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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

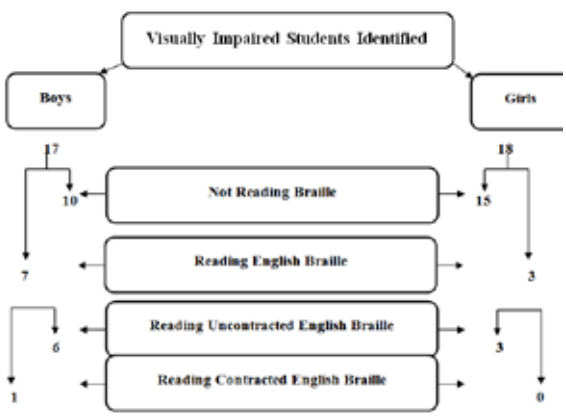
A passage consisting of 70 words was given to each student which included 49 contractions and without repetition of 24 contractions. The time taken to complete the passage was noted. The number of words that can be read by the student in one minute was calculated. The reading errors that included addition,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