



## READING PREFERENCE AMONG CHILDREN WITH MULTIPLE DISABILITIES

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### Abstract

*Reading is a foundational skill that supports academic learning, functional independence, and social participation. Children with multiple disabilities (CWMD), particularly those with visual impairment combined with cognitive, sensory, or motor impairments, experience significant challenges in acquiring reading skills. The present study aimed to examine the reading preferences and functional reading abilities of children with visual impairment and multiple disabilities, with specific reference to reading media, print size, reading methods, and functional near vision. A survey method was adopted, and the sample comprised 60 children aged 6–16 years drawn from four special schools in Coimbatore, Tamil Nadu, using non-random sampling. An adapted observation schedule was developed to assess functional near vision, reading speed in English and Tamil, reading methods (letter-by-letter, word-by-word), preferred print size, number concept reading, picture reading, and mode of reading (silent or loud). The findings revealed wide variability in reading abilities among the participants. A substantial proportion of children demonstrated limited or no word reading skills, with better performance observed in picture reading and object counting tasks. Most children preferred print sizes 12 and 14, and loud reading was more common than silent reading. The study highlights the critical need for systematic, individualized reading interventions, adapted instructional materials, and functional vision-based assessment practices to enhance literacy outcomes for children with multiple disabilities.*

**Keywords:** Children with multiple disabilities, reading preference, functional vision, reading media assessment, visual impairment, special education

### INTRODUCTION



Globally, over one billion people live with some form of disability, with a significant proportion residing in developing countries. According to the Census of India (2011), approximately **4,74,909 children have visual impairment along with multiple disabilities**. Multiple disabilities refer to the coexistence of two or more impairments, such as visual impairment, hearing impairment, speech and language disorders, sensory impairment, intellectual disability, cerebral palsy, autism spectrum disorder, and learning disabilities.

Children with multiple disabilities (CWMD) often face unique challenges in communication, learning, and daily living skills. Their modes of communication and learning differ significantly from those of typically developing children, necessitating **environmental adaptations, individualized instructional strategies, and specialized assessment procedures**. Children born with disabilities encounter numerous challenges in their everyday lives, especially in acquiring academic and functional skills.

Multiple disabilities require **both clinical and functional assessment**. Clinical assessments are conducted by medical professionals, while functional assessments are carried out by special educators and allied professionals. A multidisciplinary team—including parents, teachers, therapists, and medical professionals—plays a crucial role in identifying the child's needs and planning interventions collaboratively to enable the child to perform academic and functional tasks effectively.

### CONCEPT OF READING

Reading is a fundamental skill that plays a vital role in education and overall cognitive development. It enhances learning abilities, vocabulary, pronunciation, comprehension, and critical thinking skills. Reading also facilitates written expression and communication.

Reading strategies vary among learners. Some students use **scanning** to locate specific information, while others use **skimming** to understand the main ideas, such as introductions, summaries, or key concepts. Learners with disabilities approach reading differently based on their abilities, sensory functioning, and cognitive levels.

*“A book can't change the world on its own.*

*But a book can change readers, and readers can change the world.”* – Sarah

Unlike sighted individuals, blind and visually impaired learners do not acquire reading skills incidentally. Instead, they require **systematic instruction, repeated exposure, and structured interventions**.

### CONCEPT OF MULTIPLE DISABILITIES

According to the **Individuals with Disabilities Education Act (IDEA)**, multiple disabilities refer to “concomitant impairments (such as intellectual disability and blindness or intellectual disability and orthopedic impairment), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one impairment.” The term excludes deaf-blindness.

Multiple disabilities encompass a broad and diverse population. Each child presents a unique combination of strengths and needs, making individualized educational planning essential. Visual impairment may range from low vision to total blindness, and when combined with other disabilities, it can significantly affect cognitive, physical, emotional, and social development.

Children with visual impairment and additional disabilities can often learn to use their residual vision effectively with proper training. Therefore, **functional vision assessment (FVA)** and **learning media assessment (LMA)** are essential to determine how children use their vision for reading and writing tasks and to identify appropriate instructional materials.

### **CHARACTERISTICS OF MD**

Children with multiple disabilities may exhibit the following characteristics:

- Difficulty in communication
- Behavioral challenges
- Developmental delays
- Poor fine motor coordination
- Limited cognitive functioning
- Difficulties in orientation and mobility
- Reduced social interaction

### **READING PREFERENCE FOR MD**

The **Reading Media Assessment (RMA)** is conducted to determine the most appropriate literacy and functional learning media for students. While the Learning Media Assessment (LMA) is suitable for pre-readers, the RMA is more appropriate for students who demonstrate emerging or established reading skills.

The RMA systematically gathers information about **sensory preferences, learning environments, and intervention strategies**, in conjunction with the Functional Vision Assessment. It helps teachers understand how students with visual impairment and multiple disabilities access information through their sensory channels and identifies their **primary or secondary reading media**, including print, enlarged print, pictures, or dual media use.

RMA findings guide decisions related to:

- Readiness for literacy instruction
- Selection and evaluation of reading media
- Use of low vision aids
- Adaptation of instructional materials

Common reading materials assessed include textbooks, worksheets, leisure books, newspapers, labels, menus, diagrams, and other functional print materials, with attention to **font type, size, contrast, and illumination**.



## RATIONALE OF THE STUDY

The children with multiple disability require special and individualized adaptation to learn reading that is fundamental for the acquisition of functional academics. Vision Plays an important role in acquiring these skills. The existing reading skills among children with multiple disability are to be surveyed to strengthen the process of rehabilitation.

## READING REQUIRES NEAR VISION TASKS

Visual acuity is a measure of the clearness or acuteness of vision, expressed as the angle subtended at the anterior focal point of the eye by the detail of the letter recognized. Visual acuity depends upon the sharpness of the focus of the retinal image and the integrity of the retina and visual pathway. Visual field is the area or extent of space can be seen to an eye in a given position. Contrast sensitivity is usually tested with letters, numbers, or symbols. When there is a good contrast with the background, it is easier to see. It is the ability to detect objects at low contrast. Example: Coffee in a white color cup. color is a objects or things can be recognized by color, even if details cannot be seen.

## ELEMENT OF VISION

### 1) Size

Larger objects are only sometimes easier to see. For some people, it will reduce the visual fields so that they can see the part of the large objects.

### 2) Distance

Objects are usually easier to see when they are close. Things that are too small or have poor contrast may not be seen even when very close.

Children can usually see objects very close (10cm or even less) to their eyes, especially adults over 35 to 40 years old who cannot see things held very close to them.

### 3) Contrast

Good contrast is an essential factor for people with low vision. Improving the contrast on objects or print, easier to see without changing the size or the distance.

### 4) Color

Some things can be recognized by their color, even if details cannot be seen.

### 5) Position

The position of an object may cause difficulty for some people. Different positions should be used to have the person look straight in front, to one side, up and down. The part of an object can make it harder to see on, besides, or under other things.

### 6) Light

People with low vision can have difficulty adapting to changes in lighting. It takes a while for vision to adjust to the change. Some people prefer and see better with bright light, but others prefer dull light. Glare makes it difficult for all people.

