reading Speed for All Subjects

S. No.	Subject	Words per Minute	
		Pretest	Posttest
1.	I	7.99	25.45
2.	II	5.75	19.33
3.	III	5.59	16
4.	IV	4.16	15.25
5.	V	5.5	15.5
6.	VI	5.5	15.5
7.	VII	5	13
8.	VIII	6	21.33
9.	IX	10	28.28
10.	X	4.66	13.59

It is evident from the above table that all the students showed improvement in reading after intervention .i.e. teaching the Grade II Braille.

Result : 3 - Reading Speed

Table 3: Mean, SD, df and t-value for Reading Speed per Minute

Testing	Mean	SD	df	t - value
Pretest	6.04	1.72	9	11.23**
Posttest	18.80	5.11	9	

***** Significant at 0.01 level***

It is evident that from the above table that the t-value for reading speed is11.23 which is significant at 0.01 level. It indicates that there is a significant difference between Pre and Posttest scores. In the light of this, the null hypothesis stated that there is no significant difference between Pre and Post scores is rejected. Therefore it is concluded that the visually impaired students showed improvements in their reading speed after introduction of contracted Braille (Grade II).

Result : 4 - Time taken for Reading.

Table 4: Mean, SD, df and t-value for Time Taken for Reading

Testing	Mean	SD	df	t - value
Pretest	4.60	0.84	9	4.86**
Posttest	3.58	0.98	9	

***** Significant at 0.01 level***

It is evident that from the above table that the t-value for time taken for reading is 4.86 which is significant at 0.01 level. It indicates that there is a significant difference between Pre and Posttest scores. In the light of this, the null hypothesis stated that there is no significant difference between Pre and Post scores is rejected. Therefore it is concluded that the visually impaired students showed improvements the reading time is reduced after introduction of Grade II Braille.

Result: 5- Reading errors while Braille reading.

Table 5: Mean, SD, df and t-value for Total Errors while Reading

Testing	Mean	SD	df	t - value
Pretest	43.30	5.74	9	23.99**
Posttest	5.60	3.47	9	

***** Significant at 0.01 level***

It is evident that from the above table that the t-value for total error is 23.99 which is significant at 0.01 level. It indicates that there is a significant difference between Pre and Posttest scores. In the light of this, the null hypothesis stated that there is no significant difference between Pre and Post scores is rejected. Therefore it is concluded that the visually impaired students showed decrease in their total error after introduction of contractions.

Case profile:

The case profile of the 10 students was complied in the study. A Case profile of a student is presented for reference.

Student - I

A. Background Information of the Subject

Age / Sex	:	12 years / Male
Class	:	VIII standard
Nature of Visual Impairment	:	Totally Blind
Onset of Visual Impairment	:	Acquired at the age of 7

B. Braille Reading Skill

Right index finger was used by the subject to read Braille material. He was using Braille for the past 4 years.

C. Mannerism of the Subject

No specific mannerism was found with him. He was very cool and relaxed while reading Braille material.

D. Usage of Contractions before Training

He got many prizes in Braille reading and writing. He knew a few standing alone contractions (for example, b- but, c- can) but not using it while writing.

E. Intervention

The investigator taught Grade II Braille to the subject. He was very eager to learn Braille contractions. So he learnt contractions with less difficulty.

F. Usage of Contraction after Training

He found easy to read Grade II Braille than to read Grade I Braille, because a word with contractions can be identified earlier than a word without contractions.

G. Reading Speed of the Subject

Before intervention, the subject was not able to read the passage with contraction. After intervention he was able to read. A paragraph with 70 words including 24 different contractions was given to the subject.

The Table below shows the Braille Reading Speed.

Table 8 : Grade II Braille Reading Speed

Words Given	Time taken		Type of Errors												Words per Minute	
			Addition		Substitution		Omission		Regression		Total					
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
70	4	2.45	-	-	2	-	33	-	3	-	38	-	7.99	25.45		

Findings

1. The study revealed that among the 35 visually impaired identified from standard VIII- XI, studying at various Inclusive schools, only 10 students were English Braille Readers.
2. It was found that the Reading words per minute in the Posttest was significantly higher (Mean= 18.80) than the Reading Speed on Pretest (Mean= 6.04).
3. There was a significant reduction in Reading Errors in the Posttest (Mean= 5.60) as compared to Reading Errors in Pretest (Mean= 43.3) indicating the impact of intervention.
4. It was found that the mean of Time Taken for Reading passage in the Pretest was 4.60 whereas it was reduced to 3.58 in the Posttest.
5. The individual case profile of 10 subjects revealed that there was a reduction in the time Taken for Reading Passage in the Post Reading Performance comparing with the Time Taken for Pre Reading Performance.

