

Proficiency in Phonological Awareness Performed by Bangladeshi Children with Intellectual Disabilities

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Abstract

This study analyzes the phonological awareness of children with intellectual impairments in Bangladesh. This study's data was collected from Proyash School, Dhaka Cantonment. The participants of this study were eight children with Intellectual Disabilities ranging from 8 to 12 years. The data was extracted using phonological skill tasks such as Rhyme detection, Alliteration, Syllable segmentation, and first sound detection. One set of questions which is both open and closed-ended was used to extract data from the children's class teacher. The finding of this research suggests that Bengali children with intellectual disabilities have phonological awareness skills deficiency. The results show that they have significantly poor skills in phonological awareness. That may hinder different types of development, language deficiency, reading deficiency, as well as general conversation deficiency, etc. Their class teacher has mentioned that they can improve their phonological skill if they have proper guidance and environment.

Keywords: Phonological awareness skills, intellectual disabilities, phonological awareness, special child

1. Introduction

Intellectual disability is a lifelong condition and it can affect a child's cognitive, social, and communication ability, which include speech, daily life skills, academic skills, etc. Intellectual disability is defined by the restriction of cognitive abilities and in terms of adaptable conduct (Matson, 2019). The assessment of intellectual disability is based on the patient's general case history, intellectual ability, and adaptive function ability. Standardized tests are used to assess both cognitive and adaptive performance to identify whether there are any limitations available or not. In contrast, in a small group of people with severe intellectual disability, a particular biological cause will be identified. According to Patel et al. (2020), more than 75% of people with intellectual impairment have mild intellectual impairment, indicating that the likelihood of finding an underlying particular cause is decreased. They have also added that, during the making of a treatment plan, it is important to note down the genesis, intensity, mental abilities, and adaptive function that differ among people with intellectual disabilities. Apart from facilitating and overseeing consultation services and community-based care, physicians play a vital role in the evaluation, management, and avoidance of associated medical conditions.

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Phonological awareness is the conscious understanding of the syllables and phonemes, the smallest sound components, that make up words. Many other abilities, such as the capacity to rhyme, match words with their initial sounds, and combine sounds into words, are tested (Berch et al., 2018). An essential underlying language skill for reading and writing new words is phonological awareness. In kindergarten through third grade, phonetic coding, a component of auditory processing /Ga/, is particularly crucial. (Flanagan & Alfonso, 2016).

This research has been designed to investigate the phonological awareness abilities of children with intellectual handicaps in Bangladesh. At the same time, this research has explored their understanding of phonological awareness.

2. Study Objectives

The objectives of the study are-

- a) To explain the proficiency in phonological awareness performed by Bangladeshi children with intellectual disabilities.
- b) To identify which phonological skills are most affected in children with intellectual impairment.

3. Phonological Awareness Skill

To get a coherent pronunciation of the components while reading unknown words, one must have the ability to blend; to spell unfamiliar words, one must have the ability to segment; one must separate the phonemes in order to choose the graphemes (Flanagan & Alfonso, 2016). According to Flanagan and Alfonso (2016), two crucial phonological awareness skills that support fluent word identification and permit understanding are the capacity to combine individual sounds into spoken words and to separate those spoken words into their constituent sounds. Studying phonological awareness within the larger context of phonology is important because it reveals that children possess specific phonological information even before they become aware of the phonological structure of words (Bauman & Waengler, 2012). The basic of reading is phonological awareness. It enables users to recognize and interact with spoken language sounds. That contains:

1. Selecting words that rhyme
2. Counting the syllables in a word
3. Repetition of the sound "Susie sold six salami sandwiches" is noted.

Most children naturally learn phonological awareness. However, reading difficulties may arise like dyslexia, which is referred to as learning difficulty. Children with learning difficulties need help from professionals or special attention from their teachers, parents, or caregivers to recognize and manipulate word sounds.