**FUNCTIONAL VISION**

- Functional vision may be improved with training. Many people can learn to make better use of their low vision and can function efficiently with only small amounts of visual information.
- Objects and prints can be recognized when they are blurry or when only parts can be seen.

**1.1 OBJECTIVE OF THE STUDY**

- To conduct an adapted functional near vision assessment to identify visual acuity, field, fixation, and tracking skills
- To identify and assess preferred reading media among children with multiple disabilities
- To suggest suitable modifications and adaptations for assessing reading preferences

**NEED AND SCOPE OF THE STUDY**

Reading is a fundamental human skill essential for academic achievement, independence, and social participation. Children with multiple disabilities require **specific and individualized adaptations** for reading and writing. Understanding their reading preferences helps educators design effective instructional strategies.

The study will benefit:

- Special and general educators
- Parents and caregivers
- Teacher educators and policymakers

It emphasizes the importance of early identification and intervention for establishing strong educational foundations.

**Methodology**

The study adopted a **survey method** to investigate reading preferences among children with visual impairment and multiple disabilities.

**Sample**

The sample comprised **60 children** (47 males and 13 females) aged **6–16 years**, selected from four special schools in Coimbatore, Tamil Nadu, using non-random sampling.

**Tools**

An **observation schedule** was developed to assess:

- Functional near vision
- Reading speed and method
- Preferred print size
- Picture reading
- Number concept reading

The tool was adapted to suit the sensory and cognitive limitations of the sample.

### **SAMPLE SELECTION**

The present study focused on children with Visual Impairment with Multiple disability in the age group 6-16 years. The population of the study had wide geographical dispersion and the sample were selected from the Coimbatore city of Tamil Nadu. A total of 60 students with Multiple disability in the age range 6-16 years, 13 female and 47 male formed the sample for the present study.

Based on the availability and consent of the authorities, four schools were involved in the study. They are

- Shivesh Autism centre
- WVS special school
- Jeyam special school
- Nithiliyam special school

### **SELECTION OF AREA**

- The special school for children with multiple disability at Coimbatore were the area selected for the sample

### **SELECTION OF VARIABLES**

**Table 1- Variables considered for the study**

<b>VARIABLES</b>	<b>CATEGORY</b>
• <b>Independent Variables</b>	
Age group	6– 16 Years
Gender	Male / Female
Type of Disability (Multiple disability)	<ul style="list-style-type: none"><li>• Intellectual disability+ Attention Deficit Hyperactive Disorder</li><li>• Intellectual disability +Autism Spectrum Disorder</li><li>• Autism Spectrum Disorder + Intellectual disability +Hearing Impairment</li><li>• Autism Spectrum Disorder</li><li>• Cerebral palsy</li><li>• Global developmental delay</li><li>• Learning disability+ Attention Deficit Hyperactive Disorder +Visual impairment</li><li>• Learning disability + Attention Deficit</li></ul>



	Hyperactive Disorder <ul style="list-style-type: none"><li>Intellectual disability +Learning disability</li><li>Intellectual disability + Visual impairment</li><li>Intellectual disability +Cerebral palsy</li><li>Autism Spectrum Disorder</li><li>Autism Spectrum Disorder</li></ul> + Attention Deficit Hyperactive Disorder
Type of School	Special School
• Dependent Variables	Age Norm (Years)
Reading skills	6-16 years
Writing skills	6-16 years

**Table 2: Distribution of the sample**

Sample	6 to 8		9 to 12		13 to 16		Grand Total	
	Male	Female	Male	Female	Male	Female		
ID+ADHD	2	2	1	1	1	1	4	
ID+ASD	3	4	7	1	1	1	2	10
ASD+ID+HI	1	1						1
ASD	10	2	12	9	1	10	1	23
CP	1	1		1	1			2
GDD	1	1						1
LD+ADHD+VI	1	1						1
LD+ADHD	1	1						1
ID+LD			2		2	2	2	4
ID+VI	1	1	1		1	1	1	3
ID+CP	2	1	3	2	2	4	1	8
ASD+ADHD	2		2					2
<b>Grand Total</b>	<b>25</b>	<b>7</b>	<b>32</b>	<b>16</b>	<b>4</b>	<b>20</b>	<b>6</b>	<b>60</b>

### **TOOL CONSTRUCTION**

The present study aimed at determining to develop reading and writing skills among children with Multiple disability to evaluate or analyse the student's performance in real time.

The tool to evaluate the skill of reading and writing preference among children with multiple disability involved the following steps.

- **Identifying the Tool**
- **Exploring the Reading and writing Skills of Selected Sample**
- **Construction of the Observation Schedule**
- **Tool description**

### **IDENTIFYING THE TOOL**

The tools available for testing the functional near vision tasks and reading preference were explored.

### **EXPLORING THE READING AND WRITING SKILLS OF SELECTED SAMPLE**

For effective assessment of children on reading and writing skills the investigator created a conductive environment with appropriate arrangements such as seating, favouring the child convenience, after which rapport between the investigator and the sample were established. The investigator explored the existing reading and writing skills of the children with Multiple disabilities(CWMD). As almost all the children had only limited reading and copy writing skills, the areas to find out reading preference were further divided into smaller components and the major areas of assessment were framed.

### **CONSTRUCTION OF OBSERVATION SCHEDULE**

Considering the requirements of the data it was decided to construct an observation schedule

- The major purpose of the study was to find out reading preference of the Multiple disabled. Reading being near vision task their visual acuity, field of vision and other related to visual skills were to be examined.
- As the sample had sensory and cognitive limitations due to adaptation in the regular vision assessment procedure were made.
- Reading and writing test items were constructed and are described here under.

### **TOOL DESCRIPTION**

The first part of the tool collected general information of the sample.

The second part collected information on **READING**

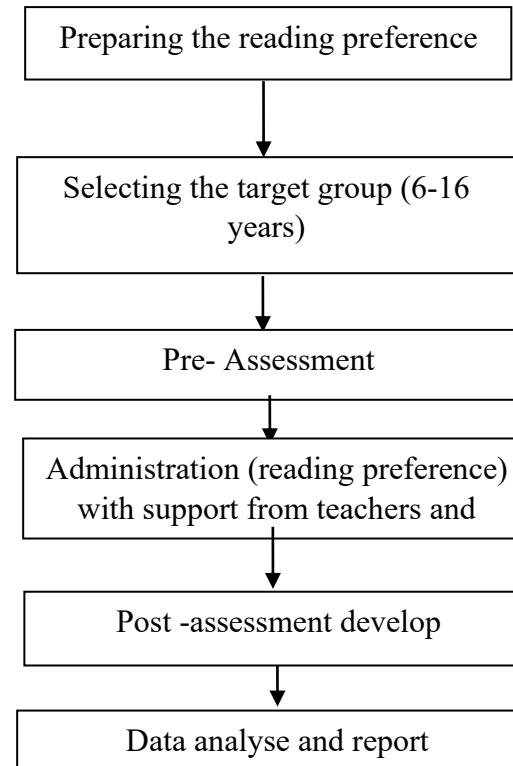
- Sample's ability to read number of words / min in English/ Tamil/ Number concept.
- Loud /silent reading; letter by letter/word by word/picture reading.
- Selected sample with Multiple disability with reference to readable print size.