Conclusion

In this modern information age, questions have arisen about the continued importance of Braille codes as technology has increased accessibility to information for the blind individuals. As long as print is the primary literacy medium of sighted people, Braille will be the primary literacy medium for blind people. Hence Braille skills should be taught to visually impaired persons. As the study is a testimony that contracted Braille increases reading speed and certainly result in independence and equality as well as literacy.

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Research Paper

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Education

KEYWORDS : Visually impairment, Low vision, Eccentric Viewing, Central Paper S cotoma, Visual skills, Reading Speed.

Effectiveness of Low cost Devices for Evaluation and Training of Eccentric Viewing

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ABSTRACT

Low vision is a bilateral impairment to vision that significantly impairs the functioning of the person and cannot be adequately corrected with medical, surgical, therapy, conventional eye wear or contact lenses. Low vision is not blindness, which is the absence of useful vision. When the macula dies as a result of macular degeneration, the tissue dies so a spot on the retina becomes totally insensitive to light. The fovea right in the middle of the macula is only 20/20 vision in a normal eye. Since the fovea and macula are dead in macular degeneration pupils, when the eye is focused directly on the object to be seen, the light entering the eye is being focused on the dead tissue. Consequently, nothing is seen. By looking to the right or left of the object, so that the light entering the eye is focused on the retinal tissue right beside the macula but not directly on it, allows the peripheral vision to come into play. Hence training in eccentric viewing can prove effective to be discrete focus of fixation which utilizes intact retina adjacent to the retinal pathology. Central field loss requires utilization of peripheral vision. This study was an attempt to measure the central vision loss and training to view eccentrically using low cost devices and techniques. The study results revealed that the low cost devices proved the efficacy for evaluation of Eccentric Viewing and training in the use of peripheral vision resulting in improved reading speed.

Introduction

Low vision is a bilateral impairment to vision that significantly impairs the functioning of the person and cannot be adequately corrected with medical, surgical, therapy, conventional eye wear or contact lenses. It is often a loss of sharpness or acuity but may present as a loss of field of vision, light sensitivity, distorted vision or loss of contrast. Low vision is not blindness, which is the absence of useful vision.

Vision loss and implications

There are literally hundreds of different diseases that can cause visual impairment. Instead of trying to discuss the management of each separate eye diseases, one can look at the system of classification that is based on the functional consequences of that disease. The first concept to know is that every disease can be placed in one or more of three categories based on similarity of functional symptoms.

They are

- Diseases involving the optical media
- Diseases involving the macula and central vision
- Diseases involving the peripheral retina and visual pathways.

The symptoms of each category are different. Therefore vision rehabilitation is said to be symptom based. The relative importance of each component varies with functional category.

Central vision loss

The loss of central vision hinders the ability to perform tasks that involve fine details such as reading, sewing and wood-working. Because it affects the central retina, the peripheral retina remains functional. Therefore the individuals having this loss rely on their peripheral vision in order to see.

Eccentric viewing

When the macula dies as a result of macular degeneration, the tissue dies so a spot on the retina becomes totally insensitive to light. The fovea right in the middle of the macula is only 20/20 vision in a normal eye. It is the only truly sharp vision in 180 degree of vision. Because this is true, and has been true from infancy, when one wanted to see something, the eyes were turned to look directly at whatever one wanted to see. By looking to the right or left of the object, so that the light entering the eye is focused on the retinal tissue right beside the macula but not directly on it, allows the peripheral vision to come into play.

Some people can see best if they move their eyes high right and some see best when they look high left. Some see best when they look straight left or right. Each person must determine for himself which way is best.

Need of the study

According to World Health Organization (2004), there are about 37 million blind and 124 million individuals with low vision comprising total of 161 visually impaired individual's worldwide.

