

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

In the first chapter, detailed conceptual background of the problem has been discussed along with the need, significance, and objectives of the present study. Related literature has been reviewed in the second chapter. In the third chapter, research design, sampling and data collection strategies that were used in this analysis were discussed. In the present chapter, an attempt has been made to explain the steps and procedures followed to analyse and interpret the data. The analysed data is presented in the form of tables, graphs and charts.

The main aim of this study is to provide quantitative analysis of the availability of assistive devices for differently abled students in thirty selected schools. The first step in this quantitative analysis is to gather the data by a variety of methods and techniques such as unstructured questionnaires, checklist, etc. in the schools. Careful analysis of the collected data has provided required answers to the research questions. Hence, to achieve this goal, the present study has adapted several approaches in order to have a detailed analysis.

4.2 Analysis of the Data

Analysis and interpretation of the data helps to know the relationship between the variables and to get better results. Data has been collected about the availability of assistive devices for differently abled students from the Head of the schools. This checklist consists of availability of infrastructure and assistive devices. After the data collection, obtained information has been formulated as a table.

Descriptive statistics, frequency and percentage have been used in the present analysis to obtain desired results which are shown in tables.

In the present study, frequency for availability and non availability, percentage for availability and non availability of assistive devices, overall availability of assistive devices for differently abled students in thirty schools have been calculated and shown in different tables, graphs and pie charts.

4.2.1 Availability of Infrastructure for Differently Abled Students in Schools

The information has been provided by the Head of the schools about the availability of infrastructure for differently abled students in the schools. After the data analysis, obtained information on the availability of infrastructure for differently abled students has been formulated as the following table.

Table 4.1

Availability of Infrastructure for Differently Abled Students

Infrastructure	Total No. of Schools	Available		Not Available	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Building accessibility	30	29	97	1	3
Ramp	30	21	70	9	30
Handrails	30	15	50	15	50
Signs in Braille	30	0	0	30	100
Playground with paved pathway	30	3	10	27	90
Appropriate lighting	30	30	100	0	0
Safe drinking water units	30	30	100	0	0
Separate toilets with handrails	30	9	30	21	70
Separate toilets for boys and girls	30	8	26	22	74
Emergency alarms	30	6	20	24	80
Emergency alarms with directional arrow signs	30	0	0	30	100

The above table 4.1 depicts the availability of infrastructure for differently abled students in schools. From this study, it is found that out of thirty schools, there are 100 % schools having appropriate lighting and safe drinking water units.; 97 % building accessibility, 70 % ramps, 50 % handrails, 30 % separate toilets with handrails, 26 % separate toilets for boys and girls, 20 % emergency alarms, 10 % playground with paved pathway and 0 % signs in Braille and emergency alarms with directional arrow signs (Fig. 4.1).