### **CONDUCT OF THE STUDY**

The investigator using the observation schedule (Appendix-1) collected the required data from the class teachers and the students of the respective sample. After establishing rapport

with the concerned personnel's the investigator collected information on the visual functioning and reading, writing skills of the sample.

After getting consent from the authorities & parents and building rapport with the children assessment was carried out. Assessment enabled the investigator to score the individual sample on the basis of their performance in the given activity provided the instructions (through reading their text) (Prompting if required).



**Figure 2- Conduct of the study**

## **DATA COLLECTION PROCEDURE**

**The data was collected in three phases:**

**Phase 1:**

Identify the children with multiple disability in primary and upper primary schools using non-random sampling Method.

**Phase 2:**

A good rapport was established with the concerned personnel. The investigator collected the data from the students and teachers. The investigator identified the areas of strengths and weakness of the sample in reading among children with Multiple disabilities. The assessment items were trimmed according to the convenience of the subjects.

**Phase 3:**

The survey method was conducted nearly for thirty days for the children with Multiple disability among their reading and writing skills for all the students and collected the required data of the particular sample using observation schedule.

**ASSESSMENT OF READING****Reading**

- First the investigator gave a sheet with ten simple English words and ten simple Tamil words from their text books and prompted the students to read them.
- Some students read letter by letter in silent reading and said the word louder. Some students could not read the words they read only the letters.
- Some students could not read the words which the investigator gave, because they knew only few words.
- Some students could read their note book only, because they were familiar with few words only hence, selected words from their notebook each. Most of the students used their fingers and they moved it on the words for reading.
- Students mostly read English words, they felt difficult to read Tamil words. Sometimes they got confused with the letters like சே, செ, கே, கொ because these letters are similar to each other.
- Some children could read words letter by letter and recognize the words. Some students read only alphabets in Tamil/ English.
- While reading, some students omitted words frequently; they re-read or skipped lines. During that time, they failed to recognize the words and quickly lost interest in reading.
- For reading the investigator used different print sizes for the students with Multiple disabilities. Some students preferred print size 12, some 14, & some 16.

**RESULTS AND DISCUSSIONS**

The results of the study on “**Reading preference among children with Multiple disability**” are discussed under the following headings:

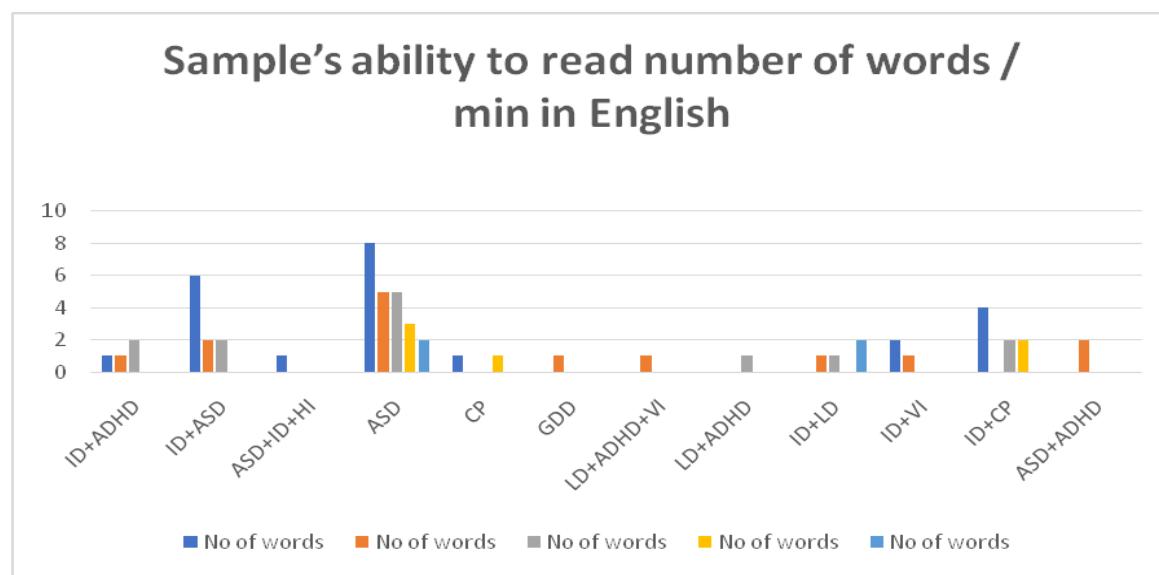
**READING ABILITY**

- 1.1 Sample's ability to read number of words / min in English
- 1.2 Sample's ability to read number of words / min in Tamil
- 1.3 Reading method- letter by letter/word by word
- 1.4 Readable print size of the sample
- 1.5 Number concepts-reading among the sample
- 1.6 Selected sample with multiple disability with reference to picture reading
- 1.7 Way of reading of the sample- silent/loud

**Table 1.1and Figure 1.1**gives a glimpse on the ability of selected sample with Multiple disabilities with reference to read number of words/min in English.

**Table 4.1.1: Sample's ability to read number of words / min in English**

Sample	No of words										Grand Total
	0	%	1 to 10	%	11 to 20	%	21 to 30	%	31 to 40	%	
ID+ADHD	1	1.6	1	1.6	2	3.3	-	-	-	-	4 6.7
ID+ASD	6	10	2	3.3	2	3.3					10 16.7
ASD+ID+HI	1	1.6	-	-	-	-	-	-	-	-	1 1.6
ASD	8	13	5	8.3	5	8.3	3	5	2	3.3	23 38.3
CP	1	1.6	-	-	-	-	1	1.6	-	-	2 3.3
GDD	-	-	1	1.6	-	-	-	-	-	-	1 1.6
LD+ADHD+VI	-	-	1	1.6	-	-	-	-	-	-	1 1.6
LD+ADHD	-	-	-	-	1	1.6	-	-	-	-	1 1.6
ID+LD	-	-	1	1.6	1	1.6	-	-	2	3.3	4 6.7
ID+VI	2	3.3	1	1.6	-	-	-	-	-	-	3 5
ID+CP	4	6.6	-	-	2	3.3	2	3.3	-	-	8 13.3
ASD+ADHD	-	-	2	3.3	-	-	-	-	-	-	2 2.3
<b>Grand Total</b>	<b>23</b>	<b>38.3</b>	<b>14</b>	<b>23.3</b>	<b>13</b>	<b>21.7</b>	<b>6</b>	<b>10</b>	<b>4</b>	<b>6.7</b>	<b>60 100</b>



**Figure 4.1.1: Sample's ability to read number of words / min in English.**

The ability of the children to read English words per minute was assessed. The sample had difficulties in reading due to their cognitive limitations; these findings cannot be linked to



their vision alone. However, the functional abilities put together their restrictions in various senses are to be accounted as the total of all impairment and rehabilitation processes given all these years. The sample had a spectrum of limitations starting with two disabilities to three disabilities. The CP, GDD and ASD, and being the stand-alone multiple disabilities. An earnest attempt to study the ability of the sample in utilizing vision for reading despite their limitations, is collected and pooled above. Around 3.3% of the sample could read at the rate of 31-40 words per minutes as the highest performance, and those sample had ASD. Probably they were high functioning ASD children.