More than 90% of the world's visually impaired live in developing countries. One fourth of the world blind is living in India. Rough estimates suggest that there could be 0.75-1 million children with low vision in India.

Central field loss requires utilization of peripheral vision. In developed countries, the central field loss is diagnosed with sophisticated equipment. But such equipment is not available in our country. Since the children with central vision loss form a sizable population, they should be provided with compensatory viewing strategies. After evaluation of central Scotoma, training is required to employ functioning retina adjacent to the Scotoma. Of all the techniques and aids the macular children with central Scotoma needs to master, none comes higher on the list than Eccentric Viewing: i.e., not looking at what one wants to see. Hence the investigators selected the topic "Effectiveness of Low Cost Devices for Evaluation and Training of Eccentric Viewing".

Objectives

- To measure the Central Scotoma using Low Cost Devices and Tests
- To study the effect of treatment in terms of Functional Visual skills of pupils having central vision loss.
- To study the effect of treatment in terms of Reading Speed of pupils having central vision loss.

Hypotheses

- There is no significant difference on the performance of Functional Visual skills of pupils before and after training.
- There is no significant difference on the Reading Speed of pupils before and after training.

Method

Settings

The present study was conducted in the Inclusive Education for the Disabled in Coimbatore, Erode and Salem districts of Tamil Nadu. The schools were clustered in the main cities of these districts.

Sample

The sample chosen for the final study consisted of 30 pupils. The present study was experimental in nature. A stratified sampling was adopted to get homogeneous sample i.e. pupils having central vision loss. The sample by nature of its purpose consisted of 28 boys and two girls. The pupils were from Grade II - IX from different inclusive schools.

Design of the study

The investigator followed the single group experimental study which does not involve control group. As an experimental study the study planned activities for five Visual Functional skills and a Reading Programme.

Before administering the Pre and Posttests, the investigator evaluated the pupils of their Central Vision Loss and its types. This evaluation constituted a higher portion of the time.

The component items and the activities for the functional visual skills were borrowed from the Manual 'Teaching Low Vision children' by Vijayan, P. and Naomi, V. The Functional Visual skills components included Visual Fixation, Visual Focusing, Visual Tracking, Visual Scanning and Form Constancy.

Activities Presented for Functional skills

1. Visual Fixation

These activities included fixation of light / objects / person at the shorter and longer distance.

2. Visual Focusing

Visual focusing is converging eyes together to view. The activities included shifting gaze at short and longer distances, using both eyes to see an object / person and judging distance and depth perception.

3. Visual Tracking

Visual tracking is following the moving object. The visual skills assessed were tracking big and small object like rolling the ball. Activities were also provided for horizontal, vertical and circular tracking.

4. Visual Scanning

Visual scanning is searching for a particular. Scanning big and small objects, identifying details on objects and pictures were given to assess the skill.

5. Form Constancy

Form constancy is viewing the object at different angles while the object remains the same. Seeing object at different angles and positions, at longer and shorter distances were provided.

Reading programme

i) Selection of Content

The investigators designed the text borrowing a passage and edited with the help of a linguistic. The text had hundred words. Each sentence had three lines, an average of ten words per sentence. The text was prepared in varying font size from 8 to 16 font sizes.

ii) Construction of the tool

Observation schedule

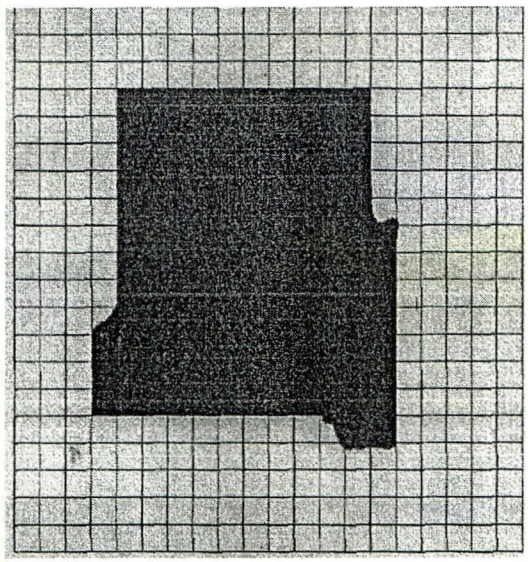
The investigators developed the Observation Schedule which includes test items such as eye contact and head position of the subjects during informal observation. There are three statements in that test and against each statement there was 3 point scale namely Routinely (R), Occasionally (O), and Never (N). The investigator administered the scale and response noted was recorded by 'Ö ' mark.