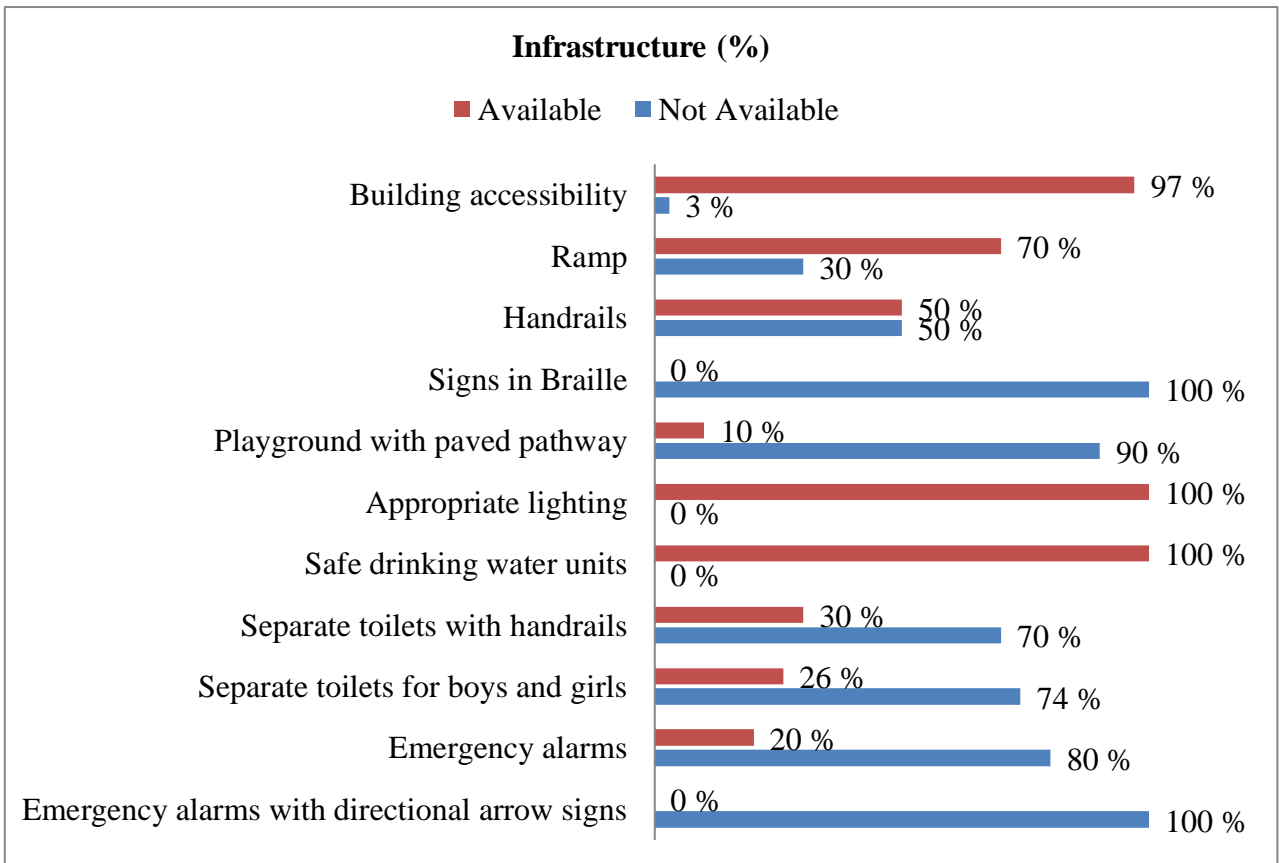


Fig. 4.1 Graph Showing the Availability of Infrastructure

4.2.2 Availability of Academic Assistive Devices for Differently Abled Students in Schools

After the data analysis, obtained information on the availability of academic assistive devices for differently abled students has been formulated as the following table.

Table 4.2

Availability of Academic Assistive Devices for Differently Abled Students

Academic Assistive Devices	Total No. of Schools	Available		Not Available	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Computers	30	24	80	6	20
ICT connectivity	30	20	67	10	33
Appropriate Software	30	4	13	26	87
Projectors	30	25	83	5	17
Smart classrooms	30	23	77	7	23
Screen readers	30	3	10	27	90
Tactile Books and materials	30	2	7	28	93

Table 4.2 depicts the availability of academic assistive devices for differently abled students in schools. As shown in Fig. 4.2, the schools have 80 % computers, 67 % ICT connectivity, 13 % appropriate software, 83 % projectors, 77 % smart classrooms, 10 % screen readers and 7 % tactile books and materials.

