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## *Message From The Executive Director*

It is with immense pride and a deep sense of responsibility that I present to you the inaugural edition of the PISER Journal, a scholarly endeavor dedicated to advancing discourse and knowledge in the fields of Education, Special Education, Audiology, Speech-Language Therapy, Physiotherapy, Occupational Therapy, Early Childhood Development and Pedagogy (ECDP), Psychology, and Orthotics and Prosthetics. This journal stands as a beacon for interdisciplinary collaboration, embodying our shared commitment to the holistic development and well-being of individuals across the lifespan.

The themes encompassed within this journal reflect the breadth of our mission: to foster innovative research and practices that elevate the quality of life for those with diverse needs, while also advancing professional standards and methodologies in the therapeutic and educational domains. As we navigate an ever-evolving global landscape, it is essential that we remain steadfast in our pursuit of cutting-edge solutions, grounded in both empirical research and compassionate care.

This first issue symbolizes not only the convergence of a multitude of disciplines but also the intersection of research and practice, theory and application. Our contributors, drawn from an array of specialized fields, offer insights that challenge conventional wisdom and open new avenues for exploration. Through their rigorous scholarship, they illuminate pathways for practitioners, researchers, and policymakers alike, advocating for a more inclusive and supportive society.

As we embark on this journey together, I invite all readers-whether seasoned professionals or emerging scholars-to engage with the content critically, reflect deeply on its implications, and consider how we might collectively contribute to the betterment of lives through education and therapeutic interventions. Let this journal serve as a platform not only for the dissemination of knowledge but also for the cultivation of new ideas, collaborations, and transformative practices.

In closing, I extend my heartfelt gratitude to the editorial team, peer reviewers, and authors who have made this inaugural issue possible. Your dedication and expertise are the foundation upon which the PISER Journal will thrive. I am confident that, together, we will continue to advance the frontiers of our respective fields, shaping a future where all individuals, regardless of their challenges, can lead fulfilling, empowered lives.

With great anticipation for the impact this journal will make, I welcome you to the first of many thought-provoking and groundbreaking issues.

A handwritten signature in black ink, appearing to read 'Md Anwar Uz Zaman'.

**Colonel Md Anwar Uz Zaman**, BPMS, PPM, afwc, psc, G  
Executive Director, PISER



# CONTENTS

No.	Subjects	Page
01	Articulation Profiles of Children with Autism and Cochlear Implants: Exploring Acoustic Characteristics <i>- Colonel Md Anwar Uz Zaman, Md. Asaduzzaman, Kathryn Jane Day</i>	07-16
02	Current Status of NGO's Working with Visual Impairment in Dhaka City: The Impact of Their Services on Rehabilitation <i>- Tania Rubya, Sumyea Benta Jashim</i>	17-32
03	Proficiency in Phonological Awareness Performed by Bangladeshi Children with Intellectual Disabilities <i>- Md Asiqur Islam Anik, Fatima Alam</i>	33-44
04	Therapeutic Interventions and Developmental Progress in An Eleven-Year-Old Child With Autism Spectrum Disorder: A Case Study <i>- Rehana Akhter Chowdhury, Md. Hasan Al Banna</i>	45-52
05	The Government Policies on the Education, Employment and Rehabilitation of the Children with Special Needs in Bangladesh, its Limitations and Ways to Overcome <i>- Merajul Islam Opi, Sammi Chowdhury</i>	53-68
06	An analysis of the nature of social Communication performed by Bengali speaking high-functioning autistic children <i>- Sayeda Asia Akter</i>	69-82
07	Online Assessment: Tertiary Level Students' and Teachers' Perception, Strategies Used, and Consideration Needed to be Taken in the Context of Bangladesh <i>- Ayesha Mahmood, Md. Istiaque Hasan, Susmita Ghosh, Shahrir Pranto</i>	83-103
08	Attitudinal Barriers Faced by the Students with Disabilities in Bangladesh: Perspective of Special Educators <i>-Nosrat Jahan Ormi, Md. Adnan Nadiw</i>	104-113
09	The Prevalence of Auditory Risk Factors in Using Mobile Phone <i>- Fauziatuzzaman Saumik, Farah Binte Bashir , S.M. Toufiq, Md. Shakil Sarwar</i>	114-128
10	Enhancing Early Childhood Development in Bangladesh: Translating and Assessing the Social Emotional Development of New Portage Guide <i>-Mahbuba Akter</i>	129-146
11	Bridging the Gaps between Special School and Mainstream school Through Early Childhood Development Programme (ECDP), Proyash- A Specialized Institute for Children with Disabilities <i>- Qazi Afroza Sultana</i>	147-156



## Articulation Profiles of Children with Autism and Cochlear Implants: Exploring Acoustic Characteristics

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Kathryn Jane Day<sup>3</sup>

### Abstract

Children with autism spectrum disorder and children with cochlear implants can experience phonological deficits. This study examines the acoustic profiles of the speech of ten Bangla-speaking children with either cochlear implant or autism spectrum disorder. A Bengali phonological picture test set as well as a narrative picture test were used as stimuli to elicit responses. Both groups exhibited significant articulation and/or phonological deficits in syllable, word, and sentence utterances. More specifically, to pronounce the different words, phrases, and sentences they frequently encountered phonological problems like stress, pitch, tone, intonation, and loudness. In the current study, PRAAT software was used by the researchers to analyze acoustic data. The analysis resulted in ten individual profiles of the speech of children with speech sound disorder. The children with a cochlear implant exhibited more phonological deficits than autistic children.

**Keywords:** Autism, Hearing Impaired, Cochlear Implant, Spectrogram, PRAAT

### 1. Introduction

Speech language pathologists provide assessment and intervention to children and adults with a variety of diagnoses including autism spectrum disorder and hearing impairment. Intervention can include both speech and language therapy. The present study has been conducted to explore the acoustic speech profiles of two groups- Bengali children with autism spectrum disorder and Bengali children with cochlear implant.

According to the World Health Organisation (2023a), autism spectrum disorder is a “neurodevelopmental disorder characterized by deficits in social communication, social interaction, and the presence of restricted repetitive behaviors”. The current literature presents conflicting views on whether children on the autism spectrum are more likely than their neurotypical peers to have a phonological disorder (Wolk, Edwards, & Brennan, 2016).

Hearing impairment is the inability to hear and may be partial or complete (Zeng & Djalilian, 2010; World Health Organization, 2023b). The cochlear implant is an electronic medical device that restores the auditory function of the inner ear (Zeng et al., 2008). Children with cochlea implant are likely to have significant difficulty in developing phonology (Blamey, Barry, & Jacq, 2001).

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## **2. Acoustic Perspectives on Phonological Deficits**

Phonological disorders are those speech sound disorders that contain “rule-based errors” (American Speech-Language-Hearing Association (n.d.). Phonological disorder is unique as it is categorized as both a speech sound disorder as well as a language disorder (Bishop et al., 2017). Children with phonological disorders may present with entirely unintelligible speech, even to a child's immediate family members. Those with children with phonological disorders of milder severity may present with speech that is generally intelligible but in which some sounds are somewhat mispronounced. Acoustic analysis is a method used to determine the properties of acoustic signals and generally this method is used in the field of linguistics. In the present study, acoustic analysis was carried out using PRAAT software.

## **3. Review of Literature**

Hearing-impaired children present with a range of speech difficulties. These difficulties include consonant deletion and substitutions, consonant cluster reduction, voicing and devoicing, nasality errors, consonant substitutions, as well as vowel distortions (Hudgins and Numbers, 1942; Smith, 1982; Dunn & Newton, 1986; Culbertson & Kricos, 2002). As hearing loss becomes more complete, difficulties in phonological processing and speech intelligibility generally become more severe.

However for autistic children, there is conflicting information as to whether or not phonological development is noticeably affected (Wolk, Edwards, & Brennan, 2016). Early case studies indicated that autistic children were likely to have phonological difficulties (Eisenberg and Kanner, 1956) and early researchers also noted that echolalic and extemporaneously formed speech may develop differently (Ricks & Wing, 1981). Ricks and Wing (1981) point out that spontaneous speech may be less well articulated than echoed utterances. Wing (1988) suggested that autistic children have a similar phonological profile to children with hearing impairment. However an earlier study by Rutter, Greenfield, & Lockyer, (1967) indicated that autistic children with phonological disorder do not as a group demonstrate the types of marked or persistent as phonological deficits which occur in developmental dysphasia and hearing-impaired children. Bartak., Rutter, & Cox, (1975) compared the phonological development of autistic children to language-matched peers and found the phonological development of autistic children to be slower than those without autism. A study by Chenausky (2015) reported that, one-third of adults with high-functioning autism presented with mild speech sound errors (for example on /r/, /l/, and /s/sounds) whereas in the general population, these errors are much rarer. Bartolucci, Pierce, Streiner, and Tolkin-Eppel (1976) proposed that the development of speech for children in autism generally follows the same trajectory as in typically-developing children; with the exception of “residual” phonological processes remaining in adulthood. Both children with autism and children with cochlear implant are generally understood to have difficulties in developing language skills; what is less clear is understanding is the intersection between language disorder and development of phonology.