4. Intellectual Disability

According to Huizen, J. (2020), cognitive disability is another name for intellectual disability. The phrase "mental retardation," which is now pejorative, was once used to describe this disease. Of the whole world population, 1% to 3% population suffer from an intellectual impairment (Patel et al., 2020). This might affect how:

- Learning, judgment, problem-solving, abstract thought, memory, reasoning, and academic abilities are examples of intellectual functioning.
- Practical functioning, is the capacity to function and care for oneself on one's own, including taking care of one's own needs, managing one's finances, and carrying out activities at work, school, or home.
- Social judgment, communication, knowing and adhering to social rules and cues, comprehending the repercussions of one's actions, understanding the ability to make friends, and other abilities are all part of social functioning, which is the capacity to function normally in society.

5. Literature review

Phonological training is thought to play a significant influence on the improvement of reading abilities, according to a study by Cheung et al. (2001). They point out that bilingual children acquire phonological awareness earlier, but that if monolingual children receive phonological skill instruction for reading development, they eventually catch up. However, Durgunoglu (2002) contends that exposure to phonological abilities in their Language can help children understand them. Given the wealth of data that already exists supporting the value of phonological awareness training, it makes sense to start phonological awareness therapy as soon as feasible for kids who are deficient in this area.

According to Wise et al. (2010), the study's pattern of findings is comparable to those of learners who are usually developing. Similar to children in typical development, there was a strong correlation found between the measures of phonological awareness and reading achievement as well as vocabulary knowledge. The results showed that, after one and two school years, progress in word and non-word reading is predicted by phonological awareness and letter-sound knowledge at ages 6 to 8. These results imply that to promote reading in kids with mild to moderate ID of unknown origin, it is crucial to train phonological awareness abilities in conjunction with specific phonics instruction.

According to findings from long-term research, 75% of students who struggle with reading in third grade, especially when it comes to the growth of phonological awareness, will still be struggling readers by the end of high school (Flanagan & Alfonso, 2016).

6. Method

Since this study is directly connected to phonological skills, a qualitative research approach has been used to collect data. Therefore, interview sessions and observation were incorporated in order to obtain data. This was important since it takes careful observation to understand any behavior. Sometimes an interview session was necessary in order to get a clear picture in addition to observation. The viewpoints of the teachers were equally crucial for reflection and explanation of the complete circumstance. Interviewing them was required in this case in order to learn and gather important information.

a. Participants

The participants of this study were children with intellectual disabilities. They were 8-12 years old. They studied in Proyash Institute of Special Education, which is a school for special children situated in Dhaka Cantonment, Dhaka.

b. Stimuli

The following stimuli were used to extract data:

Table 6.1 Data collection stimuli

For the participants:	Stimuli
	1. Phonological skills task 2. Classroom observation
For teachers:	1. Questionnaire for teachers

c. Task and procedure

The participants were first requested to provide a brief autobiographical account. The questions that the researcher asked the participants about phonological skills are covered in the next chapter. students were instructed to retell about the rhymic words, alliteration, syllable segmentation, and first sound detection. Their answer was recorded and it is presented in the Appendix. Their classroom conduct was also keenly watched. During their classroom activities, the participants' interactions with their instructors and peers, as well as their focus, language skills, reading skills, phonemic skills, and answers to the teachers, were documented. To record their involvement and activity, a standardized "Observation checklist" (See appendix) was created. To gain a deeper understanding of their performances, one more interview session was held with the instructors. To interview the instructors one distinct set of questionnaires was

created. These interviews were quite helpful in learning more about the participants' phonological skills shortcomings. The appendix portion of the document includes all the questionnaires.

d. Data analysis

Every ID child's performance was recorded by the researchers once they had finished the interviews and observations. To acquire the anticipated findings, data from the children's teachers' interviews were also looked at the same time.

