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### Exploring the prevalence of children with communication disorders and their academic performance

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#### Abstract

Communication is the active process of exchanging information, thoughts, desires and ideas. The capacities to receive, send, process and grasp ideas or spoken, nonverbal, and graphic symbol systems is impaired by a communication disorder. A communication issue may show up in speech, language or hearing functions. Our communication behaviour is mainly divided into two components – expressive behaviour (production of the sound, speech, language) and receptive behaviour (understanding and responding). Communication is important in children's academic performance. Children with communication disorders took education in both inclusive and special education system. Therefore, to know their prevalence and academic performance, a study entitled "Exploring the prevalence of children with communication disorders and their academic performance". The secondary data from office of the Samagra Siksha, Jorhat and school records revealed that a higher percentage of children with communication disorder (38.19%) were enrolled in Jorhat block. Most of the children with communication disorder under the study are found under the low performer category (40.4% and below).

**Keywords:** Children with communication disorders, academic performance, low performance, average performance, high performance

#### Introduction

Communication is the essence of human life through which we socialize in our day-to-day lives. The development of speech, language and hearing components is essential for verbal communication. Mangal *et al.*, (2012) <sup>[9]</sup> learning takes place through the process of communication. Hearing, speech and language skills are absolutely essential to the social development and academic success of a child. Therefore, disturbances in terms of producing speech and language, along with their hearing and comprehension, may work as potent factors for creating communication disorders among children.

Mangal *et al.*, (2012) <sup>[9]</sup> communication disorders are an "umbrella" term to describe hearing, language and speech disorders that create an impairment in the ability to receive, process, and express verbal and non-verbal information. Children with communication disorders are those who were identified with hearing impairment and speech-language disability under the rights of persons with disability Act, 2016 with a disability certificate (children with a minimum disability of 40%).

Hearing impairment is characterized by difficulty hearing sound waves at 60 decibels or higher during conversation. Individuals who do not react to environmental sounds after birth and struggle with understanding speech or

communicating may be considered hearing impaired according to the Rights of Persons with Disabilities Act (RPWD Act) of 2016. Speech-language disability encompasses conditions that hinder a person's ability to produce sounds effectively, while language disorders interfere with understanding or using language, including difficulties with grammar or vocabulary.

According to National Educational Policy, NEP 2020 equitable and inclusive education aims to ensure that no child loses any opportunity to learn and excel together in the same school because of the circumstances of disabilities. Presently Samagra Siksha cover children with special need from class I-XII to promote in inclusive education. Special education known as special need education is the practice of educating students in a way that accommodates their individual differences, disabilities, special needs (Wikipedia).

According to the Government of India's nationwide sample survey for the 2011 census, speech-language impairment (7.5%) came in fifth while hearing impairment (18.9%) was recognized as the second most common disability and only (61%) of special children aged 5 to 19 were likely to complete their education. While (12%) had previously attended, 27 per cent had never gone. Therefore, an attempt was made to observe the prevalence and academic

performance of children with communication disorders.

**Objectives**

1. To find out the prevalence of children with communication disorders in inclusive and special education system
2. To find out the prevalence of both the gender of children with communication disorders in inclusive and special education system
3. To find out the academic performance of children with communication disorders
4. To find out the academic performance of children with communication disorders in relation to their class

**Review of Literature**

The study entitled “Epidemiology of communication disorders and their role in rehabilitation” (Devadiga *et al.*, 2014) <sup>[5]</sup> mentioned that the prevalence was higher for hearing disorders (62%) followed by language disorders (24%) and speech disorders (14%). According to Reddy *et al.*, 2015 <sup>[7]</sup> mentioned that a total of 2010 primary school children had participated in the screening program for communication disorders. The results of the study revealed that around 11.5% of school children had some form of communication disorders. Among these, distribution of language disorders (7.4%) was in greater proportion when compared to speech disorders (3.8%). According to Adebayo *et al.* (2014) <sup>[2]</sup>, 18.8 percent of pupils had merits in the school end-of-term examination, 50 percent obtained pass grades, and 31.2 percent failed. This is a clear indication that the majority of the pupils with speech and language disorders performed at a lower level. The sample consisted of 48 pupils with speech and language disorders who were purposefully selected from six schools. The study was conducted by Konadath *et al.*, (2013) <sup>[6]</sup> males showed a higher prevalence of communication disorders as compared to females.