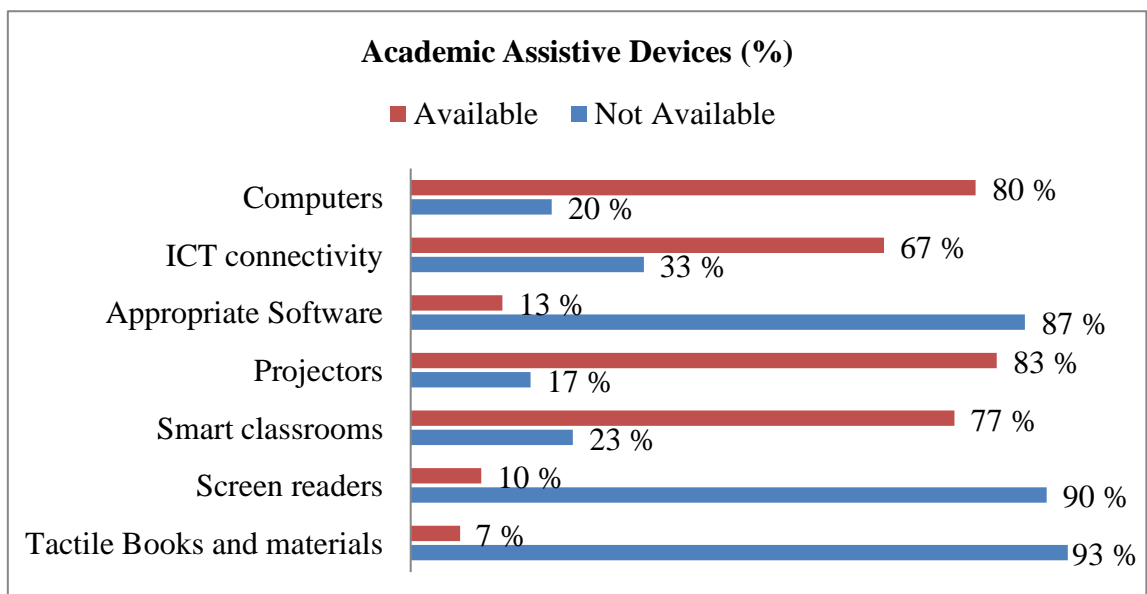


Fig. 4.2 Graph Showing Availability of Academic Assistive Devices

4.2.3 Availability of Assistive Devices for Differently Abled Students with Visual Impairment in Schools

After the data analysis, obtained information on the availability of assistive devices for differently abled students with visual impairment has been formulated as the following table.

Table 4.3

Availability of Assistive Devices for Differently Abled Students with Visual Impairment

Assistive Devices		Total No. of Schools	Available		Not Available	
			Frequency	Percentage (%)	Frequency	Percentage (%)
Low-tech	Abacus Frame	30	8	27	22	73
	Taylor Frame	30	0	0	30	100
	Geo-board	30	2	7	28	93
	Geometry-Kit	30	3	10	27	90
	Magnifiers	30	3	10	27	90
	Joysticks	30	1	3	29	97
	Non-optical Low Vision devices	30	0	0	30	100
	Snellen Chart	30	2	6	28	94
Mid-tech	Braille systems for reading and writing	30	0	0	30	100
	Embossed Maps	30	1	3	29	97
	Talking Books	30	0	0	30	100
	Talking Toys	30	1	3	29	97
	Large print books	30	0	0	30	100
	Talking calculators	30	0	0	30	100
	White canes	30	1	3	29	97
	Slate and stylus	30	1	3	29	97
	Type writers	30	1	3	29	97
	Talking computers	30	0	0	30	100
	Wheel chairs	30	7	23	23	74
	Adjustable tables	30	2	7	28	93
High-tech	Screen Reader	30	1	3	29	97
	Screen Magnifier	30	1	3	29	97
	Braille translation	30	0	0	30	100
	Talking clocks/Wrist watch	30	0	0	30	100
	Braille Embosser	30	0	0	30	100
	Software	30	1	3	29	97

Table 4.3 depicts the availability of assistive devices for differently abled students with visual impairment in schools. Mainly these devices have been divided into three categories namely low-tech, mid-tech and high-tech devices.

As shown in Fig. 4.3, low-tech category consists of 27 % abacus frame, 10 % geometry-kit and magnifiers; 7 % geo-board, 6 % Snellen chart, 3 % joysticks and no Taylor frame and non-optical low vision devices (0 %).

Mid-tech devices consists of 23 % wheelchairs, 7 % adjustable tables, 3 % embossed maps, talking toys, white canes, slate and stylus and type writers; 0 % Braille systems for reading and writing, talking books, large print books, talking calculators and talking computers.

High-tech devices consists of 3 % screen reader, screen magnifier, software and no Braille translation, talking clocks/wrist watch and Braille embosser (0 %).