## **4. Methods**

This research is descriptive in nature. The approach of qualitative data collection and analysis was utilized. Data-gathering instruments were created and then used to collect information. This study reports on the primary data gathered from the respondents.

### **4.1 Participants**

Children with autism and those with cochlear implants were the study's target demographic. Five Bengali children with cochlear implants and five children with autism were selected via convenience sampling. Both groups spanned an age range of six to twelve years. The Auditory Verbal Therapy therapy unit, Bangabandhu Sheikh Mujib Medical University, and the Society for Welfare of Autistic Children hosted this cross-sectional study from August 2017 to April 2018.

### **4.2 The Study Stimuli**

The Bengali Phonological Test Pictures (BPTP) set and a Narrative Picture Test (NPT) were developed for the present study. The aim for these tools was to elicit responses for both groups which would provide information on (i) word level acoustic anomaly, (ii) sentence level acoustic anomaly, and (iii) prosodic features of speech. All of the items were modified in response to participant feedback given by SLPs and teachers prior to final development of the test tools.

### **4.3 Data collection procedure**

Employing the NPT and the BPTP set, the researcher presented each child participant with a set of related questions. All of the responses were coded by the researcher in the acoustic analysis record sheet.

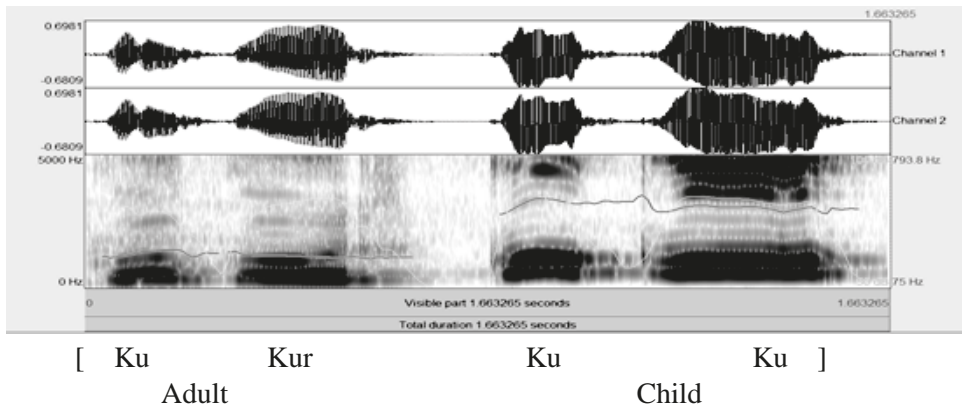
### **4.4 Data Analysis**

Data was coded using both extended and normal IPA during the observation and test sessions. Using PRAAT software (version 2018), the speech of the participants were captured and turned into a spectrogram. For comparison, an adult model of speech was also captured via PRAAT. PRAAT software was used to distinguish the acoustic nature of the phonological error. The researcher attempted to identify word level and sentence level acoustic anomaly of phonological patterns in target groups. In PRAAT analysis amplitude, frequency, pitch, loudness, f1 (formant 1), and f2 (formant 2) of participants' voice was included in the spectrogram.

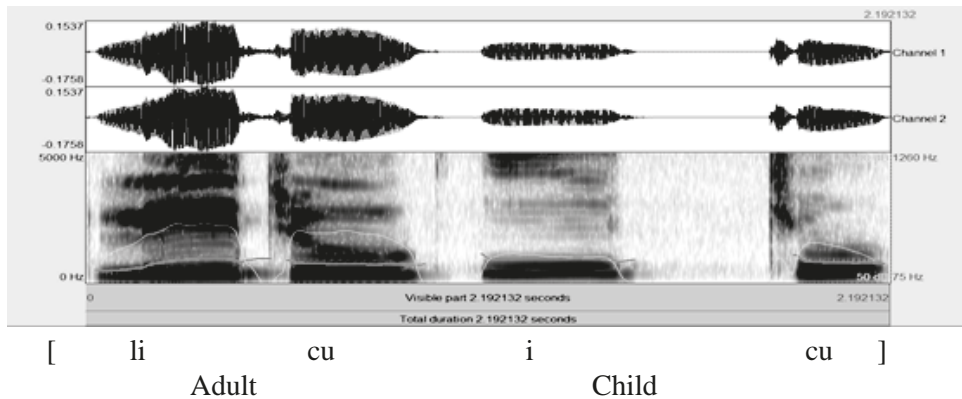
## **5. Results**

Spectrogram analysis showed several differences between the acoustic properties of the children with autism and the adult model. Figures 1, 2, 3, and 4 provide several examples of spectrograms that were produced during the study.

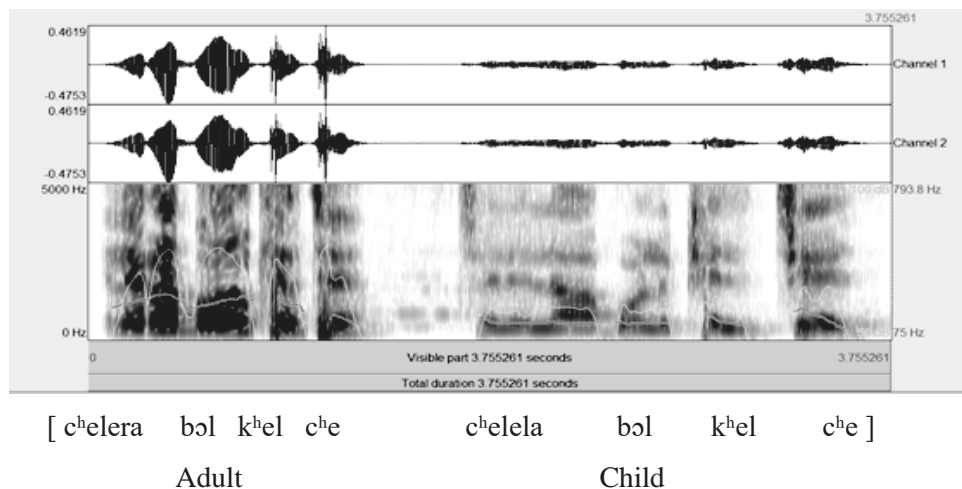




**Figure 1.** The adult model's utterance and atypical articulated speech of an autistic child – "kukur?" (Dog).

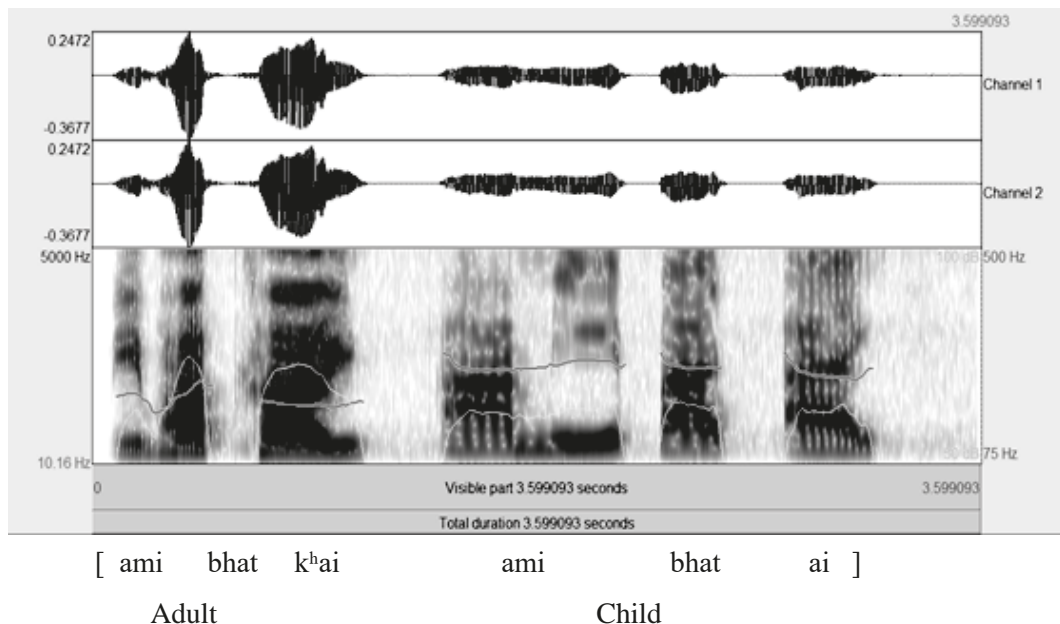


**Figure 2.** The adult model's utterance and atypical articulated speech of and CI child – "licu?" (Lychee).



**Figure 3.** The adult model's utterance and atypical articulated speech of an autistic child – "<sup>h</sup>elera bəl <sup>h</sup>el<sup>h</sup>e?" (The boys are playing football).