**Research design**

The study was conducted on total 156 no. of school children with communication disorders who were identified as having hearing impairments or speech-language disabilities and were studying in classes II–IX in inclusive schools and special schools of Jorhat district, Assam. Jorhat district comprises of five blocks and the highest prevalence of children with communication disorders was selected for the present study is Jorhat block (Samagra Shiksha, Jorhat, Assam, 2021-22). The total no. of schools was 64 in Jorhat block out of which 8 no. of schools were found non-respondent sample who showed unwillingness in participating in the research. Therefore, the total 56 no. of schools considered. The total 165 no. of children with communication disorders found in Jorhat block and 9 no. of

samples were found non-respondent because parents of the samples showed unwillingness in participating in the research. Therefore, the total sample for the study was 156 no. of children with communication disorders. Frequency and percentages were calculated to find out the prevalence, background information, academic performance of children with communication disorders and Cramer’s value was calculated to find out the academic performance of children with communication disorders in relation to their class.

The academic performance is the measurement of student accomplishment in terms of marks across various academic subjects of instructional environment specifically in educational institute. In this study, the academic performance means the previous academic progress report of total marks obtained in annual examination by the children with communication disorders in various academic subjects of schools. The grades given in annual examination of the schools included under the study were –

A+ grade (91-100%), A grade (81-90%), B grade (61-80%), C grade (41-60%), D grade (40% & below) (Present school grading system, Jorhat).

Considering the above grade categories, the academic performance in this study categorized as High performance (61-100%)

Average performance (41-60%)

Low performance (40% & below)

**Methodology**

Researchers are bound by rules and ethics. As the researcher used some secondary data in the research, prior to the process of data collection, the researcher has taken due permission from the concerned authority in Samagra Shiksha, Jorhat and district social welfare office, Jorhat to conduct the study. After receiving the consent from the authorities, consent was sought from the principals of selected schools for data collection. Confidentiality of findings and privacy of the participants were protected.

Secondary data on the prevalence of children with communication disorders in inclusive and special schools of Jorhat district were collected from concerned authority of office of the Samarga Shiksha, Jorhat. The next step was to visit the selected schools by the researcher and the previous year’s (2022-23) academic record, background information of selected sample children with communication disorders were collected from the class teacher with the help of the prepared checklist.

**Results and Discussion**

**Prevalence of children with communication disorders in inclusive and special education system**

This section of the study deals with the secondary data on prevalence of children with communication disorders in Jorhat district.

**Table 1:** Distribution of the schools of Jorhat district according to the blocks

Characteristics	Name of blocks	No. of schools (N=220)			
		Inclusive schools (n=217)		Special schools (n=3)	
		Frequency	Percentage	Frequency	Percentage
Blocks	Central Jorhat block	44	20.2	0	0.0
	East Jorhat block	43	19.8	0	0.0
	Jorhat block	62	28.5	2	66.6
	North-west Jorhat block	32	14.7	0	0.0
	Titabor block	36	16.5	1	33.3

Source: Samagra Shiksha, Jorhat, Assam (2021-22)

Results from Table 1 shows that a total of 220 no. of inclusive schools are present in Jorhat district. Among all blocks a higher number of inclusive schools (28.5%) were found in Jorhat block (Samagra Shiksha, Jorhat, Assam, 2021–2022). This may be due to the fact that inclusive schools are an important movement according to the National Educational Policy (NEP), which means “inclusion

of all.” The inclusive schools may also be situated near, which makes it convenient for children to visit school every day. This is supported by the findings of a report on a study of Kamrup and Kamrup (METRO) District” (Sishu Sarothi, 2017) [8], which revealed that (52.2%) of people with disabilities went to inclusive schools and 6.4 per cent went to special schools.