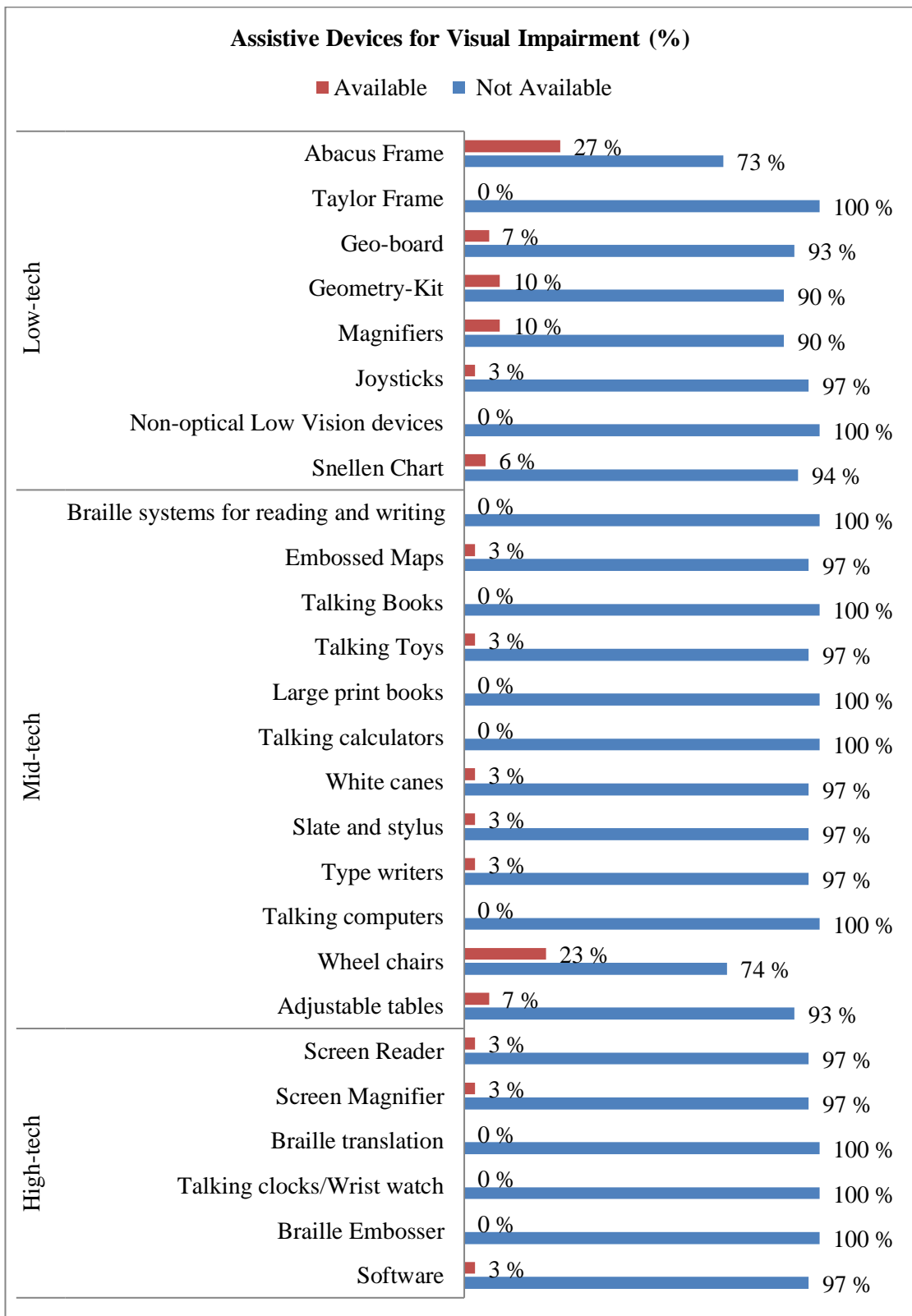


Fig. 4.3 Graph Showing Assistive Devices for Visual Impairment

4.2.4 Availability of Assistive Devices for Differently Abled Students with Hearing Impairment in Schools

After the data analysis, obtained information on the availability of assistive devices for differently abled students with hearing impairment has been formulated as the following table.