Assessment Check list

The Assessment Scale developed for measuring the Central Scotoma included six test items namely, (i) Position of head during visual acuity testing, (ii) Identification of object - above, below, left or right of the object. (iii) Identification of word - above, below, left or right of the word. (iv) Identification of clock hours - above, below, circular. (v) Central field restriction (vi) Peripheral field restriction. Against each statement there was 3 point scale namely Routinely (R), Occasionally (O), and Never (N). The investigator administered the scale and response noted was recorded by 'Ö ' mark.

Amsler Grid

This simple screening test named Amsler Grid developed by Marc Amsler (1945) is used to assess the center of the retina. The Amsler Grid consists of evenly spaced horizontal and vertical lines printed on black or white paper. A small dot is located in the center of the grid for fixation. While staring at the dot, the student looks for wavy lines and missing areas of the grid.



Central scotoma of the left eye of a student

Conduct of the study

The study has two aspects:

- Effectiveness of Low Cost Devices for Evaluation of Central Scotoma.
- Effectiveness of Low Cost Devices and Techniques for Training.

This study was conducted into two phases. During the first phase of the study, the evaluation of Central Scotoma was analyzed on the basis of qualitative analysis. During the second phase of the study, Pretest and Posttest scores were individually analyzed.

Results

Result : 1 **Evaluation of Eccentric Viewing through Observation**

The data in respect of Eccentric Viewing position were obtained with the help of Observation Schedule.

CONCLUSION

A Central Field Loss or Central Scotoma can significantly affect visual functioning. Once aware of the Scotoma, the students can be taught to position the Scotoma eye movements. This control can be achieved in a guided practice manner with a variety of targets. And this study stands as a testimony to it.

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Learning Enhancement through Collaborative Learning in Inclusive Schools

KEYWORDS: collaborative learning, Inclusive Education

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ABSTRACT *A variety of teaching strategies have been advocated for use in science and mathematics classroom, ranging from teacher-centered approach to more students-centered ones.(E Zakaria and Iksan, 2007). To minimize the competition and labeling effects among the students in a diverse classroom, the concept of Cooperative and Collaborative learning was aroused. Collaborative learning has been widely recognized as a significant educational paradigm for its promotion of student's achievement and collaborative skills (Slavin, 1995; Thousand, 1994). Collaborative learning has received increased attention to educate students with disabilities in the least restrictive environment children with disabilities brings social needs, as well as academic needs, which are not easily met in the regular classroom.The study was concluded that collaborative learning helped children to improve their learning.*

INTRODUCTION

In today's education system, teachers are expected to teach in a way that enables pupils to learn science and mathematics concepts while acquiring process skills, positive attitudes, values and problem solving skills. A variety of teaching strategies have been advocated for use in science and mathematics classroom, ranging from teacher-centered approach to more students-centered ones.(E Zakaria and Iksan, 2007)

To minimize the competition and labeling effects among the students in a diverse classroom, the concept of Cooperative and Collaborative learning was aroused. Collaborative learning has been widely recognized as a significant educational paradigm for its promotion of student's achievement and collaborative skills (Slavin, 1995; Thousand, 1994).

Collaborative group learning, however, reflects a much different paradigm of teaching and learning. It is grounded in *constructivism*, a psychological and philosophical perspective suggesting that individuals or groups, through their experiences, shape or construct what they learn and understand (Bruning, Schraw, & Ronning, 1995).

Students cooperate among themselves and with the teacher as they actively engage in the learning process and take ownership for their learning (Goodsell, Maher, & Tinto, 1992).

Research shows that collaborative learning compared to individual and competitive learning scenario brings students to a higher achievement level, raises their problem solving- abilities, offers cognitive advantages to learners and also has positive influences in enhancing the development of personality traits that are beneficial for future learning for future autonomous or co-operative learning and working (Tozer S. E. et.al. 1995; Webb, N. 1984; Bargh, J.A.; Schul, Y. 1980).

RATIONALE

Johnson & Johnson (1996) stated that low activity group students work harder when grouped with higher activity students. Group competition promotes cohesiveness among group members and group spirit.