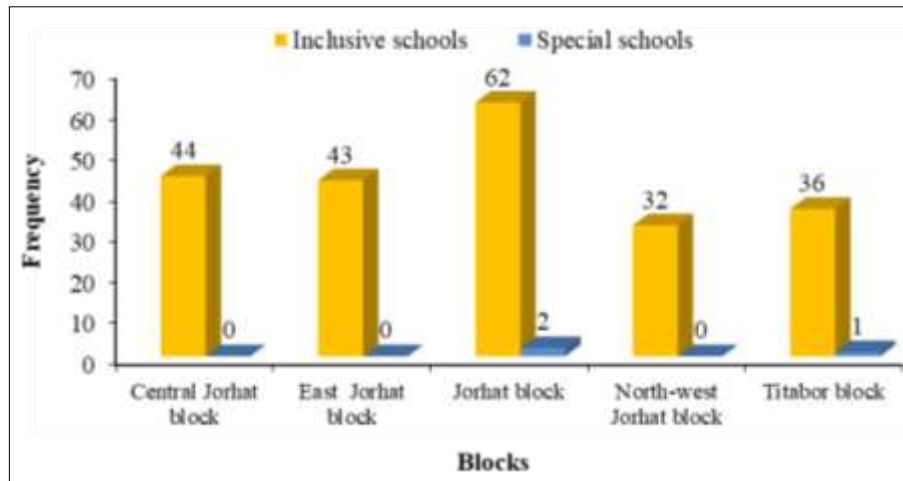


Fig 1: Distribution of the schools of Jorhat district according to the blocks

Table 2: Distribution of the children with communication disorders in Jorhat district according to blocks

Characteristics	Name of blocks	No. of children with communication disorder (N=432)				Total	
		Hearing Impaired(n=275)		Speech-language disability(n=157)		Frequency	Percentage
		Frequency	Percentage	Frequency	Percentage		
Blocks	Central Jorhat block	44	16.3	22	14.0	66	15.27
	East Jorhat block	27	9.8	28	17.8	55	12.73
	Jorhat block	103	37.4	62	39.4	165	38.19
	North-west Jorhat block	19	6.9	21	13.3	40	9.2
	Titabor block	82	29.8	24	15.2	106	24.53
	Total	275	63.6	157	36.3	432	100.0

Source: Samagra Shiksha, Jorhat, Assam (2021-22)

Results from Table 2 shows that in Jorhat district a total of 432 numbers of children with communication disorder were present in both inclusive and special schools. A higher percentage of children with communication disorders were found in Jorhat block (38.19%) (Samagra Shiksha, Jorhat,

Assam, 2021–2022). This is supported by the findings on the total population of people with disabilities in Assam as per the 2011 census data, which revealed the hearing impairment was 101577 and the speech impairment was 39750.

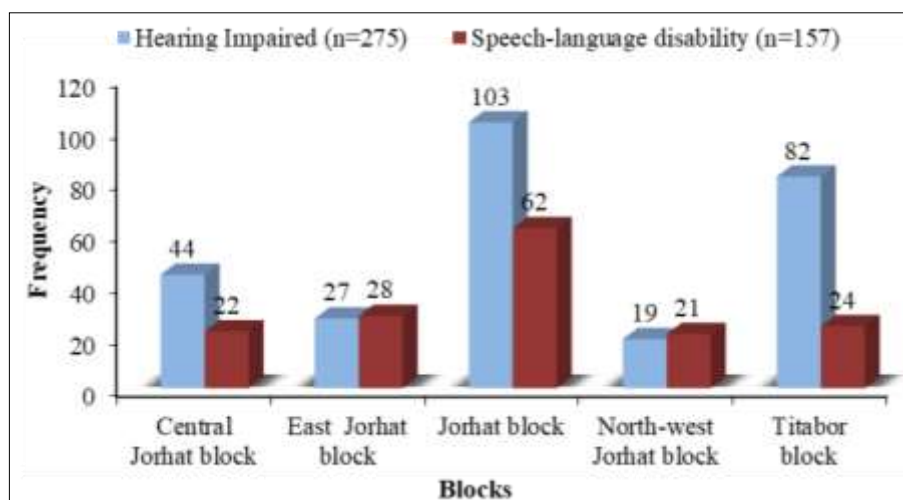


Fig 2: Distribution of the children with communication disorders in Jorhat district according to blocks