7. Result

This section reflects the analysis and interpretation of the responses of 8 participants illustrated in four different contexts. It also includes their teacher's perspectives. (The entire data are presented in the appendix section-Appendix 01)

a. Rhyme Detection

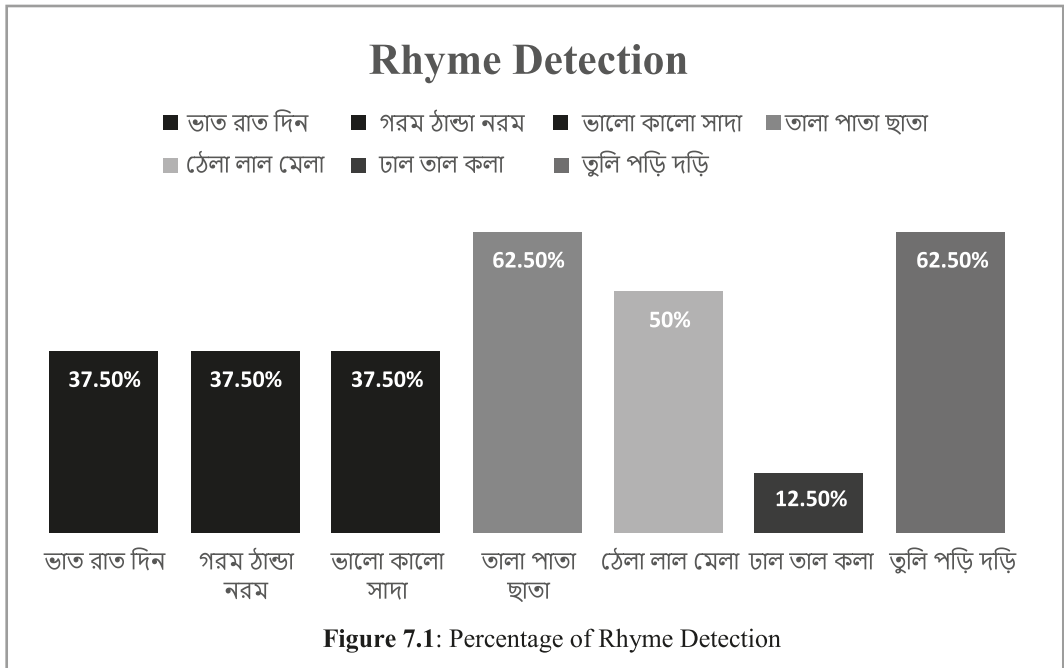
The task was identifying two rhyme sounds between three sounds. The result of the participant's responses is illustrated below:

Firstly, the result of 1st task between three sounds which are ভাত, রাত, (Vat, Rat) and দিন (Din) about 37.5% of the participants have identified ভাত, রাত (Vat, Rat) as rhymic sounds.

Table 7.1: List of sounds used for rhyme detection

শব্দ (Sounds)	শব্দ (Sounds)	শব্দ (Sounds)
ভাত	রাত	দিন
গরম	ঠান্ডা	নরম
ভালো	কালো	সাদা
তালা	পাতা	ছাতা
ঠেলা	লাল	মেলা
ঢাল	তাল	কলা
তুলি	পড়ি	দড়ি

For the second task among three sounds which are গরম, ঠান্ডা, নরম (Gorom, Thanda, Norom) and majority of the participants have identified গরম (Gorom) and নরম (Norom) as rhymic sounds.



A similar result is shown in the third task which is 37.5%. For the next four tasks, the participant identified rhymic sounds as like the previous task and their result percentages is 62.5%, 50%, 12.5%, and 62.5%.

b. Alliteration (Initial)

The participants had to find out two sounds among the three which are in initial alliteration. The result of their responses is illustrated below.

