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Research Article

Learning Medium for Students with Visual Impairment

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Abstract

Students with Visual impairment benefit from building a strong foundation of literacy skills during their preschool years, a goal that is often more challenging for young Braille readers who lack access to the incidental learning readily absorbed by typically sighted children. Braille remains the main medium of communication for persons who are blind. The Disability Act of 2003, USA on its part stipulated that Learning Institutions should take into account the special needs for persons with disabilities with respect to the entry requirements, pass marks, curriculum, examinations, auxiliary services, use of school facilities, class schedules and other similar considerations. The Act also emphasized that provisions should be made in all parts of the country for an integrated system of special and non formal education for persons with all forms of disabilities. It also proposed for the establishment where possible of Braille and recorded libraries for persons with visual impairments. Keeping these points in view an attempt was done to know the Braille literacy medium for students with visual impairment. The objectives of the study were to examine the learning medium of students with visual impairment in Inclusive and Special schools and to find out the appropriate educational devices used by visually impaired students .Survey method was used to gather the details. The study was carried out with Ninety four students with visual impairment and thirty five special teachers. Qualitative analysis was done to analyze the learning medium for students with visual impairment. Results revealed that majority of the samples(77.66%) were students with Low vision than totally blind students(22.34% . The study revealed that students with visual impairment use book print ,print& audio ,reader service, digital/recorded books , audio tapes/speech input, large print with/without the aid of magnifiers as their learning medium. Nearly 52.38% of21 totally visually impaired students used Braille as learning medium.

Introduction

Learning medium presents multiple challenges for teachers of students with visual impairments , classroom teachers, educational assistants, students' with visual impairments, and for their family members. As the braille code has evolved over the years so does the instructional braille method. The choice of instructional braille method depends on several factors, for example the degree of vision loss, learning styles, needs, and capabilities of students with visual impairments so does the instructional braille method.

Martos (2006) noted that literacy skills are equally important for people with visual impairments. According to the National Braille Press, Boston "there is no substitute for the ability to read other than braille. For people who are blind, braille is an essential tool that aids in the process of becoming literate.

Learning braille also develops self-confidence among students' as they acquire new skills. As students with low vision are encouraged to scribble on paper to practise their

writing skills, young students who learn braille should also be encouraged to scribble on their braille writer, imitating the braille writing.

Students with Low vision use low vision devices such as magnifiers, monoculars, telescopes, and video magnifiers to enhance their ability to read and write visually.

Need for the Study

Learning medium of totally vision impaired persons is obviously braille though technology play a role to deprive visually impaired persons using Braille. But Braille cannot be substituted by any other mode of learning. Braille is an essential component of any educational program serving students who are visually impaired. Students with total blindness may learn better through a tactile mode and thus braille may be recommended, while students with low vision have sufficient vision to learn to read print. Still others may benefit from dual media, in which they learn both print and braille. Hence an attempt was made in this study to find out the learning medium of students with blindness and Low vision.

The objectives of the study were to

1. examine the learning medium of students with visual impairment in Inclusive and Special schools
2. find out the appropriate educational devices used by visually impaired students in Inclusive and Special schools

Method of Study

Survey method was used to gather the details of learning medium of students with visual impairment .The Special teachers working for the students with visual impairment were used to collect the data.. There were Ninety four students with visual impairment under these 35 special teachers at primary, secondary and higher secondary levels. The students and teachers were from Coimbatore ,Erode ,Salem, Tirupur, Karur and Dharmapuri districts of Tamil Nadu, India. Questionnaire was prepared to get the demographic details of the students with visual impairment and special teachers. In addition a check list with twelve Yes/No statements was used to examine the learning medium of student with visual impairment .

Analysis and Interpretation

The sample comprised of twenty one students with total blindness and seventy three students with Low Vision. Qualitative Analysis were used and tabulated as follows.
The findings of the study is discussed as follows

1.Demographic details of students with visual impairment.