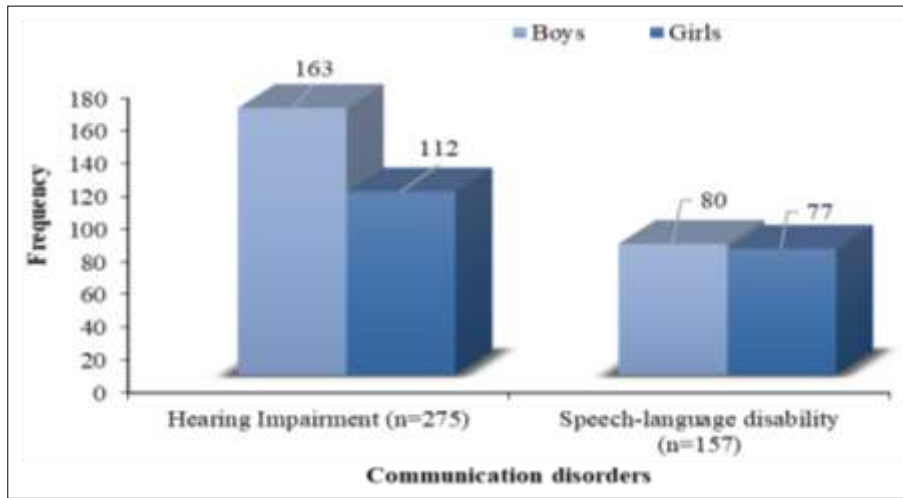
**Table 3:** Distribution of the children with communication disorders according to their gender

Characteristics	Categories	No. of children with communication disorders in schools (N=432)			
		Hearing Impairment(n=275)		Speech-language disability(n=157)	
		Frequency	Percentage	Frequency	Percentage
Gender	Boys	163	59.2	80	50.9
	Girls	112	40.7	77	49.0

Source: Samagra Shiksha, Jorhat, Assam (2021-22)

Results from Table 3 shows that the percentage of boys was higher (59.2%) as compared to girls (40.7%) among all children with communication disorders studied in different schools of Jorhat district (Samagra Shiksha, Jorhat, Assam,

2021–2022). This is supported by the findings of the 2011 census of India, where males outnumbered females in both hearing (males: 52.8%, females: 47.2%) and speech impairment (males: 56.25%, females: 43.8%).



**Fig 3:** Distribution of the children with communication disorders according to their gender

**Background information of the respondents**

This section of the study deals with the background

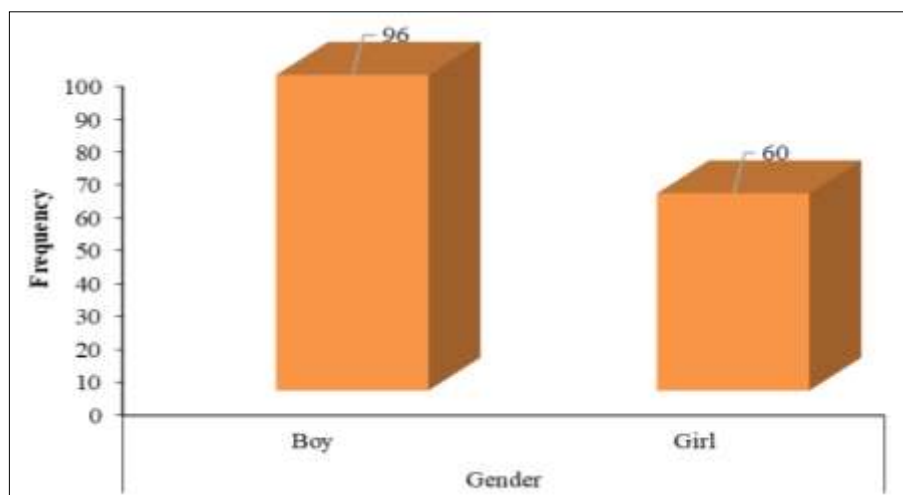
information of the children with communication disorders.