Table 4.4

Availability of Assistive Devices for Differently Abled Students with Hearing Impairment

Assistive Devices	Total No. of Schools	Available		Not Available	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Audiometer	30	1	3	29	97
Microphone	30	2	6	28	94
Amplification devices	30	1	3	29	97
Speech trainer	30	2	6	28	94
Hearing aids	30	2	6	28	94
Charts	30	3	10	27	90
Hash cards	30	3	10	27	90
Signaling devices	30	1	3	29	97
Wheel chairs	30	7	23	23	77
Adapted door bell	30	0	0	30	100
Sign devices	30	1	3	29	97
Alerting devices	30	0	0	30	100
Motion films	30	4	13	26	87
Tympanometer	30	0	0	30	100
Software	30	1	3	29	97

Table 4.4 depicts the availability of assistive devices for differently abled students with hearing impairment in schools. From this study, it is found that out of thirty schools, there are 23 % wheelchairs, 13 % motion films, 10 % charts and hash cards; 6 % microphone, speech trainer and hearing aids; 3 % audiometer, amplification devices, signalling devices, sign devices and software; 0 % adapted door bell, alerting devices and tympanometer (Fig. 4.4).

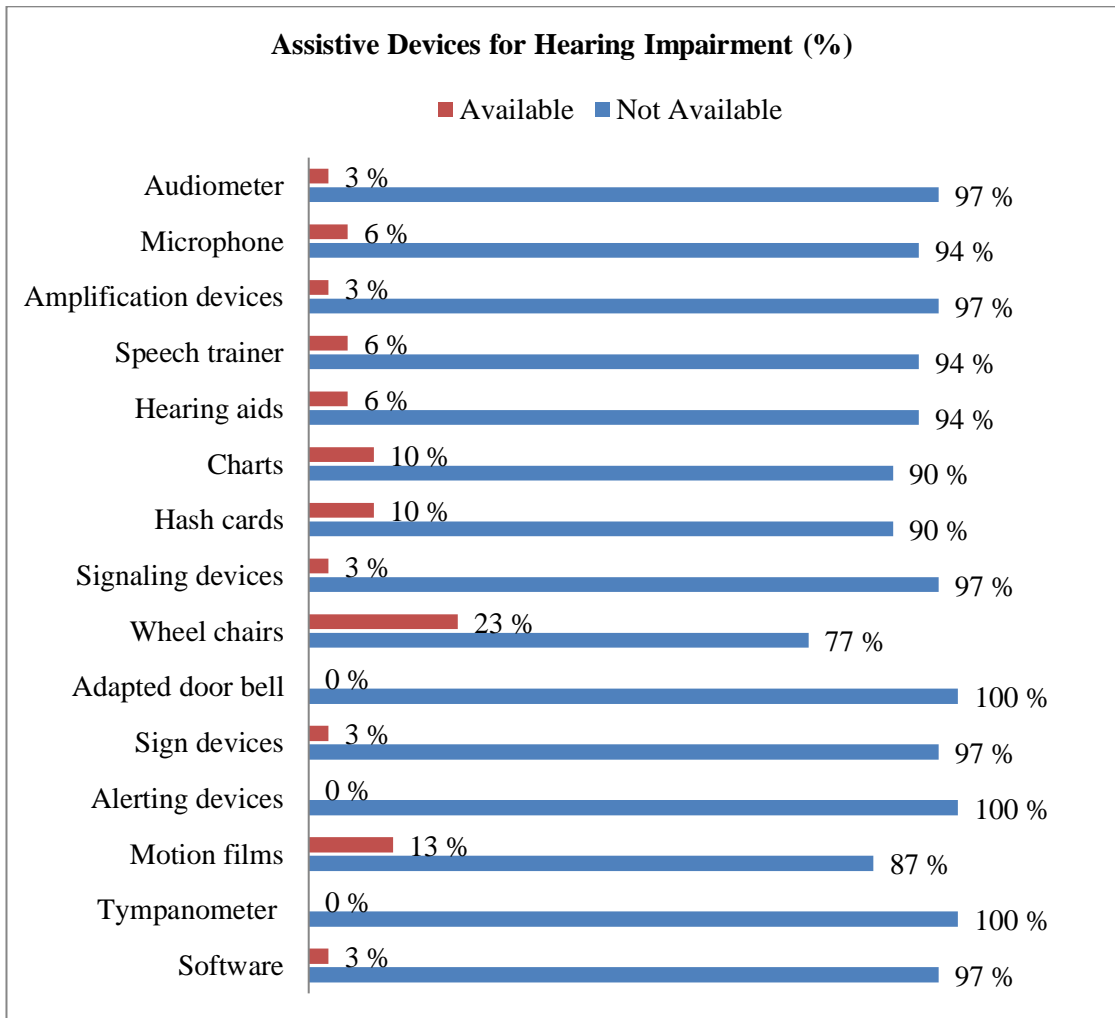


Fig. 4.4 Graph Showing Assistive Devices for Hearing Impairment

4.2.5 Availability of Assistive Devices for Differently Abled Students with Neuro-Muscular / Locomotor Disabilities in Schools

After the data analysis, obtained information on the availability of assistive devices for differently abled students with neuro-muscular / locomotor disabilities has been formulated as the following table.