Table 1: Details of the students with Visual Impairment

Variables	Type	Totally Blind(n=21)	%	Low Vision (n=73)	%
Gender	Boys	6	28.57	32	43.84
	Girls	15	71.43	41	56.16
Class	Primary	6	28.57	7	9.59
	Secondary	14	66.67	55	75.34
	Higher secondary	1	4.76	11	15.07
Locality	Rural	10	47.62	38	52.05
	Urban	11	52.38	33	45.21

Type of residence	Day scholar	9	42.86	63	86.30
	Hostel	12	57.14	10	13.70
Type of school	Inclusive	11	52.38	73	100.00
	Special	10	47.62	0	0.00
Academic achievement	Good	16	76.19	65	89.04
	Average	5	23.81	8	34.78

It can be discussed from the above table that a majority of the students (77.66%) were students with Low vision than totally blind students(22.34%). Among the students with total blindness, girls were comparatively more (71.43%) when compared to boys with total blindness(28.57%). Among the students with Low vision girls (56.16%) were comparatively more than boys with low vision (43.84%).

A majority of the students with Low vision (75.34%)and totally blind students(66.67) belonged to secondary level. Students with total blindness at primary level were28.57% and more when compared to students with low vision(9.57%)and at higher secondary level, the students with low vision were more(15.07%) compared to students with total blindness(4.76%)

There were equal percentage of distribution of the samples in urban(49.79%) and rural areas(49.83%).

A majority of the students with Low vision were day scholars (86.30)as against totally blind students (57.14)who stayed in hostel. All the students with low vision were in the inclusive school set up and 52.38% of students with total blindness were in special schools.

A majority of the students with low vision were good in their academic performance (89.04%) than students with total blindness(76.19) and only 35percent of the students with low vision were average in their studies compared to students with total blindness(23.81)

2. Details of Resource teachers

Table 2: Details of Teachers (N=35)

Variables	Type	Response	Percentage
Gender	Male	0	0
	Female	35	100.00
Class handled	Primary	5	14.29
	High school	20	57.14
	Higher secondary	15	42.86
Number of students	Totally blind	10	28.57
	Low vision	25	71.42
Years of experience	1-5	3	8.57
	6-10	8	22.86
	11-15	14	40.00
	16-20	10	28.57
Qualification	B.a/b. Sc	2	5.71
	M.a/m. Sc	3	8.57
	B.a/b. Sc with b. Ed	28	80.00
	M.a/m. Sc with m. Ed	2	5.71
	Diploma	0	0.00
Income	20,000-25,000	35	100.00
Rci registered		30	85.71

Cent percent of the resource teachers were female teachers. More than fifty percent of the teachers handled students at high school level and 42.86% of teachers handled students at

higher secondary level. The majority of the teachers (71.42%) handled students with low vision than students with total blindness(28.57%).

Forty percent of the teachers had 11-15 years of teaching experience followed by teachers with 16-20 years and 22.86% of teachers with 6-10years of teaching experience. About 80% of teachers were undergraduates with B Ed and few were Post graduates. Above 80% of the teachers were registered with RCI. Cent percent of the teachers had an income of Rs 20,000-25,000.

3. Learning Medium of Students with Visual Iimpairment

The study comprised of 94 students with visual impairment of which 13 students were at the primary level,69 students were at the secondary level and 12 students were at the Higher secondary level.

Table 3: Learning Medium of Students with Visual Impairment

S. N	Learning medium	Primary(N=13)				Secondary(N=69)				Higher secondary(N=12)			
		T.B N=6	%	N=7	%	T.B N=14	%	L.V N=55	%	N=1	%	L.V N=11	%
1	Braille	3	50	-	-	7	50	-	-	1	100	-	-
2	Large Print with aid of magnifiers	-	-	3	42.85	-	-	20	36.36	-	-	4	33.33
3	Large Print without aid of magnifiers	-	-	4	57.14	-	-	35	63.63	-	-	7	58.33
4	Book Print	-	-	7	100	-	-	55	100	-	-	11	100
5	Braille &Print	3	50	-		-	-	-	-	-	-	-	-
6	Braille &Audio	3	50	-		7	50	-	-	1	100	-	-
7	Print &Audio	-	-	7	100	-	-	55	100	-	-	-	-
8	Reader service	6	100	7	100	14	100	55	100	1	100	11	100
9	Computer with large character display	-	-	-	-	-	-	20	36.36	-	-	2	16.66
10	Computer with voice synthesis	-	-	-	-	-	-	10	18.18	-	-	4	33.33
11	Digital/recorded books	6	100	7	100	14	100	30	54.54	1	100	11	100
12	Audio tapes/speech input	6	100	7	100	14	100	45	81.81	1	100	11	100

It can be interpreted from the above table that all the students with total blindness at the primary used reader service, digital/recorded books and audio tapes/speech input. About 57% percent of them used braille & print and Braille& audio .Only 33.33 percent of the totally blind students were using Braille at the primary school level.