**Table 4:** Distribution of the background information of children with communication disorders according to their gender

Characteristics	Categories	No. of child with communication disorders (n=156)	
		Frequency	Percentage
Gender	Boy	96	61.5
	Girl	60	38.4

The findings from Table 4 shows that boys were found to be the highest (61.5%) as compared to girls (38.4%). This finding can be supported by the 2012 National Health

Interview Survey. According to the report, boys (9.6%) are more likely to have communication disorders as compared to girls (5.7%).



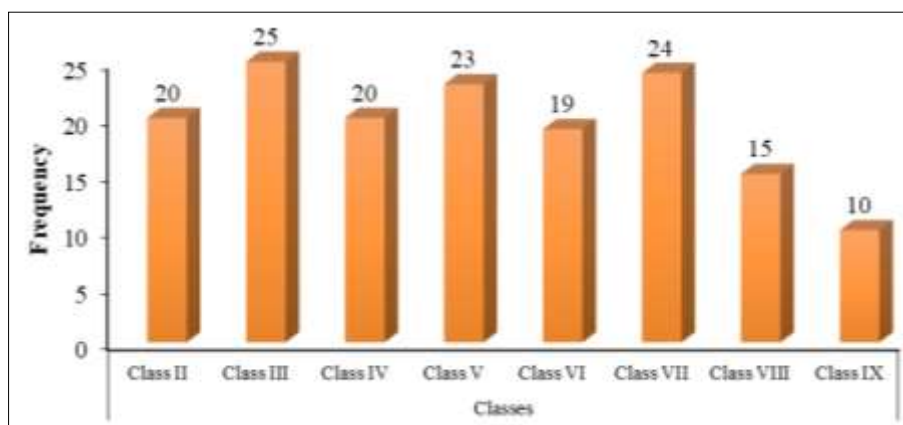
**Fig 4:** Distribution of the background information of children with communication disorders according to their gender

**Table 5:** Distribution of the background information of children with communication disorders according to their class

Characteristics	Categories	No. of child with communication disorders (n=156)	
		Frequency	Percentage
Classes	Class II	20	12.8
	Class III	25	16.0
	Class IV	20	12.8
	Class V	23	14.7
	Class VI	19	12.2
	Class VII	24	15.4
	Class VIII	15	9.6
	Class IX	10	6.4

The findings of Table 5 indicated that among all children with communication disorders who studied in classes II–IX, a higher percentage of children were found to study in classes III (16.0%) and VII (15.4%), respectively, and the lowest percentage of children were observed in classes IX (6.4%) and VIII (9.6%), respectively. Findings of the study

showed a gradual decline in the number of children attending upper classes. This may be due to the fact that the sample children with communication disorders may have difficulties studying the upper-level educational curriculum in the prevailing school environment under the study.