**Figure 4.** The adult model's utterance and atypical articulated speech of a child with cochlear implant – “ami b<sup>h</sup>at k<sup>h</sup>ai?” (I eat rice?).

Spectrogram analysis indicated that children with autism exhibited a higher prevalence of high-pitched sounds, formants, and pulses compared to the adult model. The analysis further revealed pronounced articulation deficits in words, phrases, and sentences, indicative of phonological disorders. In contrast, children with cochlear implants (CI) demonstrated an average pitch level in their spectrogram analysis, along with increased formants and pulses compared to the adult model. They displayed considerable phonological and articulation deficits across various linguistic contexts, surpassing those observed in autistic children. Both groups exhibited severe deficits in the suprasegmental prosody of speech, with autistic children demonstrating additional prosodic challenges compared to CI children. Notably, autistic children tended to lose prosodic features in their utterances, whereas CI children, despite emitting atonal high-pitched sounds, manifested more phonological errors. Autistic children were observed to discard more echolalic words, while CI children exhibited a higher frequency of filler words. Language abilities in CI children were marginally more developed than those in autistic children.

## 6. Discussion

The study's findings align with prior research, including studies by Eisenberg and Kanner (1956), Wing (1981), and Kjelgaard and Tager-Flusberg (2001), supporting the presence of phonological challenges in autistic children. The critical period from birth to five years for speech and language acquisition, as highlighted by Stoel-Gammon and Otomo (1986), emphasizes the interconnectedness of phonology, speech perception, and speech



production. Additionally, studies such as Ibertsson (2009), Culbertson & Kricos (2002), and Uchanski & Geers (2003) underscore the complex nature of speech errors in hearing-impaired children and CI recipients. The study contributes to the existing body of knowledge on phonological difficulties in Bengali children with autism and CI, paving the way for future investigations despite certain limitations.

## **7. Limitations**

Due to resource constraints, the number of participants was limited. Secondly, also due to resource availability, we compared the speech of the children to an adult model; future studies would benefit from the inclusion of age-matched neurotypical peers. In addition, our study targeted participants who were already accessing therapy services; perhaps we may have found different results had we accessed those children who either could not access or did not require therapy. Nevertheless, despite its limitations, this study has contributed to our understanding of phonological deficits, especially as there is currently very little research about the speech development of Bengali children. The current study adds to the body of knowledge about the phonological difficulty in autistic children as well as children with cochlear implant.

## **8. Conclusion**

Current study demonstrates that some Bengali children with autism do also have phonological difficulties and these are evident in acoustic analysis, however in our study these difficulties were not as pronounced as the difficulties demonstrated by the children with cochlear implant. PRAAT analysis demonstrated the following:

- Children with autism exhibited more high-pitched sounds, formants, and pulses in their speech, while children with cochlear implants used an average level pitch along with formants and pulses.
- The differences in pitch and sound characteristics between the two groups were evident in the spectrogram analysis, highlighting distinct acoustic properties.
- Both groups demonstrated articulation deficits in words, phrases, and sentences, indicative of phonological disorder.
- Children with cochlear implants presented a higher incidence of phonological errors, such as consonant obliteration, substitution, and distortion, compared to autistic children. Autistic children, in turn, displayed more echolalic words and phrases.
- Both autistic children and children with cochlear implants exhibited severe deficits in the prosody of suprasegmental features.
- Autistic children showed supplementary deficits in prosody compared to children with cochlear implants. The misplacement of prosodic features and atonal high-pitched sounds were more pronounced in the autistic group.



- Despite both groups having severe deficits in prosody, articulation, and phonology, the nature and extent of these deficits varied.
- Both groups displayed segmental and suprasegmental errors in their speech, as identified through spectrogram analysis.
- The presence of inappropriate stress patterns, and poor resonance indicated suprasegmental errors.
- Phonological errors such as phoneme deletion and substitution were evident in both groups.

These comparative findings from PRAAT analysis underscore the nuanced differences and similarities in speech characteristics between Bengali children with autism and those with cochlear implants. The analysis provides insights into pitch, articulation, prosody, phonological patterns, and language development, contributing to a better understanding of the distinct challenges faced by each group.

To sum up, the spectrogram analysis revealed distinctive speech characteristics in both Autism and Cochlear implant (CI) children. Children with autism exhibited more high-pitched sounds, formants, and pulses, along with articulation deficits indicative of phonological disorders. In contrast, CI children displayed average pitch levels but showcased numerous phonological and articulation deficits across various linguistic contexts, along with an increased incidence of phonological errors and the rejection of filler words.

Despite the limitations, the study contributes to understanding phonological deficits in Bengali children, emphasizing the need for further investigations. The findings suggest that both groups exhibited severe deficits in the prosody of suprasegmental features, with autistic children showing additional deficits compared to CI children. The study highlights the nuanced nature of phonological challenges in both populations and provides insights into the speech development of Bengali children, particularly those with autism and cochlear implants. The hope is that this research will inspire future studies, incorporating a larger participant pool and age-matched neurotypical peers, to refine therapeutic interventions and support strategies.



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## Biography

**Colonel Md Anwar Uz Zaman** BPMS, PPM, afwc, psc, G, was commissioned in December 1997 through the 37th Long Course of the Bangladesh Military Academy. He is a graduate of the Defense Services Command and Staff College in Mirpur. He also served as a Senior Instructor at the Gamery School of Artillery and is an appointed member of the Bangladesh Special Forces. In addition to holding various regimental appointments, he served as Brigade Major of a brigade, Commanding Officer of three units, Grade One Staff Officer, and Colonel Staff of an infantry division. He has participated in the United Nations peacekeeping mission twice.

He is also a graduate of the National Defense College and holds a master's degree from Bangladesh University of Professionals. Additionally, he earned a Master of Business Administration. Currently, he is pursuing a Master of Philosophy (MPhil - Part 2) as a researcher. He now serves as the Executive Director of Proyash Institute of Special Education and Research (PISER).

**Md. Asaduzzaman** holds an MPhil from the University of Dhaka, where he studied the social narrative abilities of autistic children and those with cerebral palsy. He completed his Master's in Speech and Language Pathology, ranking first in his cohort, and a Master's in Clinical Linguistics, achieving second place, along with a Bachelor's in Linguistics as the cohort leader (ranking first in his cohort), all from the University of Dhaka. His academic excellence earned him the Dean's Merit Award and the Begum Sayeda Afzal Memorial Scholarship. Currently, Asaduzzaman is an Assistant Professor in Audiology and Speech-Language Pathology at PISER, where he also leads the R&D wing. His research interests encompass both basic and advanced data visualization techniques, neuro-cognitive psychology, neurobiology of communication disorders, psychoacoustics, child language development and associated disorders, speech sound disorders, AAC technology and innovation, and clinical linguistics. In addition to his 15 publications (comprising 3 books and 12 journal research articles), he worked as a research fellow and senior research fellow at the International Mother Language Institute (a UNESCO Category II Institute) and the Prime Minister's Office, respectively. He also has experience as a Linguistic Expert at REVE Systems. ORCID: <https://orcid.org/0009-0008-1497-4590> | Academia.edu: <https://www.academia.edu/>

**Kathryn Jane Day** CPSP is a certified practicing speech pathologist from Australia. Her experience in Australia includes working with children, families and school communities. In Bangladesh she has experienced working in the slums of Dhaka and in training of new speech pathologists at PISER. She is particularly interested in ways the profession can narrow the gap between research and clinical practice.