Around 38% of the sample could not read at all; 23% of the sample could read at the rate of 1 to 10 words/min; 22 % of the sample could read at the rate of 11 to 20 words/min and 10% of the sample could read at the rate of 21 to 30 words/min in English; 7% of the sample could read at the rate of 31 to 40 words/min.

While considering the sample who could not read at all had a breakup of 13 % with ASD; 10% with ID+ASD; 6.6% with ID+CP; 3.3% with ID+VI and 1.6% with CP, ASD+ID+HI, ID+ADHD each.

The sample who could read at the rate 1-10 words /min (23.3%) had a breakup of 8.3%with ASD; 3.3% with ID+ASD, ASD+ADHD each; and 1.6% with ID+ADHD, GDD, LD+ADHD+VI, ID+LD &ID+VI each.

Around 21% of the sample could read at the rate of 11-20 words/min in English with the breakup of 8.3 % with ASD; 3.3% with ID+ASD, ID+CP &ID+ADHD each; 1.6% with LD +AHD &ID+LD each.

The sample who could read 21-30 words per/min in English was 10% with the breakup of 5% ASD, 3.3% with ID+CP and 1.6% with CP.

Only 6.7% of the sample could perform at the highest reading speed of 31-40 words/ min with the breakup of 3.3% with ASD &ID+LD each.

Sixty sample with various multiple disabilities were assessed for their ability to read words/min in English. Out of which 23 had ASD, 10 had ID+ASD, 8 had ID+CP, 4 had ID+ADHD &ID+LD, 3 had ID+VI, 2 had CP & ASD+ADHD and one each with GDD, LD+ADHD+VI, ASD+ID+HI, LD+ADHD each.

Two sample who had ID+ADHD could read 11-20 words /min; one could read at the rate 1-10 words/min and one could not read at all.

The majority (60%) of the people who had ID+ASD (6 people) could not read at all. Out of 10 sample who had ID+ASD two each could read at the rate 11-20 words/min and 1-10 words/min.

Only one child had ASD+ID+HI and could not read at all.

The majority of the sample had the single spectrum disorder ASD. Around 35% of the children who had ASD could not read at all; almost 22% of them had equal breakup of (~8%) performance at the rate 11 -20 words/min & 1-10 words/min.

The sample consisted of 2 children with CP one could not read at all, one could read at the rate of 21-30 words/min.

There was only one sample with GDD and LD+ADHD+VI each and performed at the rate of 1-10 words/min.

Only one sample had LD+ADHD and he could read 11-20 words/min.

Four children had ID+LD, two could read at the highest performance rate of 31-40 words/min and the read at the rate of -10 11-20 words/min each

Out of three children who had ID+VI, two could not read at all and one could read at the rate of 1-10 words/min.

Eight children had ID+CP out of which 4 could not read anything at all and two each read at the speed of 11-20 and 21-30 words/min each.

Two children had ASD+ADHD and they could read 1-10 words per min.

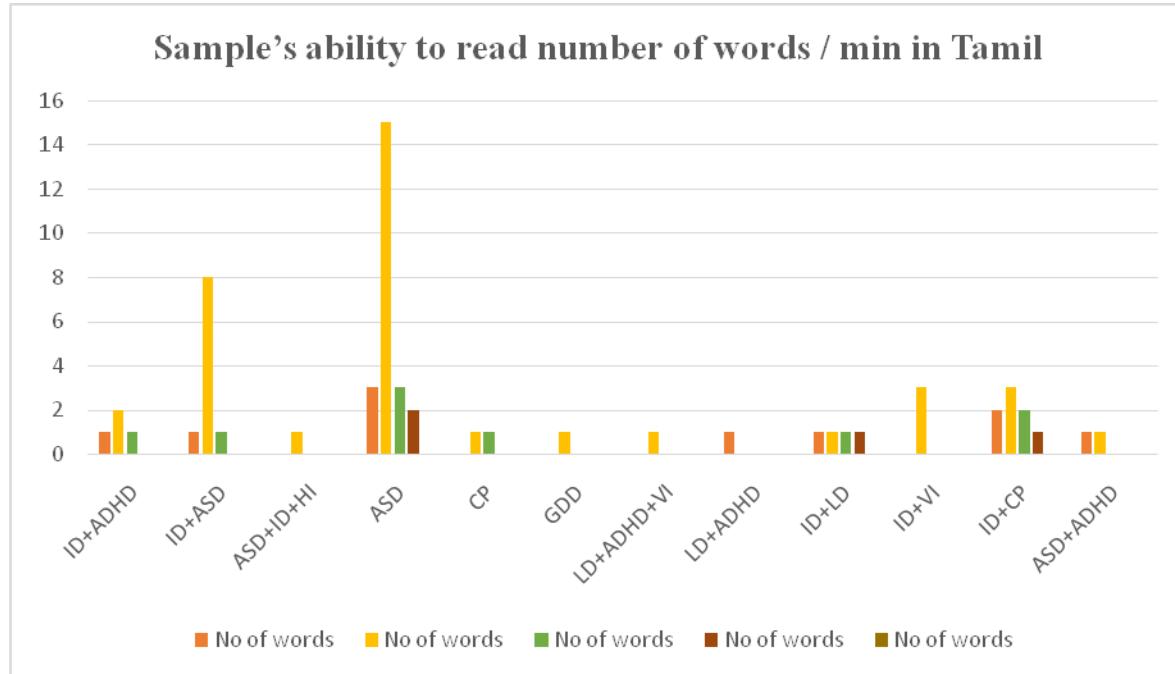
The results call for a serious intervention to improve the reading skills of the children multiple disabilities.

**Table 1.2** and **Figure 1.2** gives a glimpse on the ability of selected sample with Multiple disabilities with reference to read number of words in Tamil

**Table 1.2: Sample's ability to read number of words / min in Tamil**

Sample	No of words									Grand Total
	0	%	1 to 10	%	11 to 20	%	21 to 30	%	31 to 40	
ID+ADHD	1	1.6	2	3.3	1	1.6		-		4 6.7
ID+ASD	1	1.6	8	13.3	1	1.6		-	-	10 16.7
ASD+ID+HI	-	-	1	1.6	-	-	-	-	-	1 1.6
ASD	3	5	15	25	3	5	2	3.3	-	23 38.3
CP	-	-	1	1.6	1	1.6	-	-	-	2 3.3
GDD	-	-	1	1.6	-	-	-	-	-	1 1.6
LD+ADHD+VI	-	-	1	1.6	-	-	-	-	-	1 1.6
LD+ADHD	1	1.6	-	-	-	-	-	-	-	1 1.6
ID+LD	1	1.6	1	1.6	1	1.6	1	1.6	-	4 6.7
ID+VI	-	-	3	5	-	-	-	-	-	3 5
ID+CP	2	3.3	3	5	2	3.3	1	1.6	-	8 13.3

ASD+ADHD	1	1.6	1	1.6	-	-	-	-	-	2	2.3
	<b>10</b>	<b>16.7</b>	<b>37</b>	<b>65</b>	<b>9</b>	<b>15</b>	<b>4</b>	<b>6.7</b>	<b>0</b>	<b>60</b>	<b>100</b>



**Figure 1.2: Sample's ability to read number of words / min in Tamil**

The ability of the children to read Tamil words per minute was assessed. Around 16.7% of the sample could not read at all; 65% of the sample could read at the rate of 1 to 10 words/min; 15 % of the sample could read at the rate of 11 to 20 words/min and 6.7% of the sample could read at the rate of 21 to 30 words/min in Tamil.