Cent percent of the totally blind students at the secondary level used reader service, digital/recorded books and audio tapes/speech input followed by fifty percent of them used Braille and Braille &Audio. It was alarming to note that none of the students at primary and secondary level used Computer with large character display and Computer with voice synthesis. cent percent of the totally blind students at the higher secondary level used Braille, reader service, digital/recorded books and audio tapes/speech input.

Cent percent of the students with Low vision at the primary level used book print ,print& audio ,reader service, digital/recorded books and audio tapes/speech input. Around 57percent of students with Low vision at the secondary level used Large Print without aid of magnifiers and42 percent of them used Large Print with the aid of magnifiers. Cent percent of the students with Low vision at the secondary level used book print ,print& audio and reader service, .Around 63.63 percent of students with Low vision at the secondary level used Large Print without aid of magnifiers and36.36 percent of them used Large Print with the aid of magnifiers.

Approximately eighty one percent of the students with low vision used audio tapes/speech input and 54.54 used digital/recorded books. Less than forty percent of the students with Low vision used computers as their literacy medium. . Cent percent of the students with Low vision at the higher secondary level used book print ,print& audio reader service, audio tapes/speech input and digital/recorded books. .Around 58.33 percent of students with Low vision at the secondary level used Large Print without aid of magnifiers and33.33percent of them used Large Print with the aid of magnifiers. Less than forty percent of the students with Low vision used computers as their literacy medium.

Results and Findings

The major results and findings of the study are as follows:

1. A majority of the students(77.66%) were students with Low vision than totally blind students(22.34%). Among the students with total blindness ,girls were comparatively more (71.43%) when compared to boys with total blindness(28.57%). The students with Low vision girls (56.16%)were comparatively more when compared to boys with low vision (43.84%).
2. A majority of the students with Low vision (75.34%)and totally blind students(66.67) belonged to secondary level. Students with total blindness at primary level were28.57% and more when compared to students with low vision(9.57%)and at higher secondary level the students with low vision were more(15.07%) compared to students with total blindness(4.76%)
3. All the Special teachers were female teachers. More than fifty percent of the teachers handled students at high school level and 42.86% of teachers handled students at higher secondary level. The majority of the teachers(71.42%) handled students with low vision than students with total blindness(28.57%).Forty percent of the teachers had 11-15 years of teaching experience followed by teachers with 16-20 years and 22.86% of teachers with 6-10years of teaching experience.
4. Cent percent of the students with blindness at the secondary level used reader service, digital/recorded books . It was alarming to note that none of the students at primary and secondary level used Computer with large character display and Computer with voice synthesis audio tapes/speech input followed by fifty percent of them used Braille and Braille &Audio. cent percent of the totally blind students at the higher secondary level used Braille ,reader service, digital/recorded books and audio tapes/speech input.
5. Cent percent of the students with Low vision at the primary level used book print , print& audio ,reader service, digital/recorded books and audio tapes/speech input. Around 63.63 percent of students with Low vision at the secondary level used large print without aid of magnifiers and36.36 percent of them used Large Print with the aid of magnifiers.

Conclusion

The study revealed that students with visual impairment use book print ,print& audio ,reader service, digital/recorded books , audio tapes/speech input, Large Print with/without the aid of magnifiers as their learning medium. Since these students are expected to develop

competency skills which could facilitate their functional integration, learning Braille is essential and mandatory .It is also recommended by various policies that Education and, training should be in tune to provide Braille reading and writing to develop independence, freedom and confidence of the students with Visual Impairment. The special teachers should ensure that large print or braille texts, supplementary materials, educational aids and equipment are required for the visually impaired students so that the student's maximum participation is met in all classroom activities.

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