## Current Status of NGO's Working with Visual Impairment in Dhaka City: The Impact of Their Services on Rehabilitation

Tania Rubya<sup>1</sup>  
Sumyea Benta Jashim<sup>2</sup>

### Abstract

Disability is a developmental issue that every child with disability is comparatively lag behind their peer group. In the same practical causes, visually impaired people are slightly delay from their sighted peer. But, to face various challenges, when they enroll mainstream education, the new challenges are arising in front of them. They have to face severe problem in competitive job market and sometimes it has been seen that for a long time they became unemployed and lead a miserable life. However, this qualitative study focuses on the role of NGOs in case of services and support for the people with visual impairment and if their services are effective and sufficient for their rehabilitation. This study will follow qualitative research methods in collecting and analyzing data, whereby questionnaires and archival data will be used as research tools. The documentary guides will be used as assistance to collect related data. Primarily selected NGO's are Blind Education and Rehabilitation Development Organisation - BERDO and Baptist Mission Integrated School - BMIS. Based on the findings, the study will suggest and recommend that the management of rehabilitation helps the visually impaired person to minimize or reduce the disabling effects by creating opportunities and preparing people for the community as they require. Every related organisations should give emphasis on strengthening the basic system of rehabilitation, improving their training criteria according to contemporary needs of the world and develop multidisciplinary rehabilitation workforce.

**Keywords:** Visual Impairment (VI), Rehabilitation, Non-Government Organization (NGO), Disability, Social Attitudes, Job Placement, Extra-curricular Activities.

### 1. Introduction

From the basic view of point, it is to be said that Rehabilitation is one kind of interventions program which is designed in order to enhance or improve the functioning level of the people with disabilities and decrease any problematic conditions related to disability on the ground of interaction and communication with their environment (WHO,2011). Everyone may need rehabilitation at some point in their lifetime for any kind of injury, surgery, disease, or illness (Cieza, 2020). From the Disability Identification Survey of Williams (2016), because of alarming population growth and aging, behavioral and lifestyle changes and also unplanned urbanization increase the disability rate and Government of the country specially in the developing countries, have to face many challenges in every aspect related to the life of the people with disabilities. Even if they passed according on our formal educational system and even complete graduation, they have to face employment problem in the competitive job field.

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Because there is a lack of need-based programs for visually impaired people to mainstream them in society. In most cases, service providers are less interested to recruit people with visual impairments or other people with disabilities (Williams, 2016). For this reason, many educated and skilled person with visual impairments remain jobless for a long time. These personnel face a lot of obstacles in their way of integrating themselves into the mainstream development process (Bethge, 2014). In Bangladesh, there are extremely few options for those with impairments to pursue a career (Khan,2002). Their access to choices for generating income is also restricted by a lack of practical experience and occupational skills (Chowdhuri,2002). Most persons with impairments, even those with severe disabilities, have the self-confidence to pursue education and participate in financially rewarding activities, which enables them to be valuable contributors (Alam, 2002).

### 1.1 Statement of the Problem

From the report of World Bank (2020), it has been said that people with disabilities are generally excluded from mainstream especially on economic and social opportunities. Because, Disability is a developmental issue where from childhood, they are lag behind their peer group from some specific areas of development. According to Hassan (2013), in Bangladesh, besides the government organizations, the local NGOs are also have been functioning with visually impaired people basically in Dhaka City.

There are approximate 650,000 blind adults whose age was 30 and above in Bangladesh, but only a small percentage of the population is connected with self-employment (Islam, 2019). Visually impaired people are stereotyped by society as their visual skills are not like other normal people, and their acceptance in society, tolerance towards them, and integration into social life are greatly affected (Papadaki, 2013).

People with special needs related to vision still suffer from various prejudices in society regarding the level of their special needs, formal education skills, and integration into society (Munyi, 2012). Presently Bangladesh has a high prevalence of age-related vision loss and its number is increasing day by day. Most elderly visually impaired people in Bangladesh live in their own homes or on the streets. Most of those living at home are financially dependent on their families and need family members to look after them. On the contrary, those living on the streets are naturally below the poverty line (Mostafa, 2001).

### 1.2 Rationale and the Significance of the Study

Rehabilitation is one kind of intervention program which is designed to improve the functioning level of the people with disability and try to enroll on the environment with proper interaction and communication. Anyone may need rehabilitation at some point in their lifetime for any kind of injury, surgery, diseases or illness. Rehabilitation helps them to empower person with disabilities as an independent asset on the society. As a result, the person became more self-determine and try to be as independent on every possible activity such as their education field, work station, friends circle and over all live a recreational meaningful life. According to the report of World Health Organization (2021), globally,



approximate 2.4 billion people are currently living with a health condition such as disability or physical problem and get welfare from rehabilitation. But it has been predicted that worldwide these support systems have to be increased because of the large population who are suffer from any kind of disability or other physical factors. At present the need for rehabilitation become a burning issues against the total number of suffered personnel. According to World Health Organization (2021), more than 50% of people with disability do not get the supportive service of rehabilitation in low and middle income countries specially the developing countries. Bangladesh is also on that list of the mentioned countries. According to Sustainable Development Goal 3, the key point of achieving the goal is- “Ensure healthy lives and promote well-being for all at all ages.” (Ritchie, Roser, Mispy, Ortiz-Ospina, 2018: Measuring Progress Developmental Goals-SDG 3). So, in realism, rehabilitation can help and support to lead a healthy life and promote them for the well-being of our society and ready them to live an independent life.

### 1.3 Disability, Education and Employment in Bangladesh

According to J Hossain, Education is a basic need for every human without which the development of human life is impossible. Education is the only way for man to survive, protect his life, and develop every potential of his life. Article 28 (3) of the Constitution of Bangladesh directly states that no citizen shall be subjected to any disability, liability, limitation, or condition in respect of universal access solely because of their religion, caste, caste, sex, or place of birth. Bangladesh fully supports the EFA, which addresses education for all types of people, including persons with special needs. Bangladesh is committed to Education for All students unrelatedly of class, caste and disabilities.

The Government of this country fully supports the United Nations Declaration on Equal Rights and Opportunities for Persons with Intellectual Disabilities. According to Bangladesh National Policy for Persons with Disabilities-1995, Bangladesh Welfare Act for Persons with Disabilities- 2001, Bangladesh National Coordinating Committee for Persons with Disabilities to implement programs and to improve the living conditions of persons with disabilities through special education and training. Their employment benefits the establishment of legal rights and there is also clear mention of equal opportunities for participation in social security, recreation, and national economic development programs (Haider,2010). Several governments and private organizations in Bangladesh have been working to achieve this goal. SWID Bangladesh is one of the pioneer organizations in Bangladesh working since 1977, especially for people with intellectual disabilities.

Another NGO, Bangladesh Pratibandhi Foundation serves more than 3000 physically and intellectually challenged children through schooling, CBR, and distance training package programs. In this regard, various institutions in the government and private sector have been working not only with the intellectually disabled but also with the visually and hearing impaired. All those institutions work for the education of students and the training of teachers. University of Dhaka is at the forefront of training teachers in special education (Haider, 2010).



The condition of education and employment of students with special needs in Bangladesh is still not very satisfactory. According to the report of CSID & AAB (2002), the accessibility in employment sector of the people with disabilities are not inadequate. From this study, it has been revealed that 39% of the respondents faced challenges in getting employment and 27% of the people with visually impaired had to change their work station because of their traditional educational pattern or inappropriate knowledge, cooperation and support system of office environment and over all the negative attitudes of service providers towards disability. On the other hand, job providers offer a poor salary structure on account their disability and also face some problem of accessible facilities and further skill development opportunity.

According to Mohammad Tariq Ahsan and Lindsay Burnip, in the case of visually impaired students, it has been observed that they lag behind academically because they take a little longer to learn. Many times, it is seen that they are lagging behind in the field of education due to their reluctance and support from their families. Since they have no or relatively low vision, they are seen to be more dependent on others than others in their daily activities. In most cases, family and close people are not interested in helping them move forward due to dependency. Although the government has braille presses and there is a law to provide free braille books to all at the initial stage, these are often not available in all educational institutions. Besides, there is a negative view of the ability of society to help. All this affects their future career paths (Ahsan and Burnip, 2007). In 2014, McDonnall et al, expressed that maximum employers have inadequate or less knowledge about blind or visually impaired persons and their performance criteria that how they perform any kind of routine job. Those employers also need greater levels of positive attitudes and take some necessary steps to support their working environment. The biggest hurdle for visually impaired job seekers is; Negative attitude of the employer, the prevalence of inconsistency in work, narrow-mindedness, uncooperative comments from colleagues, and an uncooperative overall environment. Such things weaken a person's self- confidence to a great extent and when self-confidence is reduced, it has a direct impact on work efficiency (Coffey et al, 2014).