While considering the sample who could not read at all (16.7%) had a breakup of 5% with ASD; 3.3% of ID+CP and 1.6% with ID+ADHD, ID+ASD, LD+ADHD, ID+LD &ASD+ADHD each.

The sample who could read at the rate of 1-10 words /min (65%) had a breakup of 25%with ASD; 13.3% with ID+ASD; 5% with ID+CP; 3.3% with ID+ADHD and 1.6% with ASD+ID+HI, CP, GDD, LD+ADHD+VI, ID+LD, ASD+ADHD each.

Around 15% of the sample could read at the rate of 11-20 words/min in Tamil with the breakup of 5 % with ASD; 3.3% with ID+CP and 1.6% with ID+ADHD, ID+ASD, CP, ID+LD each.

The sample who could read 21-30 words per/min in Tamil was 6.7% with the breakup of 3.3% with ASD and 1.6% with ID+LD, ID+CP each.

No one could read at the rate of 31-40 words/min in Tamil

Out of 60 sample, 2 had ID+ADHD and they could read 1-10 words /min; one could read at the rate of 11-20 words/min and one could not read at all.

The majority (60%) of the people who had ID+ASD (1 person) could not read at all. Out of 10 sample who had ID+ASD eight could read at the rate of 1-10 words/min and one could read at the rate of 11-20 words/min.

Only one child had ASD+ID+HI and could read at the rate of 1-10 words / min.

The majority of the sample had the single spectrum disorder ASD. Around 5% of the pupil who had ASD could not read at all; 25% of the children who had ASD could read at the rate of 1-10 words/min; 5% could read at the rate of 11- 20words/min; 3.3% could read at the rate of 21 – 30 words/min

The sample consisted of 2 children with CP one could read at the rate of 1-10 words/min, and the other one could read at the rate of 11-20 words/min.

There was only one sample with GDD and LD+ADHD+VI each and performed at the rate of 1-10 words/min.

Only one sample had LD+ADHD and he could not read at all.

Four children had ID+LD, one could not read at all; other three could read each at the rate of 1-10 words, 11-20 words, 21-30 words words/min each.

All the three children who had ID+VI, could read at the rate of 1-10 words/min.

Eight children had ID+CP out of which 2 could not read anything at all and three could read at the speed of 1-10 and two could read at the rate 11-20 words/min. one could read at the rate of 21 to 30 words/min

Two children had ASD+ADHD and one could not read at all and the other one could read 1-10 words per min.

The results call for serious intervention to improve the reading skills of the children multiple disabilities.

**Table 1.3 and Figure 1.3**gives a glimpse on the reading method – letter by letter/word by word.

**Table 1.3: Reading method – letter by letter/word by word**

Sample	No of words							Grand Total	
	No response	%	Letter by letter	%	word by word	%		%	
ID+ADHD	1	1.66	2	3.3	1	1.6	4	6.6	
ID+ASD	6	10	2	3.3	2	3.3	10	16.6	

ASD+ID+HI	1	1.66	-	-	-	-	1	1.6
ASD	7	11.66	1	1.6	15	25	23	38.3
CP	1	1.6	-	-	1	1.6	2	3.3
GDD	-	-	1	1.6	-	-	1	1.6
LD+ADHD+VI	-	-	1	1.6	-	-	1	1.6
LD+ADHD	-	-	-	-	1	1.6	1	1.6
ID+LD	1	1.6	2	3.3	1	1.6	4	6.7
ID+VI	2	3.3	-	-	1	1.6	3	5
ID+CP	4	6.6	1	1.6	3	5	8	13.3
ASD+ADHD	-	-	-	-	2	3.3	2	3.3
<b>Grand Total</b>	<b>22</b>	<b>36.6</b>	<b>10</b>	<b>16.7</b>	<b>28</b>	<b>46.6</b>	<b>60</b>	<b>100</b>

Reading method – letter by letter/word by word

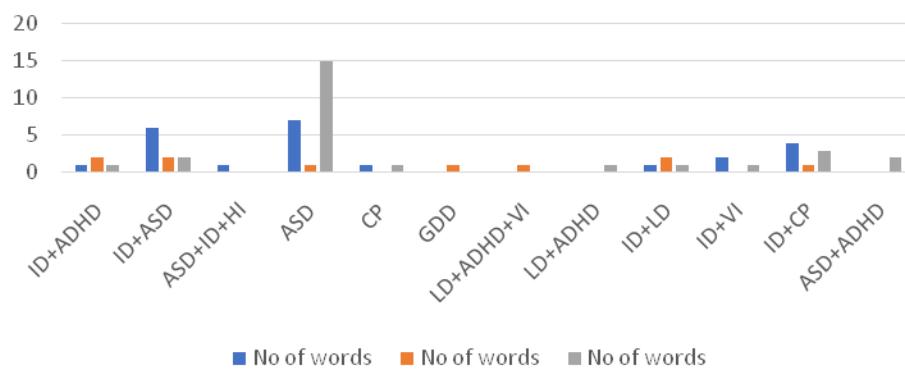


Figure 1.3: Reading method – letter by letter/word by word

As the children had multiple disabilities they did not have adequate reading. Some could recognise and read letters and some could read words. Hence the assessment was to finding out the ability of the children to read letters/ min and words/min in English.

The ability of the (children) sample's reading mode was assessed. Around 36.6% of the sample could not read at all; 16.7 % of the sample could read letter by letter; 46.6% of the sample could read word by word.

While considering the sample who could not read at all had a breakup of 11.6 % with ASD; 10% with ID+ASD; 6.6% with ID+CP; 3.3% with ID+VI and 1.6% with ID+ADHD, CP, ASD+ID+HI, ID+LD each.

The sample who could read letter (16.7%) had a breakup of 1.6 %with ASD, GDD, LD+ADHD+VI & CP; 3.3% with ID+ADHD, ID+ASD, ID+LD each.

Around 46.6% of the sample could read word by word with the breakup of 25% with ASD; 8% with ID+CP; 3.3% with ID+ASD & ASD+ADHD each; 1.6% with ID+ADHD, CP, LD+ADHD, ID+LD, ID+VI each.

Out of 4 sample who had ID+ADHD one could read word by word; two could read letter by letter and one could not read at all.

The majority (60%) of the people who had ID+ASD (6 people) could not read at all. Out of 10 sample who had ID+ASD two each could read letter by letter; two could read word by word.

Only one child had ASD+ID+HI and could not read at all.

The majority of the sample had the single spectrum disorder ASD. Around 30% of the children who had ASD could not read at all; 4.5% of them had equal breakup of (~1%) performance of letter by letter; 65% of the sample who could read word by word.

The sample consisted of 2 children with CP one could not read at all, one could read word by word

There was only one sample with GDD and LD+ADHD+VI each and performed at the level of letter by letter.

Only one sample had LD+ADHD and he could read word by word.

Four children had ID+LD, one could not read at all, two could read letter by letter; one could read word by word.

Out of three children who had ID+VI, two could not read at all and one could read word by word.