Collaborative learning has received increased attention in recent years due to the movement to educate students with disabilities in the least restrictive environment children with disabilities brings social needs, as well as academic needs, which are not easily met in the regular classroom. the use of classroom collaborative or cooperative learning peer groups with cooperative goal structures is a promising alternative to better serve students with disabilities in a least restrictive environment.

This study suggests ways that the regular school classroom can be used to develop, implement, and monitor the effects of collaborative learning as necessary factor for the success of the inclusive programme

OBJECTIVES

Implement Collaborative Learning for science subjects among VI Grade children

Analyze the academic performance of children in Science subjects before and after introduction of Collaborative learning

METHOD

SAMPLE

The research study was implemented in inclusive schools under Sarva Shiksha Abiyan (SSA) in Coimbatore District. The Sample for this Experimental Study consisted of 30 children including 4 special needs children of VI Grade. The special need children include 3 visually impaired and one hearing impaired children.

Research Design

Quasi-experimental design was adopted in the Research study. The layout is as follows:

$R = Q_1 \times Q_2$

The Q1 and Q2 denote pretest and posttest respectively. Here x means treatment and R indicates randomization.

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IMPLEMENTATION OF COLLABORATIVE LEARNING

Pretesting: Children were assessed of their knowledge and concept skills of the Science subject prior to the implementation of Collaborative Learning.

Grouping: The students were grouped in such a way: one high achiever, a low achiever, two medium achiever, a disruptive student if any and a special need student. In this study a total of five groups were performed. The Collaborative learning ensures that all children in the group learning and it indirectly helps social skill development

Testing Tool: The tool had 15 objective type and 5 short answer questions taken from the lesson completed prior to the lesson taken for collaborative learning.

Implementation of Collaborative Learning: Introduction of a Science lesson *'Methods of Separation'* adopting collaborative learning method. This has taken 10 collaborate group learning session stretching for a month. The investigator was monitoring and facilitating learning while students were in collaborative learning.

Posttesting: the performance of children in the Science subject learnt through Collaborative learning was assessed using as the same procedure of pretesting

Results1

Table 1: Academic performance of children in Science subject

Variable	N	Mean	S.D	t value
Pretest	30	72.07	13.69	0.40**
Posttest	30	77.17	12.35	

**Significant at 0.01 level

It is evident from the above table that t-value for the p formance of children in the Science subject before after introduction of Collaborative learning is 0.40 wh is significant at 0.01 level. It indicates that there is a ference between pre and post scores of the children Science subject. Hence the null hypothesis stated as t there is no significant difference in the performance of ence subject before and after introduction of collabora learning is rejected. Hence it is concluded that collabo tive learning helped children to improve their learning.

Result 2

An analysis was made to find out the scores of spe need children while in they are in collaborative learni The following table presents the scores obtained in the and posttests.

Table 2: Performance of Children with special needs

No. Special Need Children	Pretest (Mean)	%	Posttest (Mean)	%
4	60	60	78	78

The above table presents that children with special n showed considerable improvement in th lear through collaborative learning. The result sta that pretest score was 60% whereas it was 78 % in the p test and thus indicating the effect of collaborative lear strategy facilitating better inclusion of children with sp needs

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THE COMPENSATORY SKILLS OF EXPANDED CORE CURRICULUM BY VISUALLY IMPAIRED STUDENTS IN INCLUSIVE SCHOOLS AT SECONDARY STAGE

*MS. D. NIRUPALINI **DR.G. VICTORIA NAOMI

Abstract:

The Expanded Core Curriculum addresses the knowledge and skills needed by students with visual impairments due to their unique disability and specific needs. Compensatory skills refer to the skills that students with visual impairments need to access all areas of the general education curriculum at levels that are commensurate with their sighted peers. The purpose of the study is to investigate the performance of visually impaired students studying at secondary level in their compensatory skills.

The study adopted survey method with 15 visually impaired students studying in the Inclusive Education programme. The result revealed that the students' performance in Braille, slate and stylus, use of tactile charts, graphs and maps, study and reference skills are upto their level. But the performance in the use of Nemeth code, Science Braille notation and operation of abacus needs to be improved demanding the attention of special teacher to impart the skills unique to visual impairment.