Table 4.5

Availability of Assistive Devices for Differently Abled Students with Neuro Muscular / Locomotor Disabilities

Assistive Devices	Total No. of Schools	Available		Not Available	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Wheel Chairs	30	7	24	23	76
Audio aids	30	6	20	24	80
Video aids	30	6	20	24	80
Shoes	30	0	0	30	100
Physiotherapy instruments	30	2	6	28	94
Ergonomic chairs / tables	30	0	0	30	100
Calipers	30	0	0	30	100
Walking sticks	30	2	6	28	94
Crutches	30	2	6	28	94
Type writers	30	1	3	29	97
Pencil grip	30	2	6	28	94
Side lying frames	30	1	3	29	97
Ergonomic keyboard	30	0	0	30	100

Table 4.5 depicts the availability of assistive devices for differently abled students with neuro-muscular / locomotor disabilities in schools. From the results, it is found that there is availability of 24 % wheel chairs, 20 % audio aids and video aids; 6 % physiotherapy instruments, walking sticks, crutches and pencil grip; 3 % type writers and side lying frames; 0 % shoes, ergonomic chairs / tables, callipers and ergonomic keyboard in these schools (Fig. 4.5).

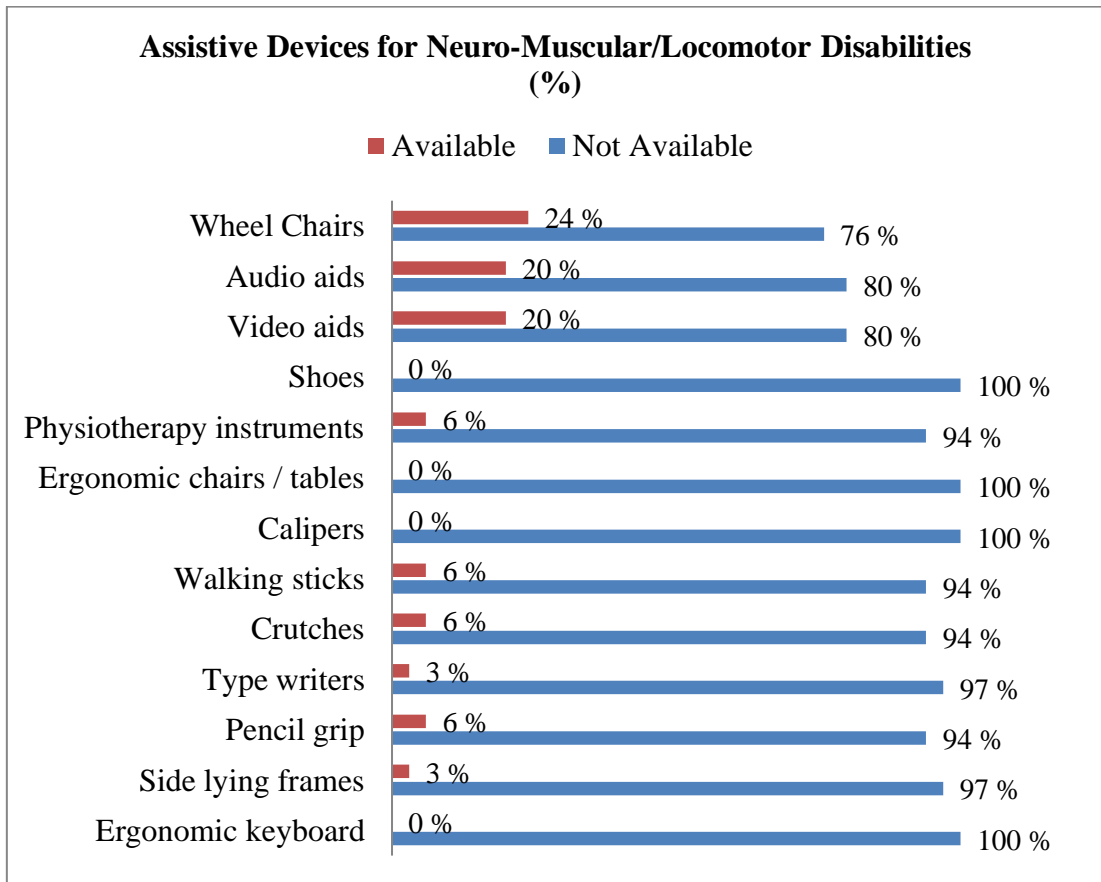


Fig. 4.5 Graph Showing Assistive Devices for Neuro-Muscular / Locomotor Disabilities

4.2.6 Availability of Assistive Devices for Differently Abled Students with Mental Retardation and Learning Disabilities in Schools