Eight children had ID+CP out of which 4 could not read anything at all and one could read letter by letter; three could read word by word.

Two children had ASD+ADHD and they could read word by word.

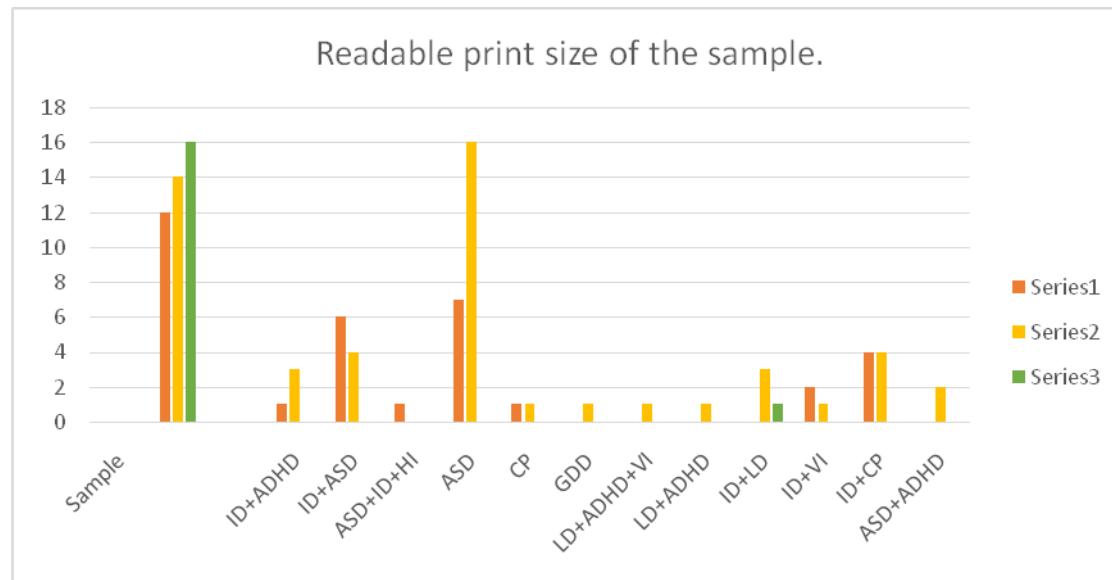
The results call for a serious intervention to improve the reading skills of the children with multiple disabilities.

**Table 1.4** and **Figure 1.4** gives a glimpse on the readable print size of the sample.

**Table 1.4:** Readable print size of the sample.

Sample	Print size						Grand Total	
	12	%	14	%	16	%		%
ID+ADHD	1	1.6	3	5	-	-	4	6.6

ID+ASD	6	10	4	6.6	-	-	10	16.6
ASD+ID+HI	1	1.6	-	-	-	-	1	1.6
ASD	7	11.6	16	26.6	-	-	23	38.3
CP	1	1.6	1	1.6	-	-	2	3.3
GDD	-	-	1	1.6	-	-	1	1.6
LD+ADHD+VI	-	-	1	1.6	-	-	1	1.6
LD+ADHD	-	-	1	1.6	-	-	1	1.6
ID+LD	-	-	3	5	1	1.6	4	6.6
ID+VI	2	3.3	1	1.6	-	-	3	5
ID+CP	4	6.6	4	6.6	-	-	8	13.3
ASD+ADHD	-	-	2	3.3	-	-	2	3.3
<b>Grand total</b>	<b>22</b>	<b>36.6</b>	<b>37</b>	<b>61.7</b>	<b>1</b>	<b>1.6</b>	<b>60</b>	<b>100</b>



**Figure 1.4:** Readable print size of the sample.

The ability of the (children) sample's in reading print was assessed. Around 36.7% of the sample could read by using print size of 12; 61.7 % of the sample could read by using print size 14 and 1.6% of the sample could read by using print size 16.

While considering the sample who could read print size 12 had a breakup of 11.6 % with ASD; 10% with ID+ASD; 6.6% with ID +CP; 3.3% with ID+VI and 1.6% with ID+ADHD, CP & ASD+ID+HI, each.

The sample who could read print size 14, 27% with ASD; 6.6% with ID+ASD, ID+CP each; 5% with ID+ADHD; 3.3% with ASD+ADHD; 1.6% with CP, GDD,LD+ADHD+VI, LD+ADHD each.

Around 1.6% with ASD could read print size 16.



Three sample who had ID+ADHD could read by using print size 14; one could read by using print size 12.

The majority (60%) of the people who had ID+ASD (6 people) could read by using print size 12. Out of 10 sample who had MR+ASD four could read by using print size 14.

Only one child had ASD+MR+HI and he could read by using print size 12.

The majority of the sample had the single spectrum disorder ASD. Around 30% of the children who had ASD could read by using print size 12. 48% of the sample (~16%) could use print size 14.

The sample consisted of 2 children with CP one could read by using print size 12, one could read by using print size 14.

There was only one sample with GDD, LD+ADHD and LD+ADHD+VI each and performed reading by using print size 14 each.

Four children had ID+LD, three could read by using print size 14, one could read by using print size 16.

Out of three children who had ID+VI, one could read by using print size 12, one could read by using print size 14.

Eight children had ID+CP out of which four could read by using print size 12, four could read by using print size 14.

Two children had ASD+ADHD and two could read by using print size 14.

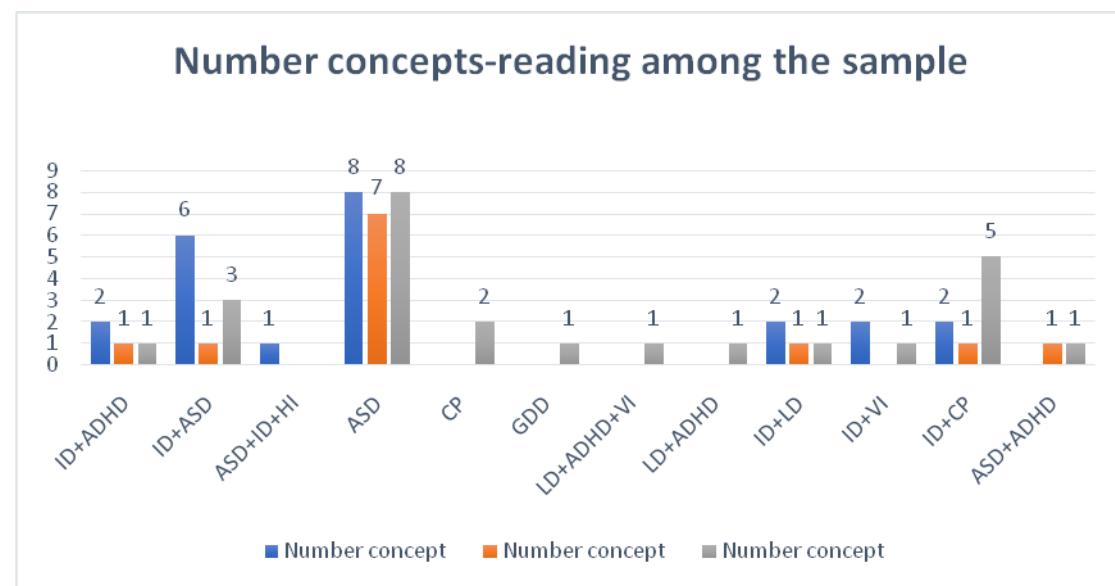
The results call for a serious intervention to improve the reading skills of the children multiple disabilities.