Introduction:

The Expanded Core Curriculum proposes that instruction for students with visual impairments should include all the traditional areas of academic instruction and instruction in areas that are directly affected by a child's visual impairment. The Expanded Core Curriculum, Carmel Willings (2014) addresses the knowledge and skills needed by students with visual impairments due to their unique disability and specific needs. First formulated by Hatlen (1996), the Expanded Core Curriculum (ECC) refers to the generally accepted nine areas of instruction that children and youths with visual impairments (both those who are blind and those with low vision), including those with additional impairments, need to be successful in school, the community, and the workplace.

Compensatory and Functional Academic Skills :

These are skills needed to access the regular curriculum presented in the regular classroom (i.e., compensatory skills), skills needed by students with multiple disabilities to enhance their ability to participate in home (i.e., functional skills), school and community, and an array of communication skills. "Communication needs of students with visual impairments will vary depending on the degree of functional vision, the effects of additional disabilities and the task to be done. Students may communicate through Braille, large print, print with the use of optical aids, regular print, tactile books, a calendar system, sign language, recorded materials or combinations of these means." (Hatlen, 1996).

Compensatory skills are the alternative way to access the core curriculum (National Agenda for the Education of Children and Youths with Visual Impairments, Including Those with Multiple Disabilities, Hatlen & Stryker, 1996).

Because of the methods and techniques used by specialized teachers of the visually impaired, there is virtually no curriculum or learning experience that sighted students receive, which cannot be adapted for a visually impaired learner (Pugh & Erin, 1999).

However, just because the core curriculum is required for all students and equal access is mandated, does not mean it is equitable for all students. By making something equitable, a "level playing field" must be established for all parties (Holmes, 1980). In order to obtain a level playing field, the instruction and content being presented and assessed must be common to all students (Stainback & Stainback, 1996).

For blind and visually impaired children, even modified concepts addressed in the core curriculum cannot fully be visualized or perceived. In order for these students to obtain equitable educational experiences, instruction cannot be limited to the core curriculum (National Agenda for the Education of Children and Youths with Visual Impairments, Including Those with Multiple Disabilities, Hatlen & Stryker, 1996). The study attempted to analyze the performance of Compensatory skills of visually impaired students studying at Secondary level in Inclusive schooling.

Purpose:

The purpose of the study was to investigate the performance of compensatory skills of visually impaired students studying at Secondary level in Inclusive Education.

Objectives of the study:

- To find out the learning status of compensatory skills acquired by the visually impaired students studying at Secondary level in Inclusive Education.
- To find out the level of performance in Compensatory skills with respect to Gender.

Method

a. Site

Descriptive survey method was adopted to collect data in the selected Inclusive schools at Coimbatore and Kancheepuram Districts, Tamil Nadu, India.

b. Sample

The sample comprised of 15 visually impaired students studying from Grade IX to XII in the selected Inclusive schools.

c. Tool

Inventory to assess Plus Curricular skills of Visual Impairment developed by Wendy Sapp & Iowa ECC Resource Team and Revised by Karen Blankenship, 2009, which has been adapted by the investigator suiting to the Indian context.

The tool consists of five major areas viz. Braille reading skills & fluency, slate & stylus, Nemeth code, Abacus, study & reference skills, use of charts, graphs & maps, and scientific notation. Assessment was done in terms of a)Completing the task b) Partial completion of task and c)Non performance and the corresponding score was '2', '1' & '0'

BR - Braille reading skills & fluency, SS - slate & stylus, Ne C - Nemeth code, A-Abacus, S&R skills - study & reference skills, Use of CGM - use of charts, graphs & maps, and SN - scientific notation

The above drawn graph describes the level of boys and girls in their performance in Compensatory skill. Though the t-test value indicates no significant difference in their compensatory skills, there is mean difference. Girls show better performance in Braille reading skills & fluency, slate & stylus and study reference skills than boys, whereas Boys showed better performance in Abacus and scientific notation.

Conclusion:

Students with visual impairments must be taught to use a variety of strategies and tools to access information, including visual, tactile, and auditory materials. Otherwise, these students will be unable to access the core curriculum and make academic progress. For visually impaired students to have equitable experience there must be specific instruction that expands beyond the core curriculum and its access through compensatory skills. Parents and teachers working together on areas in the expanded core curriculum will give students the skills and opportunity to be equal and build their capacity for a future with a full and independent life.