In specific visually impaired area, Baptist Mission Integrated School (BMIS), has advocated for young women who are visually impaired. It is now the only residential school in Bangladesh for visually impaired girls. The group's founder is Rev. Veronica Ann Campbell. Germany's Christoffel Blinden Mission (CBM) served as BSSBG's founding partner. The Institution has been running for the past 30 years for visually impaired girls as well as for women in Bangladesh. This institution is a non-profit organization for visually impaired girls, disadvantaged children and women, orphans, and the most neglected in the family and society ages of 5 to 18.

In 1991, Saidul Haque formally established an organization for the fundamental rights of all disadvantaged individuals, named the Blind Education and Rehabilitation Development Organization (BERDO) to fight for visually impaired children including those who are blind. Every stage, from childhood, they are suffered with a number of challenges in the



field of education, employment and as well as adulthood, BERDO tried to support these individuals in all aspect and help to face this challenges. BERDO also set a Braille library for the blind where books are being printed and provide it throughout the nation in Bangladesh, and many visually impaired person is being graduates with the support of BERDO and work in a variety of organizations.

#### **1.4 Research Questions**

The research questions of this study are to explore and examine the role of NGOs in providing services and support for people with disabilities, with a significance focus on the visually impaired person and their services are effective and appropriate for their rehabilitation. From this research, aims to know these set of answer from these questions:

1. What are the service delivery approaches of the non-government organizations of Bangladesh?
2. How these services play an effective role in rehabilitation?
3. What are the challenges on the road to rehabilitation?

#### **2. Methodology**

Data for this paper was obtained using qualitative research strategies, which included observations, data collection from the documents, and individual interviews with organization officials, teachers, present students, and previous students with visual impairments. The purpose and significance of the study was attached to the front page of the questionnaire for the respondent. Participants have been assured that their answers would remain confidential, any information and their identity would not be reveal and their response would not have recorded.

##### **2.1 Sample Selection and Composition**

The NGOs were chosen after extensive investigation or based on popularity and recommendations. Based on the research methodology, the two local NGOs were selected that they are already working in the field of disabilities to empower the people with disabilities for the enrollment of education and employability, as the goal of the research is to evaluate the role that local NGOs play in empowering the visually impaired personnel in Bangladesh. Additionally, the qualitative approach and purposeful, snowball sampling technique are acceptable for this study for the reasons listed below.

First of all, there are very few local NGOs and projects aiming to empower visually impaired people to access school and employment. Secondly, very little research has been done on the subject in Bangladesh, which means resources are very limited. To protect the interviewees' privacy, some of the interviews took place over the phone, particularly for former students. The rest of the interviews were conducted on the NGO premises. To prevent any confusion regarding the results of the research, it was important to establish a connection first with the interview subjects and explicitly state the goals of the study. There



were open-ended and in-depth questions, no issues happened regarding this. Participants were enthusiastic and eager to assist with the research, and several of them even exhibited gratitude for this kind of investigation. While taking notes recording was also used and that was more appropriate for collecting every detail.

## **2.2 Data Collection Method and Procedures**

For this study, the researcher was selected "individual interview technique" as the data collection method. This technique allows the researcher to learn almost all pertinent details and examine participant attitudes, beliefs, goals, and experiences to gain a better knowledge of them. Open-ended interview questions were used to gather in-depth data. Interviews were conducted separately with each respondent. Open-ended questions were asked according to the questionnaire prepared for each and important parts were noted along with recording the answers of each. Data were collected from the two NGOs in the same process mentioned above and the data was prepared for analysis.

## **2.3 Data Generation and Analysis**

After collecting data from the interviews of a total of eight respondents from two NGOs, they were subjected to thematic analysis. That is, by selecting some themes the researcher carefully observes the data to recognize common themes issues, concepts and configurations of meaning that come up constantly. This also involves interpretation in the processes of selecting codes and constructing themes. A total of eight people have been selected from two different NGO to collect information. Among them there were two executive members, two teachers, two current students and two students who are currently working. Information is collected through interviews from each of them. The type of questions asked to each group was different according to the purpose. For example, executive members and teachers were asked about what they think about rehabilitation from their position and whether the services they provide actually have any impact on rehabilitation, what kind of impact or problems they are facing.

On the other hand, the students were asked about their thoughts on this matter and how much they think the services they are getting will play a helpful role in rehabilitating them. On the other hand, the students who are currently in various workplaces after completing their studies and also asked to know how they actually benefited from their school, whether they faced any kind of problems or how they dealt with the problems. The answers given by everyone are analyzed thematically under some relatable themes.

## **3. Discussion**

Related issues with the research have been discussed in detail in here, the services that are actually provided to the students, have not been reviewed in detail about how they are affecting the rehabilitation or what are the obstacles to be faced in the rehabilitation.

The NGOs that work with visually impaired students in Bangladesh, what programs they run in schools and how much these support services help them to go to work later, what



kind of obstacles they face, perhaps the overall situation of these local NGOs will be analyzed in detail in this portion.

### **3.1 Role of the services provided by NGOs in the rehabilitation of visually Impaired people**

Bangladeshi NGOs that are working with visually impaired students or students with any type of disability are mainly being conducted with funds from various sources or with their own funding. In addition to basic studies, various types of co-curricular activities are held in these NGOs. Students are also working in various institutions after studying from these institutions.

As part of this study, the selected NGOs were purposively selected and individual interviews were conducted with selected sample. The respondents held almost the same opinion. A common dissatisfaction with the overall context have been seen among them.

#### **3.1.1 Educational Service**

##### **In Bangladesh, very few schools want to admit students with special needs**

Rejection from most schools is the biggest obstacle in the education of children with special needs in our country. Most mainstream schools do not want to admit these special needs students in their schools. Maybe their schools don't have special teachers or their school infrastructure is not suitable for students with special needs or they don't have enough knowledge or enough money to include them. Some papers also mentioned this issue before. Despite having particular policies, rules, and resources, Bangladeshi disabled children still struggle to get an education (N Ahmed, A Kashem, 2015).

##### **The main objective of specialized NGOs is to provide all kinds of facilities to the students that they need**

At present NGO has a total of 48 visually impaired students and a total of 5 teachers for them. About four of the students have other associated disabilities. Apart from this, the rest are only visually impaired. Since the institution is not very old, so very few students have entered the career so far. Most of the senior students are studying in different universities right now.

NGO 2 has currently 60 visually impaired students in her institution and 14 teachers for them. None of the students have any other associated disability. Currently, a total of 37 people are working in different places after studying from this institution.

So it is proved that indeed a large number of visually impaired students are completing their education from such NGOs. Mainly these NGOs conduct direct education programs for students up to class VIII. After that several colleges have to resort to participate in other public exams. They give their public exams under those colleges. But their educational programs are provided by these NGOs. Only the exams have to be given by Bangla College, Eden College or several such colleges. When asked about what kind of services or programs



are being conducted in the school besides academic education, he said, besides academic teaching, arrangements are made to teach various basic courses of computer, music and poetry. They open doors to develop their talent by organizing various competitions at different times. Their number of successes in those competitions is also high.

Activity based learning is very helpful for successful rehabilitation later on. Students prefer learning by doing rather than only reading something. Both of the NGOs ensures that the students can learn from school the skills needed to perform each task independently in their daily life. So that they don't have to depend on anyone else for any work. Even students have agreed with this statement. 2 current students who are still studying in this school said that they like to learn things from books rather than memorizing them, they like to have real examples and opportunities to do them in real life. By doing this the things are embedded in their mind and they do not have to put extra pressure on the brain to remember them. Most of the time their schools try to educate them keeping this in mind. However, due to the lack of time, many times it does not become possible to teach this system in every subject.

In this regard, teachers say that although activity-based learning is particularly important, it is not possible to teach every content in this way due to the wide range of content and most of the content is not practical. Adequate time is also an important issue. Because it takes a lot of time to teach like this. A large amount of time is not allocated for a large amount of content. They think the contents should be more timely and practical.

### **The confidence was developed by the knowledge and school**

Students think that the word rehabilitation is very broad. The confidence of the students increases a lot if the students are ensured maximum participation in the various programs conducted by the school to prepare the students for future work and to show their maximum skills in the field of work.