**Table 1.5 and Figure 1.5** gives a glimpse on the number concept-reading among the sample.

**Table 1.5: Number concepts-reading among the sample.**

<b>Sample</b>	<b>Number concept</b>						<b>Grand Total</b>	
	<b>No response</b>	<b>%</b>	<b>Wrote Counting</b>	<b>%</b>	<b>Object counting</b>	<b>%</b>		<b>%</b>
ID+ADHD	2	3.3	1	1.6	1	1.6	4	6.6
ID+ASD	6	10	1	1.6	3	5	10	16.6
ASD+ID+HI	1	1.6	-	-	-	-	1	1.6
ASD	8	13.3	7	11.6	8	13.3	23	38.3
CP	-	-	-	-	2	3.3	2	3.3
GDD	-	-	-	-	1	1.6	1	1.6
LD+ADHD+VI	-	-	-	-	1	1.6	1	1.6
LD+ADHD	-	-	-	-	1	1.6	1	1.6

ID+LD	2	3.3	1	1.6	1	1.6	4	6.6
ID+VI	2	3.3	-	-	1	1.6	3	5
ID+CP	2	3.3	1	1.6	5	8.3	8	13.3
ASD+ADHD	-	-	1	1.6	1	1.6	2	3.3
<b>Grand Total</b>	<b>23</b>	<b>38.3</b>	<b>12</b>	<b>20</b>	<b>25</b>	<b>41.7</b>	<b>60</b>	<b>100</b>



**Figure 1.5: Number concepts-reading among the sample**

The number concept of the children was assessed in terms of wrote counting and object counting.

The ability of the (children) sample's Number concept -reading was assessed. Around 38.3% of the sample could not respond at all; 20% of the sample could wrote count and 41.7% of the sample could count objects.

While considering the sample who could not respond at all had a break up of 13.3 % with ASD; 10% with MR+ASD; 3.3% with ID+ADHD, ID+LD, ID+VI, ID+CP; 1.6% with ASD+ID+HI each.

The sample who knew wrote counting had a breakup of 11.6% with ASD; 1.6% with ID+ADHD, ID+ASD, ID+LD, ID+CP, ASD+ADHD each.

Around 13.3% of the sample had ASD could perform at the highest level of object counting, followed by 8.3% with ID+CP, 5% with ID+ASD, 1.6% with ID+ADHD, GDD, LD+ADHD+VI, LD+ADHD, ID+LD, ID+VI & ASD+ADHD each.

One sample who had MR+ADHD could knew object counting; one could knew number counting and the other two could not respond at all.

The majority (60%) of the people who had ID+ASD (6 people) could not respond at all; one wrote count the number; three could count the objects.

Only one child had ASD+ID+HI and he could not respond at all.

The majority of the sample had the single spectrum disorder ASD. Around 35% of the children who had ASD could count the object counting; 31% of them had equal breakup of (~7%) performance of numbers by counting; 35% of the sample did not respond at all.

The sample consisted of 2 children with CP, two could count objects.

There was only one sample with GDD, LD+ADHD and LD+ADHD+VI each and could count objects.

Four children had ID+LD, two could not respond at all; one could recite wrote counting and the other one could count objects.

Out of three children who had ID+VI, two could not respond at all; one could count objects.

Eight children had ID+CP out of which two could not respond at all; one could recite wrote count and the other five could count objects.

Two children had ASD+ADHD and the one could recite number counting; and the other one could count objects.

The results call for a serious intervention to improve the reading mode of the children multiple disabilities.

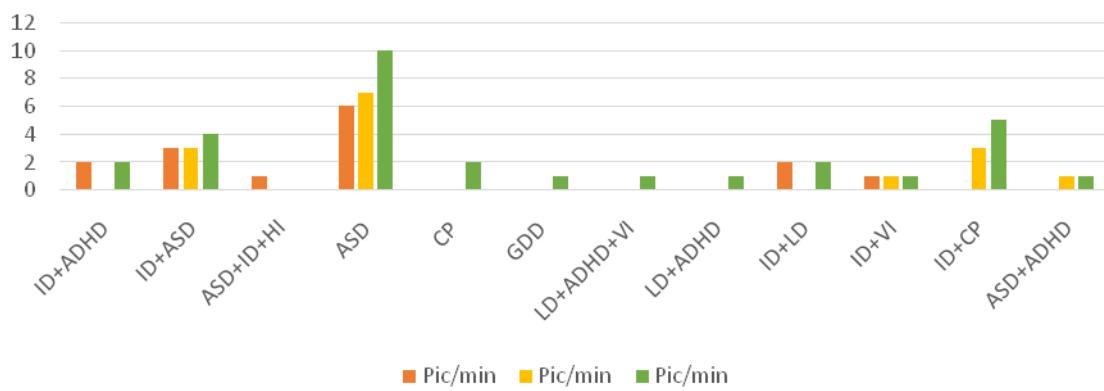
**Table 1.6 Figure 1.6** gives a glimpse on the ability of selected sample with Multiple disability with reference to picture reading.

**Table 1.6: Selected sample with Multiple disability with reference to picture reading.**

Sample	Pic/min						Grand Total	
	0	%	1-10	%	11-20	%		%
ID+ADHD	2	3.3	-	-	2	3.3	4	6.6
ID+ASD	3	5	3	5	4	6.6	10	16.6
ASD+ID+HI	1	1.6	-	-	-	-	1	1.6
ASD	6	10	7	11.6	10	16.6	23	38.3
CP	-	-	-	-	2	3.3	2	3.3
GDD	-	-	-	-	1	1.6	1	1.6
LD+ADHD+VI	-	-	-	-	1	1.6	1	1.6
LD+ADHD	-	-	-	-	1	1.6	1	1.6
ID+LD	2	3.3	-	-	2	3.3	4	6.6
ID+VI	1	1.6	1	1.6	1	1.6	3	5

ID+CP	-	-	3	5	5	8.3	9	15
ASD+ADHD	-	-	1	1.6	1	1.6	2	3.3
<b>Grand Total</b>	<b>15</b>	<b>25</b>	<b>15</b>	<b>25</b>	<b>30</b>	<b>50</b>	<b>60</b>	<b>100</b>

**selected sample with Multiple disabilities with reference  
to picture reading**



**Figure 1.6: Selected sample with Multiple disabilities with reference to picture reading.**

The ability of the children to read pictures was assessed. Simple flash cards were shown to the children that contain pictures of familiar objects like apple, ball etc. The sample were expected to utter the word on looking at the picture on the flash card. The words uttered were calculated per min.

Around 25% of the sample could not read any picture at all; 25% of the sample could read at the rate of 1 to 10 pictures; 50% of the sample could read at the rate of 11 to 20 pictures.

While considering the sample who could not read at all had a breakup of 10 % with ASD; 5% with ID+ASD; 3.3% with ID+LD, ID+ADHD and 1.6% with ASD+ID+HI, ID+VI each.