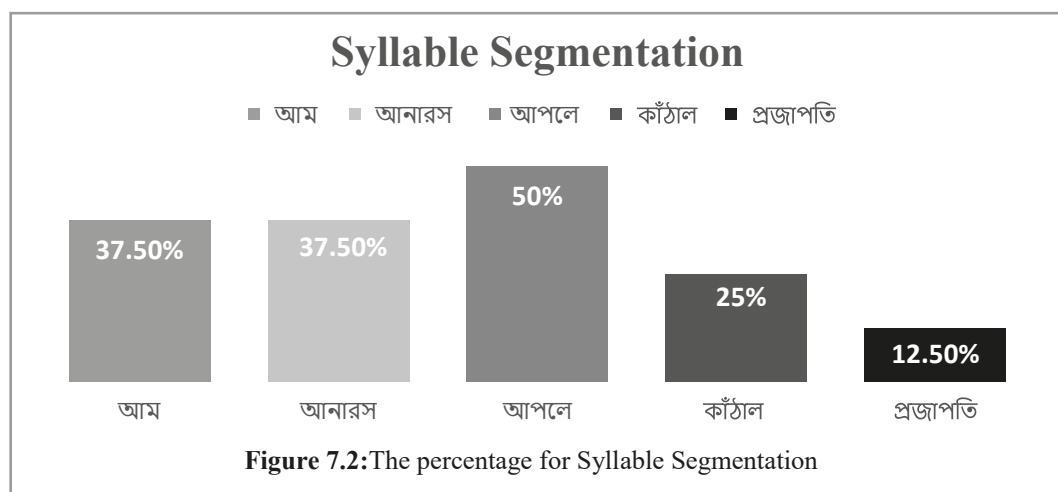
Table 7.2: List of the sounds used for identifying alliteration and the result

শব্দ (Sounds)	শব্দ (Sounds)	শব্দ (Sounds)	শব্দ (Sounds)
আমি	আমার	তুমি	৩৭.৫%
কাক	কাকা	মামা	১২.৫%
লাল	লবণ	নাক	১২.৫%
তাল	তালি	নালা	১২.৫%
মাছ	মাছি	আছি	৩৭.৫%
ঢাল	চাচা	মাচা	২৫%
টাকা	টক	লোক	৩৭.৫%
খাতা	খাল	কাল	২৫%

Firstly, the result of 1st task between three sounds which are আমি, আমার (Ami, Amar), and তুমি (Tumi) about 37.5% of the participants have identified আমি (Ami) and আমার (Amar) as initial alliteration sounds. For the second task among three sounds which are কাক, কাকা (Kak, Kaka), and gvgv (Mama) about 12.5% of the participants have identified কাক (kak) and কাকা (kaka) as initial alliteration sounds. A similar result is shown in the third and fourth tasks. For the next four tasks, the participant identified initial alliteration sounds like the previous task and the results are 37.5%, 25%, 37.5%, and 25%.

c. Syllable Segmentation

The participants had to find out the syllable segmentation of each word. The result of their responses is illustrated below.



The first task was to identify আম (Am) sounds syllable segment, and approximately 37.5% of the participants could identify it. Similarly, the next four sounds which are আনারস, আপেল, কাঁঠাল, প্রজাপতি (Anaros, Apple, Kathal, Projapoti) and their response is 37.5%, 50%, 25%, and 12.5%.

d. First Sound Detection

The participants had to detect the first sound of each word. The result of their responses is illustrated below.

Table 7.3: First Sound Detection

শব্দ (Sounds)	মালা	বাকা	কলা	পানি	রাত
First sound	/ম/	/ব/	/ক/	/প/	/র/
Percentage of understanding	৩৭.৫%	৭৫%	১২.৫%	৫০%	৩৭.৫%

The first task was to identify /g/ (/m/) sound in মালা (Mala) word, and 37.5% of the participants could identify it. Similarly, the next four sounds which are বাকা, কলা, পানি, রাত (Baka, kola, pani, Rat) and their response is 75%, 12.5%, 50%, and 37.5%.

e. Teacher's Perspectives

According to the responses of the teachers 37% of the participants don't know all the Bengali phonemes whereas 50% of them have knowledge of few Bengali phoneme. However, 13% of them have no knowledge of Bengali phonemes.