They said they have developed a kind of confidence, which they believe will take them far in their careers in the future. Their school contributes a lot in building their confidence as they learn about their own skills by participating in many extra-curricular activities besides studying in school. Through these activities, they are getting to know what skills they have and how much skills they have and what they can do using those skills. The first step to success is to first know yourself, to know your abilities. They are quite supportive in school but face some social barriers in this regard. Apart from those social problems they are fully satisfied with the support services of their school. After talking to two people who are currently working, both of them said that their school has really played a big and major role in building their confidence and they feel that even after they are in the workplace, if they still face any kind of problem or need any kind of guidance, they feel that their school will be there for them completely.



### **3.1.2 Extra-curricular Services**

#### **Extracurricular activities is essential in entering the career**

Heads of both institutions feel that co-curricular activities have a lot to do with academic education in terms of entering the workplace or performing at their best in the workplace. Because to know what will be the practical application of what we are learning, we need curriculum activities. Moreover, the role of self-confidence in a person's success is many. By giving them the opportunity to participate in various competitions among the co-curricular activities, the tendency to give their best performance in certain fields is seen. Through this their confidence is built. Students can benefit from participation in extracurricular activities in terms of their social and intellectual development. Those who are thus involved typically feel more satisfied with school than those who are not. A student at the school felt that the confidence and camaraderie he saw in students like him who participated in various competitions was not seen in other students who did not participate in any kind of competition. Both institutions have good co-curricular activities and encourage students to participate more in such activities. Besides, they take care that their academic studies are not affected in any way due to participation in these activities.

#### **Success depends on individual awareness and individual will.**

Personal desire and personal initiative play a very important role in bringing success in future life. In this regard, teachers say that students who participate in these activities or receive services are relatively more social, have more confidence and progress equally in academic studies. As a reason, he thinks that concentration, diligence, effort, practice among them show relatively better performance. Even when students are taught in groups, it is seen that one or two students in a group show relatively better skills. One or two students who are performing better in comparison are not supported separately by the teacher. They are getting the same support service. However, a teacher believes that the main reason behind their progress is the student's own willpower and perseverance. Students also shared the same opinion on this matter. However, a student feels that despite the desire, many cannot show their best in that sense due to lack of family support. So the family should support equally in it.

#### **Skills in various fields will increase the opportunity to participate in employment**

Along with academic knowledge, practical knowledge is very important for a career. Teachers try to teach practical applications of knowledge in their daily activities. They feel that these services will help students a lot in their near future.

When asked about the impact these services on their rehabilitation the students said that success depends on individual awareness and individual will. It is the school's responsibility to teach them the skills they need to know in their careers. After that, the students should make every effort to absorb them and use them properly on their own responsibility.



In response to how the services provided by the school will help them enter the career or go to rehabilitation in the future, the students said that the school is teaching him everything he should know.

### **3.1.3 Job Placement**

#### **Visually impaired students are currently demonstrating their skills in all fields**

Visual impaired students are now working in banks, education ministry, educational institutions and various government and private institutions. Currently one of the participants is working as a production worker at Keya Cosmetics. When he was asked about the role of his school in his success, he said that at first he tried to get a job in several places but could not get a job. Later, the founder of BERDO, Mohammad Saidul Haque, himself managed him with a job. The role of his school in facing these obstacles and entering the working life is undeniable. Various seminars and discussion meetings are organized by his school BERDO to raise awareness among the public. At present, all the students who have studied from this institution are working in different parts of the society; they keep in touch with the school in any way at different times due to different needs. Apart from that, even if any kind of advice or support is needed for the students who will join the new workplace, they do it.

Another participant from another NGO currently working as a Senior Executive Officer of Al Arafa Islami Bank. When asked about how her school played a role in her success, she said she received maximum support from her school. But in the 80s society was not as advanced as it is now. Later, when the government started encouraging people to employ people with special needs, she got a job at Islami Bank. Then she worked there as a telephone operator for the first five years. At present she has got the responsibility of management of all call operators of Islami Bank by her own merit. She believes that individual initiative plays the biggest role in solving any problem. First of all, a person must have a desire to solve his problem and try to solve it with the best of his ability. She was not an exceptional one. From the beginning she had a lot of passion for work. The desire to do something good in life has always chased her. She always wanted to prove herself.

Until now, visually impaired students are working in several banks, universities and other public and private institutions such as Keya Cosmetics, Akiz Group of Companies and many other institutions. All of them are still in direct contact with both of the NGO regardless of need. Although there is no counseling association for those studying in this institution who will go to a career in future, if they contact them if necessary, they try to provide information very sincerely.

### **3.2 Challenges facing the local NGOs**

#### **3.2.1 Policy Challenges**

Almost every participants thinks that every school should have a system of vocational training. Although there are many special schools up to the seventh standard, the exams of



the next levels have to be given by being affiliated to some other college. Those colleges or schools do not have any provision of such special services which may have the effect of rehabilitation.

Schools must incorporate practical and action-oriented learning into the daily curriculum from the very beginning so that they can acquire the practical knowledge and skills they need for life. But following regular curriculum usually have very little time allotted to run them. Special children usually need a little more time to absorb the general curriculum. Apart from that, more time is needed to conduct such activities. In our country, most of the employers do not comply with the order of flexibility in the employment of students with special needs. In other words, it is not enough to have a policy, but also to be aware of the acceptance and implementation of the policy.

### **3.2.2 Networking Challenges**

Individual awareness and individual initiative alone are not sufficient for effective rehabilitation of persons with special needs. As the founder of BERDO in Bangladesh continues to play a solitary role, if others also come forward, it may be possible to resolve the crisis to some extent. A few participants said that networking is of great benefit to job seekers. After completing the studies, which institution to apply for, which position to apply for, how to apply, when to apply for instructions related to these issues, as normal students have already received or seen from their seniors, visually impaired students do not get the opportunity. If every institution can start an association or network with their students who are engaged in various workplaces, then maybe it is possible to deal with such problems to some extent. However, the lack of these factors plays a big role in not having a successful rehabilitation.

### **3.2.3 Awareness Challenges**

Both of the NGO's mentioned that in every field of society, people believe that people with visual impairment cannot do their own work and they need someone to help them. People do not want to give them a chance. The previous students said that it becomes very difficult to convince the organizations that their work can actually be done properly by a person with visual impairment. They don't want to give the minimum chance that a person needs to prove themselves. In this case, according to the executive member of the NGO 2, the main problem is in the perspective. And change of perspective is possible only when there is proper knowledge on this matter. Such negative views exist even among many educated people in society. This is the saddest thing. Every participant's hopes for making a positive change is possible, but it may take a long time.

When asked whether teachers face any kind of problems in sending students to work after their education, one of the teachers replied that the first obstacle they face is society. They do not think that students have a lack of desire to work in the future. Obstacles in this



regard are negative views of society and lack of proper knowledge about students with special needs. For this the teachers want to blame the negligence of other common people of society who do not have any idea about their abilities.

In response to the question whether the visual impaired personnel faced any problems in going to this rehabilitation or entering the working life, they said that society's negative attitude towards people with special needs and people's ignorance about their abilities acted as the biggest obstacles on their way to success. First of all, after applying for the job, many of the employers do not want to hire them because they are not aware of their capabilities.

Even if they cannot do all kinds of work, if they are properly instructed and taught; they can work properly with complete concentration. The fact that they can work accurately is still unknown among the common people.

The visually impaired personnel still have to face the negative attitude and behavior of people after being rehabilitated also. They feel that the public's lack of knowledge about people with special needs remains the same as it was in the beginning. Maybe where people are more educated, the effect of this negativity is less and where people are less educated, maybe the level of negative is much higher. But people still have negative ideas. These negative ideas of people affect a person with special needs in different ways. They may lose motivation, feel mentally weak or become depressed. She has to face each of these things along the way.

After performing a task perfectly by themselves, many people think that they did this task with the help of someone, not alone. This negative perspective gives a lot of trouble to any visually impaired personnel. Education is a basic human right and it applies to all. Every participant mentioned that they cannot understand why people have not yet accepted this simple fact about a person with special needs.

#### **3.2.4 Limited Financial Resources Challenges**

In the response of if they face any kind of obstacles in the implementation of rehabilitation for the students, the participants of both of the NGO's said, first of all, since the school is run by its own funding and no government aid is available, in some cases, they have to go through a very bad time financially. During those times they struggled to pay their teachers properly. They teach visually impaired students completely free of charge. Since they have an integrated system, those who do not have any special needs run their institutions with school fees and aid from donor agencies. However, they try not to affect the students in any way.