After the data analysis, obtained information on the availability of assistive devices for differently abled students with mental retardation and learning disabilities has been formulated as the following table.

Table 4.6

Availability of Assistive Devices for Differently Abled Students with Mental Retardation and Learning Disabilities

Assistive Devices	Total No. of Schools	Available		Not Available	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Electronic organizers	30	0	0	30	100
Disc reading	30	0	0	30	100
Talking dictionaries	30	0	0	30	100
Toys	30	4	14	26	86
Models	30	3	10	27	90
Wheel chairs	30	7	24	23	76
Art activities	30	5	17	25	83

Table 4.6 depicts the availability of assistive devices for differently abled students with mental retardation and learning disabilities in schools. In the present study, it is found that out of thirty schools, the availability of assistive devices is 24 % wheel chairs, 17 % art activities, 14 % toys, 10 % models; 0 % electronic organizers, disc reading and talking dictionaries (Fig. 4.6).

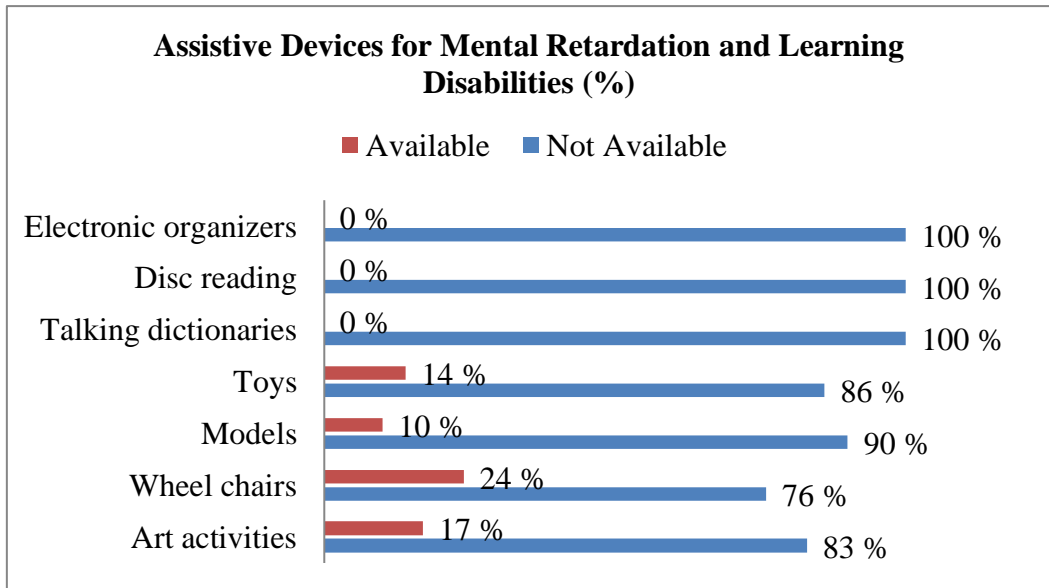


Fig. 4.6 Graph Showing Assistive Devices for Mental Retardation and Learning Disabilities

4.2.7 Overall Availability of Assistive Devices for Differently Abled Students in Schools

After the data analysis, overall availability of assistive devices for differently abled students in schools has been shown in the following table.