**Fig 5:** Distribution of the background information of children with communication disorder according to their classes

**Academic performance of children with communication disorders**

The academic performance is the measurement of student

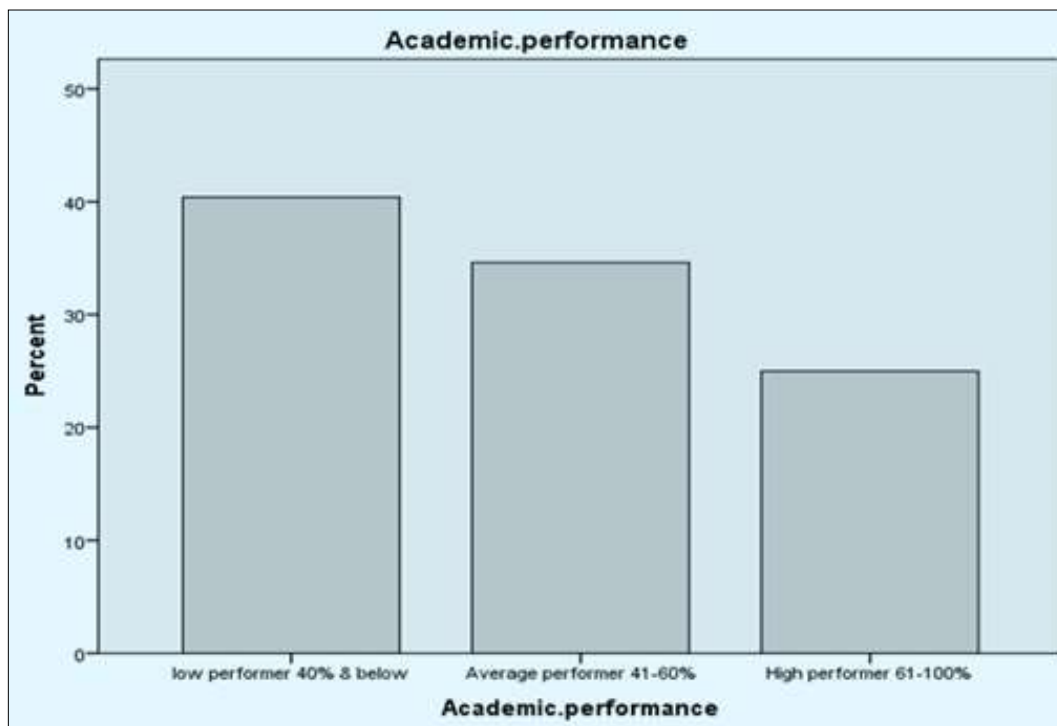
accomplishment in terms of marks across various academic subjects of instructional environment specifically in educational institute.

**Table 6:** Distribution of the academic performance of children with communication disorders

Characteristics	Categories	No. of children (n=156)	
		Frequency	Percentage
Academic performance	Low performance (40% & below)	63	40.4
	Average performance (41-60%)	54	34.6
	High performance (61-100%)	39	25.0

Results from Table 6 revealed that a higher percentage of children with communication disorders were in the low-performance group (40.4%), and only 25 percent were found to be in the high-performance group. This may be due to the fact that communication disorders in children affect academic performance because of difficulty hearing and

expressing themselves. A study by Hardman, Drew, and Egan (2002) [11] reported that children with speech and language disorders did not frequently perform as expected at grade level because of their continuous struggles with reading and low achievements in tests.



**Fig 6:** Distribution of academic performance in children with communication disorders

**Academic performance of children with communication disorders in relation to their class**

To find out the association between the academic performance of school children with communication disorders and classes of children with communication disorders; Cramer’s v test value was measured which is a

chi-square based measure of association. Cramer’s v test value determines the effect size between the two variables. A Cramer’s value ranges from 0 to 1. A value of 0 indicates no effect size, 0.2 or less indicates weak effect size, from 0.21 to 0.3 indicates moderate effect size, a value above 0.3 indicates strong effect size.

**Table 7:** Distribution in academic performance of school children with communication disorders in relation to their class