#### **4. Key Findings**

The researcher summarized the key findings in this section. This section of the research discussed and described the research questions. The research questions are discussed in the following part in separately.



#### **4.1 What are the service delivery approaches of the non-government organizations of Bangladesh?**

Non-governmental organizations in Bangladesh are generally run on their own funding. They get this funding by managing various sponsors and also manage donations from various organizations.

Besides, several NGOs also get donations from the government. They help the special need community become self-sufficient by providing education, medical care, credit support for income-generating activities, reducing malnutrition, raising awareness, and hygienic support to those with special need community members. Along with studies, students acquire various life skills here and use those skills to produce various products. School authorities also make arrangements to earn money from these products.

#### **4.2 How these services play an effective role in rehabilitation?**

These services help the students not only in cognitive skills but also in acquiring the necessary skills for their spiritual excellence and daily living. Also they find the right way to apply their learning and gain practical experience on how to apply it. Some organizations help them enter the workplace through job placement.

#### **4.3 What are the challenges on the road to rehabilitation?**

The first thing they need to enter the career or to make their life functional is opportunity. In this case, the first obstacle they have to face is non-acceptance. Most people do not want to believe that because of their special needs they can do any work completely on their own initiative and effort. Because of these belief employers do not want to give them the opportunity to prove their skills. Again, in many cases, even if they get an opportunity, the morale is so broken due to social attitudes that it may not be possible to show their maximum skills. Besides, there are policy challenges, networking challenges, awareness challenges, limited financial challenges.

### **5. Limitations**

For this research, the two local NGOs have been selected from Dhaka city, Bangladesh. Interview method was conducted in their Dhaka Office. There are many NGOs inside and also outside Dhaka that work with visually impaired students in Bangladesh. However, due to lack of time, only two NGOs located in Dhaka have been taken. If it is possible to talk to several more rehabilitated people, much more new pieces of information could come. Very little research has been conducted on the subject in the context of Bangladesh. Overall, research on this topic in other countries of the world is slightly less than other subjects in terms of numbers. The lack of related literature is a big obstacle. Also, many of the available resources were not accessible.



## 6. Conclusion

Research investigations confirmed that NGOs played a significant part in the development of facilities on the global area for individuals with disabilities. This position has been played frequently, particularly in the absence of sufficient Government support (Velema et al; 2010). Over the past ten years, NGOs have worked in Bangladesh with persons with impairments, together with visually impaired personnel. Therefore, the goal of the study is to assess the services they offer and how well they work to rehabilitate visually impaired people in Bangladesh. The study has successfully reached its goals because it demonstrates that local NGOs in Bangladesh are implementing several initiatives for the visually impaired to empower through approaches that support Student friendly environment, academic activities as well as various co- curricular activities, practical education, activity-based learning, and job placement as rehabilitation services. In addition to conducting vocational activities in local NGOs, they also provide practical experience in earning money from them. Such NGOs have hostel facilities for students to stay in which are specialized and visually impaired students friendly. Some NGOs take the initiative to contact various companies and convince them to employment of visually impaired students. The study finds that there are very few local NGOs working in education and employment, despite the funding and facilities that help the visually impaired gain enrollment to both education and employment. Local NGOs also don't offer any initiatives to raise awareness of disability issues in their communities. In actuality, these awareness campaigns would greatly aid in reducing societal stigma, particularly among school children. It is imperative to increase employee and company understanding of disabilities in the workplace also. Many times due to a lack of adequate funds appropriate initiatives are not being implemented.

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## Proficiency in Phonological Awareness Performed by Bangladeshi Children with Intellectual Disabilities

Md Asiqur Islam Anik<sup>1</sup>  
Fatima Alam<sup>2</sup>

### 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
	<ol style="list-style-type: none"> <li>1. Phonological skills task</li> <li>2. Classroom observation</li> </ol>
For teachers:	<ol style="list-style-type: none"> <li>1. Questionnaire for teachers</li> </ol>

### 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:

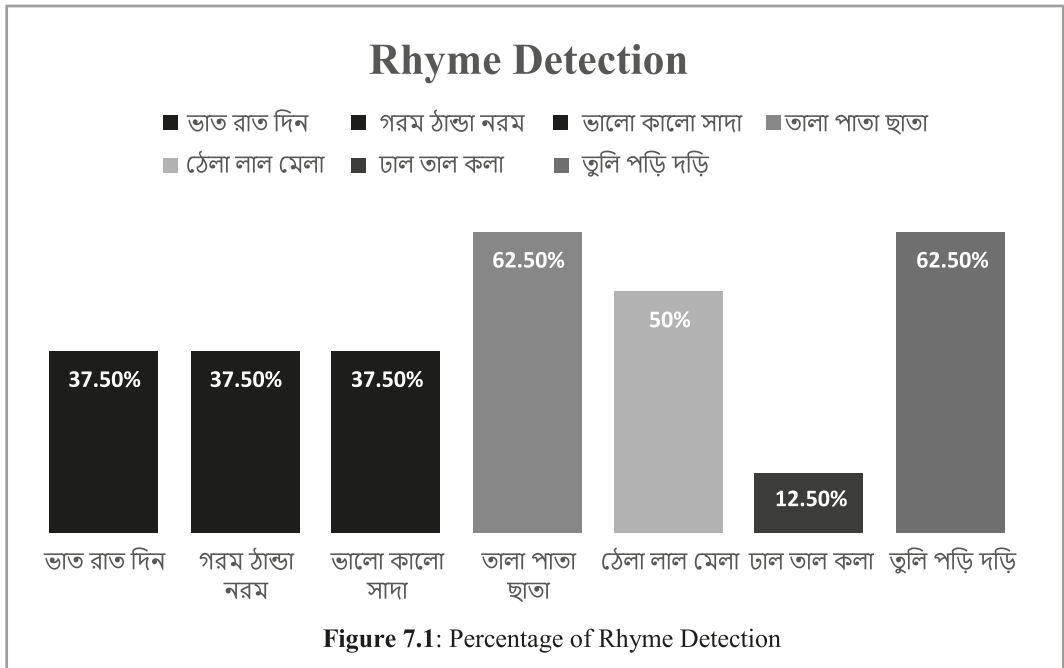
Firstly, the result of 1<sup>st</sup> task between three sounds which are ভাত, রাত, (Vat, Rat) and দিন (Din) about 37.5% of the participants have identified ভাত, রাত (Vat, Rat) as rhymic sounds.

**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**

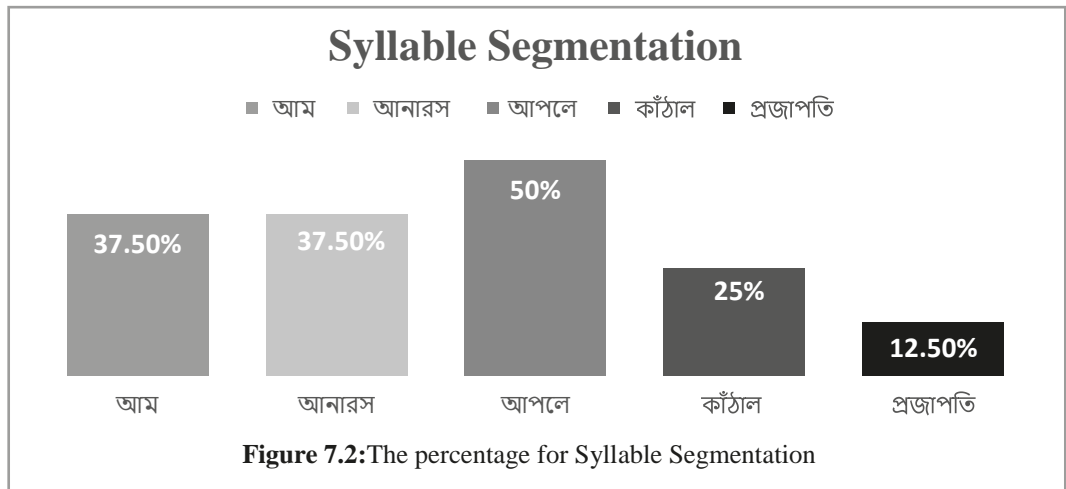
শব্দ (Sounds)	শব্দ (Sounds)	শব্দ (Sounds)	শব্দ (Sounds)
আমি	আমার	তুমি	৩৭.৫%
কাক	কাকা	মামা	১২.৫%
লাল	লবণ	নাক	১২.৫%
তাল	তালী	নালা	১২.৫%
মাছ	মাছি	আছি	৩৭.৫%
ঢাল	চাচা	মাচা	২৫%
টাকা	টক	লোক	৩৭.৫%
খাতা	খাল	কাল	২৫%