Table 4.7
Overall Availability of Assistive Devices for Differently Abled Students in Schools

Sample No.	Total No. of Devices	Available		Not Available	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	80	13	16	67	84
2	80	14	17	66	83
3	80	51	64	29	36
4	80	8	10	72	90
5	80	15	19	65	81
6	80	26	32	54	68
7	80	10	12	70	88
8	80	11	14	69	86
9	80	12	15	68	85
10	80	13	16	67	84
11	80	12	15	68	85
12	80	15	19	65	81
13	80	29	36	51	64
14	80	11	14	69	86
15	80	7	9	73	91
16	80	7	9	73	91
17	80	6	7	74	93
18	80	4	5	76	95
19	80	8	10	72	90
20	80	3	4	77	96
21	80	11	14	69	86
22	80	8	10	72	90
23	80	10	12	70	88
24	80	31	39	49	61
25	80	16	20	64	80
26	80	8	10	72	90
27	80	5	6	75	94
28	80	9	11	71	89
29	80	8	10	72	90
30	80	6	7	74	93

Table 4.7 outlines the information which includes total number of assistive devices selected for this study, their frequency and percentage for both availability and non availability in all selected schools for this study.

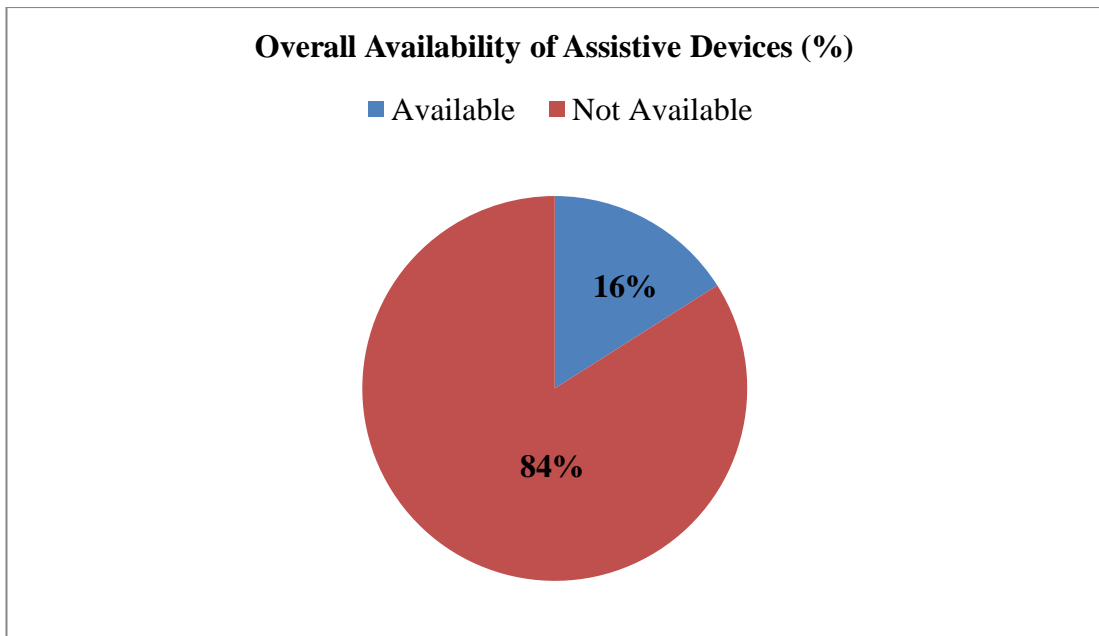


Fig. 4.7 Pie Chart Showing Overall Availability of Assistive Devices for Differently Abled Students in Schools

Fig. 4.7 reveals that there is only 16 % availability of these assistive devices where as there is 84 % non availability of these assistive devices for differently abled students in the schools.

The results of the data analysis reveal that there is very low availability of these devices which is only 16 %, where as there is 84 % non availability of these devices in the schools which is not encouraging. Schools which are located in urban area are having comparatively high availability of assistive devices than the schools which are located in rural area.

In the present study, the overall results reveal the status of availability of infrastructure and assistive devices in schools. Very less number of assistive devices are available and there is a need towards the concrete approach to provide these devices which will enhance the educational quality and success of differently abled students in schools.