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Results and Findings:

Finding 1:

Table 1: Compensatory skill performance of visually impaired students

S. No.	Compensatory skills	Visually impaired students	
		Score	%
1	Braille reading skill & fluency	118	78.66
2	Slate & stylus	120	80
3	Nemeth code	41	27
4	Abacus	27	18
5	Study & referenced skill	109	72.66
6	Use of charts, graphs & maps	97	64.66
7	Scientific notation	6	4

The table predicts that the percentage of visually impaired students for Braille reading skill & fluency, Slate & stylus, Study & reference skill and Use of charts, graphs & maps are better compared to Nemeth code, operation of Abacus and Scientific notation.

Finding 2:

Table 2: Testing wise mean SD and t-value for compensatory skills with respect to Gender

Sex	Mean	SD	
Male (n=8)	36.85	19.40	**'t' value 1.18 Ns**
Female (n=7)	48.28	11.27	

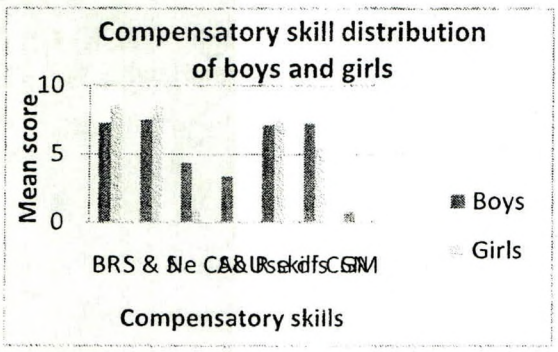
Ns - Not significant

From the above table it is evident that the t-value for Compensatory skills is 1.184 which is not significant. It means that there is no significant difference in male and female. Therefore it is concluded that both male and female were found to have Compensatory skills to the same extent.

Graph:

Column graph showing Compensatory skill distribution of Boys and Girls of visually

Impaired students:



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Orientation and Mobility Skills Among Visually Impaired Students in Inclusive Schools

Ms. D. Nirupalini* and Dr. G. Victoria Naomi**

Abstract

Orientation and Mobility skills involve in independent travel and the concepts that underlie spatial reasoning and navigation. Through orientation and mobility instruction, visually impaired persons have a systematic way not only to explore their environment, but also to learn to the greatest extent possible from the environment through which they are passing. The purpose of the study is to investigate the Orientation and mobility skills of visually impaired students studying at secondary level. The study adopted survey method with 25 visually impaired students studying in the Inclusive Education programme. The result revealed that protective, sighted guide and cane techniques have to be trained more in order to help the visually impaired students' to move safely and efficiently throughout their environment.

Keywords: Orientation & mobility skills among visually impaired students in Inclusive schools

INTRODUCTION

The expanded core curriculum is a curriculum designed to go beyond the core components-math reading and writing and address the essential areas and experiences that are unique only to visually impaired persons (Pugh & Erin, 1999). The expanded core curriculum is initially designed to construct community concept development for blind individuals (National Agenda for the Education of Children and Youth with visual Impairments, Including Those with Multiple Disabilities, Hatlen & Stryker, 1996). Orientation and mobility skill is one of the eight areas in expanded core curriculum.

Blind and sighted children do not have the same spatial and sensory understanding of their environments. This is partly due to the fact that a sighted child's conceptions of his environment are based on his observations and a blind child's conceptions of his environment are based on his ability to explore it (Baird & Goldie, 1979). If a visually impaired child is not able to explore his environment systematically, his perceptions about the world are limited and misconceived. Through orientation and mobility instruction (orientation meaning where a person is in the immediate environment and mobility meaning the ability to physically move and be safe (Hudson, 1997)), visually impaired persons have a systematic way not only to explore their environment, but also to learn to the greatest extent possible from the environment through which they are passing (Hatlen, 1996).

Instruction in Orientation and Mobility is ultimately to enable visually impaired persons to move purposefully in any environment, familiar or unfamiliar and to function safely, efficiently, gracefully and independently (Hill, 1986). Instruction in this area is valuable to the individual because it goes beyond

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the capabilities of getting from point A to point B. Instruction also has many intrinsic values including psychological, physical, social, economic and daily living skills (Hill, 1986). All of these areas are enhanced and facilitated through the independence that derives from appropriate orientation and mobility instruction.