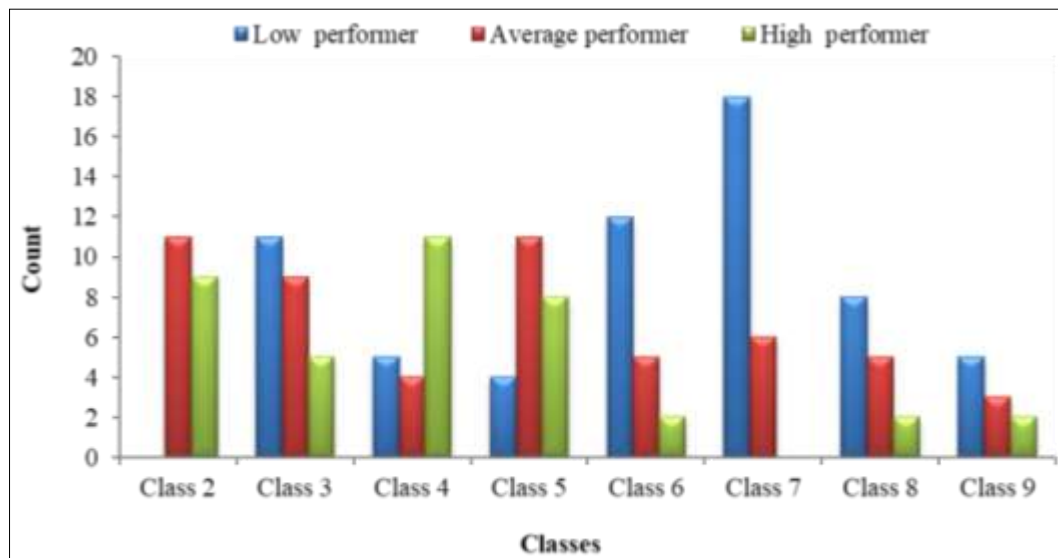
Classes of school children with communication disorders (n=156)	Academic performance of school children with communication disorders (n=156)			Cramer's value	Significant p value
	Low Performer	Average Performer	High Performer		
Class 2 (n=20)	0 (0.0)	11 (55.0)	9 (45.0)	.395	.000 S**
Class 3 (n=25)	11 (44.0)	9 (36.0)	5 (20.0)		
Class 4 (n=20)	5 (25.0)	4 (20.0)	11 (55.0)		
Class 5 (n=23)	4 (17.4)	11 (47.8)	8 (34.8)		
Class 6 (n=19)	12 (63.2)	5 (26.3)	2 (10.5)		
Class 7 (n=24)	18 (75.0)	6 (25.0)	0 (0.0)		
Class 8 (n=15)	8 (53.3)	5 (33.3)	2 (13.3)		
Class 9 (n=10)	5 (50.0)	3 (30.0)	2 (20.0)		

\*\*Significant

Findings in table 7 shows the results where the cramer’s value is .395 which indicated a strong effect size between the variables-academic performance of school children with communication disorders and their class. The significant value is .000 at 1% level of significance which is less than 0.05. This indicated that there exists significant relationship between academic performance of school children with communication disorders and their class. High academic performance and average academic performance of children with communication disorders seen in primary classes and

low academic performance were seen in higher classes. It may be due to the reason that as the class gradually become higher the content of the curriculum also increases. The children with communication disorders initially can adjust with the syllabus in primary classes but as soon as the syllabus got tough the ability to understand become slower because of their communication and hearing disorders. Study in this area reported that there was a significant difference in the academic achievement of students from large and small classes.





**Fig 7:** Distribution of school children with communication disorders academic performance in relation to their classes

### Conclusion

The study revealed that a total of 220 no. of inclusive schools are present in Jorhat district. In Jorhat district a total of 432 numbers of children with communication disorder were present in both inclusive and special schools. The percentage of boys was higher (59.2%) as compared to girls (40.7%) among all children with communication disorders studied in different schools in Jorhat district. Prevalence of children with communication disorder in the Jorhat block of Jorhat district where a higher number of inclusive schools (28.5 percent) were found in Jorhat block. A higher percentage of children with communication disorders were also found in Jorhat Block (38.19%).

According to the background information of respondents (sample of Jorhat block only), boys were found to be the highest (61.5%) as compared to girls (38.4%). A higher percentage of children with communication disorders were in the low-performance group (40.4%). A higher percentage of children with communication disorders were found to study in classes III (16.0%) and VII (15.4%) respectively and the lowest percentage of children were observed in classes IX (6.4%) and VIII (9.6%), respectively. The Cramer's value .395 indicated a strong effect size between the variables and significant relationship between academic performance of school children with communication disorders and their class.

The study suggested that an enriched school environment with good-quality assistive devices such as hearing aids etc. are also important for the academic accomplishment of children with communication disorders. New technologies and emerging practices have created new requirements for educational buildings. As a result, new approaches to building learning environments must be developed that both create better spaces for children and increase the efficiency of investments in educational infrastructure (Barrett *et al.*, 2019) <sup>[3]</sup>.

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