The sample who could read at the rate 1-10 pictures /min (25%) had a breakup of 11.6%with ASD; 5% with ID+CP &ID+ASD each and 1.6% with ID+ADHD, ID+VI each.

Around 50% of the sample could perform at the highest reading speed at the rate of 11-20 pictures had a breakup of 16.6 % with ASD; 8.3% with ID+CP; 6.6% with ID+ASD; 3.3% with ID+LD, CP, ID+ADHD each; 1.6% with GDD, LD+ADHD+VI, LD+ADHD, ID+VI, ASD+ADHD each.

Two sample who had ID+ADHD could read 11-20 pictures and two could not read at all.

The majority (60%) of the people who had ID+ASD (3 people) could not read at all. Out of 10 sample who had ID+ASD three could read at the rate of 1-10 words; five could read at the rate of 11-20 words.

Only one child had ASD+ID+HI and could not read at all.

The majority of the sample had the single spectrum disorder ASD. Around 27% of the children who had ASD could not read at all; almost 30% of them had breakup of (~7%) performance at the rate 1-10 words; 43% of the children could read at the rate of 11-20 words.

The sample consisted of 2 children with CP, two could read at the rate of 11-20 words.

There was only one sample with GDD, LD+ADHD+VI, LD each and performed at the rate of 11-20 words.

Four children had ID+LD, two could read at the rate of 11-20 words; and two could not read at all.

Out of three children who had ID+VI, one could not read at all; one could read at the rate of 1-10 words; one could read at the rate of 1-10 words.

Eight children had MR+CP out of which five could read at the rate of 11-20 words; three each read at the rate of 1-10 words.

Two children had ASD+ADHD, one could read at the rate of 11-20 words; one each read at the rate of 1-10 words.

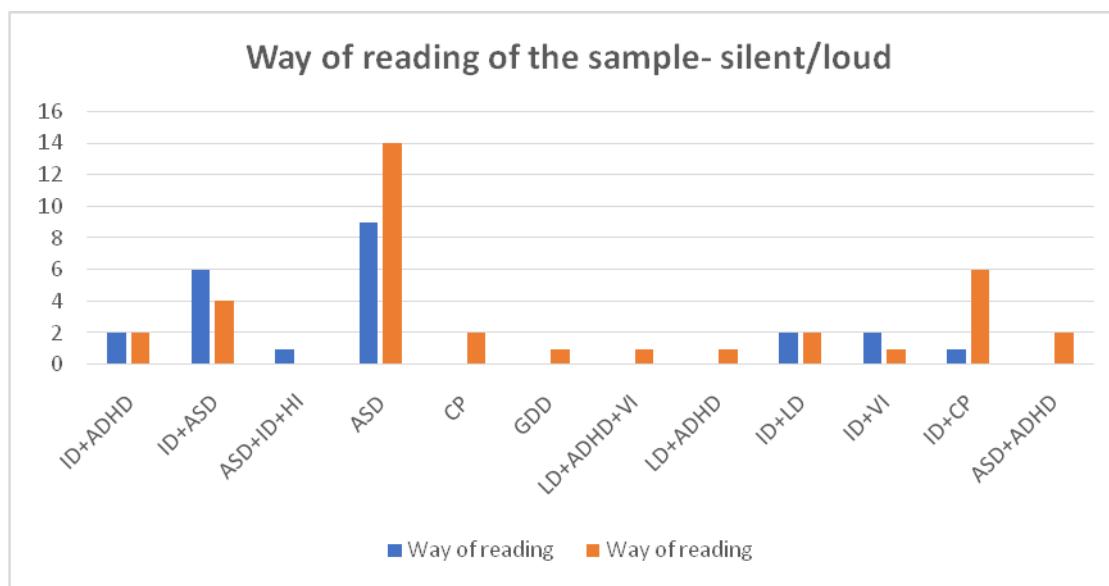
The results call for a serious intervention to improve the picture reading skills of the children multiple disabilities.

**Table 1.7and Figure 1.7gives a glimpse on the way of reading of the sample -silent/loud.**

**Table 1.7: Way of reading of the sample -silent /loud.**

<b>Sample</b>	<b>Way of reading</b>				<b>Grand Total</b>	
	<b>Silent reading</b>	<b>%</b>	<b>Loud reading</b>	<b>%</b>		<b>%</b>
ID+ADHD	2	3.3	2	3.3	4	6.6
ID+ASD	6	10	4	6.6	10	16.6
ASD+ID+HI	1	1.6	-	-	1	1.6
ASD	9	15	14	23.3	23	38.3
CP	-	-	2	3.3	2	3.3
GDD	-	-	1	1.6	1	1.6
LD+ADHD+VI	-	-	1	1.6	1	1.6

LD+ADHD	-	-	1	1.6	1	1.6
ID+LD	2	3.3	2	3.3	4	6.6
ID+VI	2	3.3	1	1.6	3	5
ID+CP	1	1.6	6	10	8	13.3
ASD+ADHD	-	-	2	3.3	2	3.3
<b>Grand Total</b>	<b>24</b>	<b>40</b>	<b>36</b>	<b>60</b>	<b>60</b>	<b>100</b>



**Figure 1.7: Way of reading of the sample- silent/loud**

The way of reading that was comfortable for the children silent/loud reading was explored. Around 40% of the sample could read silently; 60% of the sample read louder.

While considering the sample who could read silently had a breakup of 15 % with ASD; 6% with ID+ASD; 3.3% with ID+ADHD, ID+LD, ID+VI, ID+CP and 1.6% with ASD+ID+HI each.

The sample who could read at louder (60%) had a breakup of 23.3%with ASD; 10% with ID+CP; 6.6% ID+ASD each; 3.3% with ID+ADHD, CP, ID+LD each; and 1.6% with GDD, LD+ADHD+VI, LD+ADHD, ID+VI each.

Two sample who had ID+ADHD could read silently and two could read louder.

The majority (60%) of the people who had ID+ASD (6 people) could read silently. Out of 10 sample who had ID+ASD ten could read louder.

Only one child had ASD+ID+HI and he read silently.



The majority of the sample had the single spectrum disorder ASD. Around 39% of the children who had ASD could read silently; almost 61% of them could read louder.

The sample consisted of 2 children with CP, they could read at louder.

There was only one sample with GDD, LD+ADHD+VI, LD each and performed could reading.

Four children had ID+LD, two could read at silently and two could read louder.

Out of three children who had ID+VI, two could read at silently; one could read louder.

Eight children had ID+CP out of which two could read at silently and six could read at louder.

Two children had ASD+ADHD read at louder.

The results call for a serious intervention to improve the picture reading skills of the children multiple disabilities.

## **CONCLUSION**

Reading increases concentration, which benefits in the long run by keeping the minds sharp and enhances memory; Children who read frequently have better memories and can remember the intricacies of a remember for longer periods of time. Reading is crucial because it develops empathy, knowledge, and the ability to use your imagination.

A child's early learning through appropriate diagnosis and intervention provides the foundation for later learning, when the child is likely to go in for learning more complex skills. Even though children with Multiple disability has the ability to acquire language and communication skills, appropriate training and follow up is required to support and enhance learning.

Overall, the results highlight the need for **systematic reading intervention programs**, adapted instructional materials, and individualized teaching approaches for children with multiple disabilities.

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