PURPOSE

The purpose of the study was to investigate the orientation and mobility skills among visually impaired students studying at Secondary level in Inclusive Education.

Objectives of the Study

1. To find out the orientation and mobility skill of visually impaired students studying at Secondary level in Inclusive Education.
2. To find out the significant difference on orientation and mobility with respect to Gend

METHOD

A. Site

Descriptive survey method was adopted to collect data in the selected Inclusive schools a Cuddalore and Thiruvanamalai Districts, Tamil Nadu, India.

B. Sample

The sample comprised of 25 visually impaired students studying from Grades IX to XII in the selected Inclusive schools.

C. Tool

Inventory to assess Plus Curricular skills of Visual Impairment developed by Wendy Sapp Iowa ECC Resource Team and Revised by Karen Blankenship, 2009, which has been adapted b the investigator suiting to the Indian context.

The tool consists of the major area Protective technique, sighted guide and cane techniques Assessment was done in terms of a)Completing the task b) Partial completion of task and performance and the corresponding score was '2', '1' & '0'

Results and Findings

Finding 1:

Table-1: Orientation and Mobility Skill of Visually Impaired Students

S. No.	Technology	Visually impaired students	
		Score	%
1	Protective, sighted guide and cane techniques	107	42.8

The table predicts that the percentage of visually impaired students for Protective, sighted guide and cane techniques are less. Training in orientation and mobility skill has to be given to improve their performance in protective, sighted guide and cane techniques.

Finding 2

Table-2: Testing wise Mean, SD and T-value for Orientation and Mobility with Respect to Gender

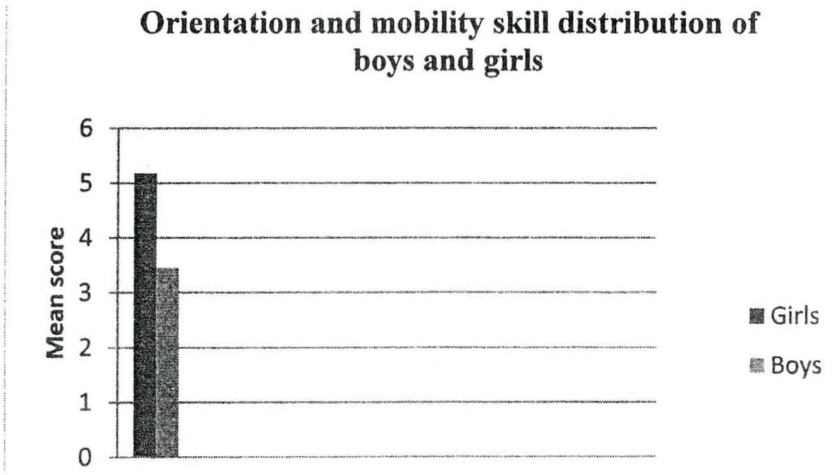
Sex	Mean	SD	't' value 1.87 Ns
Girls (n=12)	5.17	2.48	
Boys (n=13)	3.46	2.06	

Ns - Not significant

From the above table it is evident that the t-value for Orientation and mobility is 1.87 which is not significant. It means that there are no significant difference between visually impaired boys and girls. Therefore, it is concluded that both boys and girls were found to perform Orientation and mobility to the same extent.

Graph

Column Graph Showing Orientation & Mobility Skill Distribution of Boys and Girls of Visually Impaired Students



PSC – Protective, sighted guide and cane techniques

The above drawn graph describes the level of boys and girls in their performance in Orientation and mobility skill. Though the t-test value indicates no significant difference in their orientation and

mobility skill, there is mean difference. Girls show better performance in Protective, sighted guide and cane techniques than boys.

CONCLUSION

Specially prepared Orientation and mobility specialists are required to provide students with the experiences they need to develop O&M concepts and acquire O&M skills that will allow them to travel as independently as possible. The present study helped to analyse the performance of orientation and mobility skill among visually impaired students in selected inclusive schools at Secondary stage. The study revealed that protective, sighted guide and cane techniques have to be trained more in order to help the visually impaired student's to move safely and efficiently throughout their environment.

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