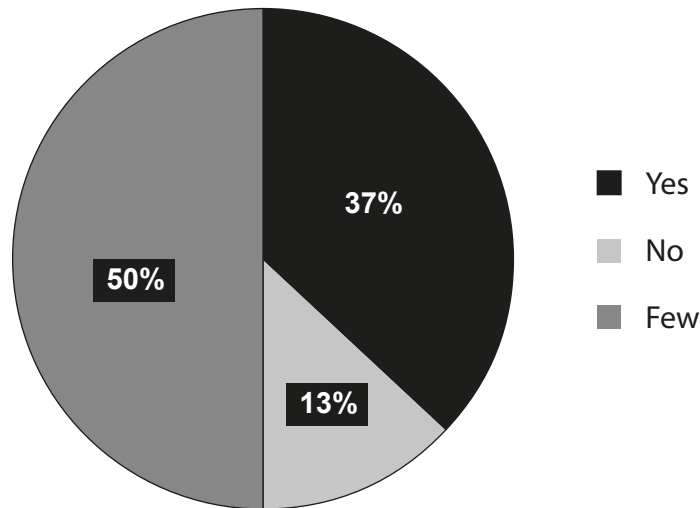


Figure 7.3: Percentage of Bengali phonemes known to the participant

The teachers think that the reason behind the inadequate knowledge of phonemes is intellectual disabilities of the participants. They also include behavioral problems, inability to talk properly, lack of parental awareness, lack of communication at home, lack of practice of the therapies at home, etc. as the reason behind this inadequacy.

According to the teacher, 50% of participants know about the rhymic skill. they also added that only 37.5% of the participants knew how to read. The rest of the participants have difficulties in reading. However, all teachers agree on the term that intellectual disabilities affect participants' study and their progress in academic performance.

8. Discussion

The study exhibits several key findings that shed light on the nature of Bangladeshi children with intellectual disabilities' proficiency in phonological awareness. The use of phonological skills in speech and reading is natural for every person, which is the same for ID children. Their knowledge of using phonological skills varies depending upon two components-severities of intellectual disabilities and other behavioral symptoms.

First of all, the current study suggests that more or less all the participants can able to talk in the Bengali language. Not all of them have the full concept of phonological skills. In rhyme detection, there is no one able to complete the full task properly. But in two tasks they were able to manage to exceed 50% score, which is 62.5%. This indicates that children with ID lack the skill of rhyme detection skills. The second task was initial alliteration. There is no task in which participants manage to exceed a 50% score, which indicates that children with ID have severe problems with initial alliteration. The third task is syllable segmentation there is one task that exceed 50% and all other tasks were 37.5% or below. This indicates that like alliteration children with ID have a severe lack of syllable segmentation. The final task is first sound detection in which among five tasks one task exceeds 75% and another one is 50%, the rest of them is below 50%. This indicates that compared to the previous task this first sound detection is way more improved. But there is a presence of lacking as well.

Furthermore, the prime research finding lies in the phenomenon of phonological awareness skills. This research finding indicates that children with ID lack the skill of phonological skills. Phonological skills help a person's reading skills. This topic supported Cheung et al. (2001) research findings. This shows that the development of reading abilities is believed to be significantly influenced by phonological training.

However, according to Dessemontet et al. (2017) children with ID score less on average in phonological awareness skills than the normal same-age children. The above research findings show similar results for ID children in finding rhymes, breaking up syllables, and identifying the initial phoneme domain.

9. Conclusion

To sum up, one of the fundamental abilities is reading of children who are usually developing (Ehri et al., 2001; Melby-Lervag, Lyster, & Hulme, 2012). Lack of phonological awareness abilities is often the cause of reading difficulties in developing children and adults (Goswami & Bryant, 1990; Lyon, Shaywitz, & Shaywitz, 2003). Phonological awareness contributes significantly to reading in populations with intellectual impairment (ID) (Adlof et al, 2015). However, research on the positive and negative aspects of phonological impairment in kids with ID is scarce and focuses mostly on those who have syndromic disorder (Menghini et al. 2004). Additionally, their long-term phonological awareness skill development remains ambiguous. There aren't many studies done on kids with unidentified etiologies in a constrained age range. The current study's goal is to examine the assessment of the phonological impairment profile over time in school students with ID of unknown cause. Finding out this message is essential for comprehending their phonological awareness and designing treatments or training programs that are targeted to the range of abilities displayed by these kids and their unique strengths and limitations (Sermier Dessemontet et al., 2017).

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Biography

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