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**

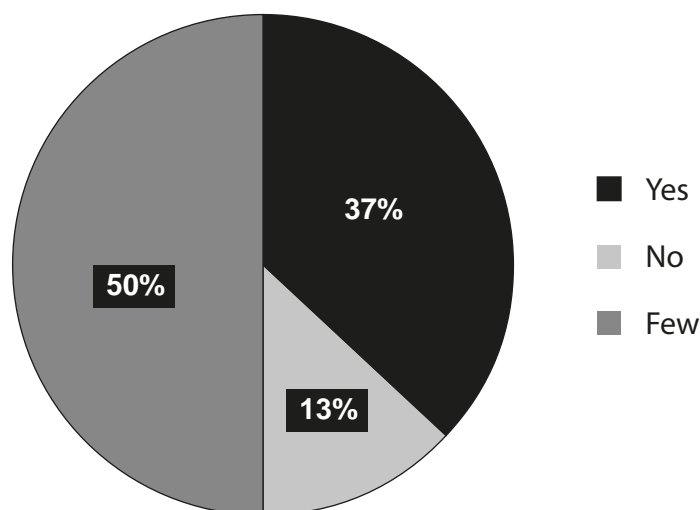
শব্দ (Sounds)	মালা	বাকা	কলা	পানি	রাত
First sound	/ম/	/ব/	/ক/	/প/	/র/
Percentage of understanding	৩৭.৫%	৭৫%	১২.৫%	৫০%	৩৭.৫%



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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## **Therapeutic Interventions and Developmental Progress in An Eleven-Year-Old Child With Autism Spectrum Disorder: A Case Study**

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### **Abstract**

Autism Spectrum Disorder (ASD) is a multifaceted developmental disease distinguished by difficulties in social communication, limited interests, and repetitive activities. Early intervention, including Speech and Language Therapy (SLT), has been shown to be effective in addressing the developmental challenges of individuals with ASD. This case study explored the efficacy of Speech and Language Therapy (SLT) interventions for an 11-year-old female diagnosed with Autism Spectrum Disorder. The results demonstrated that SLT interventions were effective in addressing the participant's developmental challenges. Significant improvements were observed in pre-linguistic skills, receptive language, fine motor skills, awareness of personal distance, and sensory sensitivities. These findings suggest that SLT is a valuable intervention for individuals with ASD.

**Keywords:** Autism Spectrum Disorder (ASD), Speech and Language Therapy (SLT), Speech and language pathology (SLP), Developmental Challenges, Pre-linguistic Skills.

### **1. Introduction**

Autism Spectrum Disorder (ASD) is a multifaceted developmental syndrome marked by persistent difficulties in social interaction and communication, limited interests, and repetitive behaviors (American Psychiatric Association, 2013). The disorder exhibits its manifestations in individuals of all genders, races, ethnicities, and socioeconomic backgrounds, and its severity ranges from mild to moderate to severe (Centers for Disease Control and Prevention, 2023). Further investigation into the etiology of ASD indicates that its development is influenced by a complex interplay of genetic and environmental elements (Geschwind & Levitt, 2007). Frequently identified prior to the age of three, ASD is a condition that remains an individual's entire life.

There are numerous reasons why it is vital to look further into the complex nature of ASD. In the first place, healthcare professionals, families, and individuals are better able to identify and deal with potential obstacles when they have a comprehensive understanding of the disorder's fundamental attributes and symptoms. According to the National Research Council (2001), the provision of individualized support services and early intervention can have a substantial positive impact on the development of individuals with ASD and their overall quality of life.

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Additionally, an understanding of ASD enables the establishment of supportive and inclusive settings that advance the cognitive, social, and emotional growth of those affected. Society can be made more equitable and inclusive through the recognition and appreciation of the distinctive abilities and perspectives of those with ASD. In recent decades, considerable advancements have been achieved in the comprehension of the fundamental origins, attributes, and therapeutic approaches of Autism Spectrum Disorder (ASD). A robust genetic element has been identified in the disorder, wherein the development of the condition is influenced by multiple genes (Geschwind & Levitt, 2007). ASD may also be influenced by environmental factors, including prenatal exposure to specific medications or infections (Brown & Kaufmann, 2016).

In order to identify individuals with ASD, clinicians developed a wide range of diagnostic instruments and evaluation criteria (Lord et al., 2012). These instruments assess behavior, communication, social interaction, and interests to ascertain whether an individual aligns with the diagnostic criteria for ASD.

Intervention at an early stage has become a crucial element in the management of ASD. Research has demonstrated that intervention programs, including early intensive behavioral intervention (EIBI) and applied behavior analysis (ABA), improve social, communication, and adaptive behavior skills in individuals with autism ASD (National Research Council, 2001; Wetherby et al., 2018).

Pharmacological treatments have been found to be beneficial in managing specific symptoms associated with ASD, including anxiety, hyperactivity, and sleep disturbances, in addition to behavioral interventions (Aman et al., 2005; Handen et al., 2009).

This article provides a comprehensive analysis of a case study on an 11-year-old girl who was diagnosed with Autism Spectrum Disorder (ASD). The researcher investigates the subject's personality traits, social interactions, and behavioral patterns in relation to their developmental challenges. The heterogeneity of Autism Spectrum Disorder (ASD) and the imperative for personalized interventions and therapeutic strategies are underscored in the study through an examination of the distinct presentation of each individual.

## **2. Method**

A cross sectional study was conducted to explore the effectiveness of Speech and Language Therapy (SLT) interventions in improving the developmental challenges of an 11-year-old female diagnosed with Autism Spectrum Disorder (ASD) over a 10-week period. The study aimed to assess the impact of SLT on the subject's preverbal skills, communication aptitude, sensory sensitivities, fine motor skills, and daily living activities.

The participant was diagnosed by a multidisciplinary team at Bangabandhu Sheikh Mujib Medical University (BSMMU) using The Autism Detecting Checklist (ADCL). She met the inclusion criteria for mild to moderate ASD. Additionally, a clinical evaluation conducted at the University of Dhaka detected the following conditions in her: intellectual disability, speech and language disorder, development delay, autism spectrum disorder, and socialization deficit.



Therapeutic interventions were administered by a qualified Speech and Language Therapist (SLT) over ten weekly sessions, each lasting one hour. The sessions targeted specific goals related to eye contact, attention, joint attention, prepositions, color concepts, fine motor skills, reducing echolalia, and sensory desensitization.

Data collection involved a multi-dimensional assessment comprising formal assessments such as the Comprehensive Observation and Manipulative Developmental Assessment of Language and Learning (COM-DEALL), Social and Language Developmental Checklist (SLDC), supplemented by qualitative observations recorded during therapy sessions. The assessments spanned preverbal skills, linguistic profiles, non-verbal communication, sensory perceptions, cognitive abilities, and daily living activities.

Qualitative analysis of the collected data involved systematic review and interpretation of observed changes, improvements, or challenges noted during and after each therapy session. The participant's progress was tracked against the predetermined developmental goals, with specific attention to changes in behavior, skills acquisition, and responsiveness to therapeutic interventions.

Ethical approval was obtained from the Proyash Institute of Special Education and Research, ensuring adherence to ethical guidelines and confidentiality. The study obtained informed consent from both the participant and her family. The procedure clarified the voluntary aspect of involvement and the participant's rights to withdraw from the study at any given moment.

The study found that SLT interventions were effective in addressing the developmental challenges of the 11-year-old female with ASD. The participant showed significant improvements in her preverbal skills, communication, sensory sensitivities, fine motor skills, and daily living activities. These findings suggest that SLT is a valuable intervention for individuals with ASD.

### **3. Result**

Zara's journey through Speech and Language Therapy (SLT) sessions revealed a multifaceted developmental trajectory encompassing pre-linguistic skills, receptive and expressive language, fine motor skills, personal distance awareness, sensory responses, socialization, and self-help capabilities.

Pre-linguistic skills exhibited notable advancements, including improved turn-taking awareness, enhanced imitation skills, and a growing sense of anticipation. However, attention span limitations persisted, necessitating ongoing attention and support.

Receptive language skills showed gradual progress, with advancements in understanding colors, prepositions, pronouns, action words, and following simple commands. Zara's comprehension expanded, indicating developmental strides in this domain.



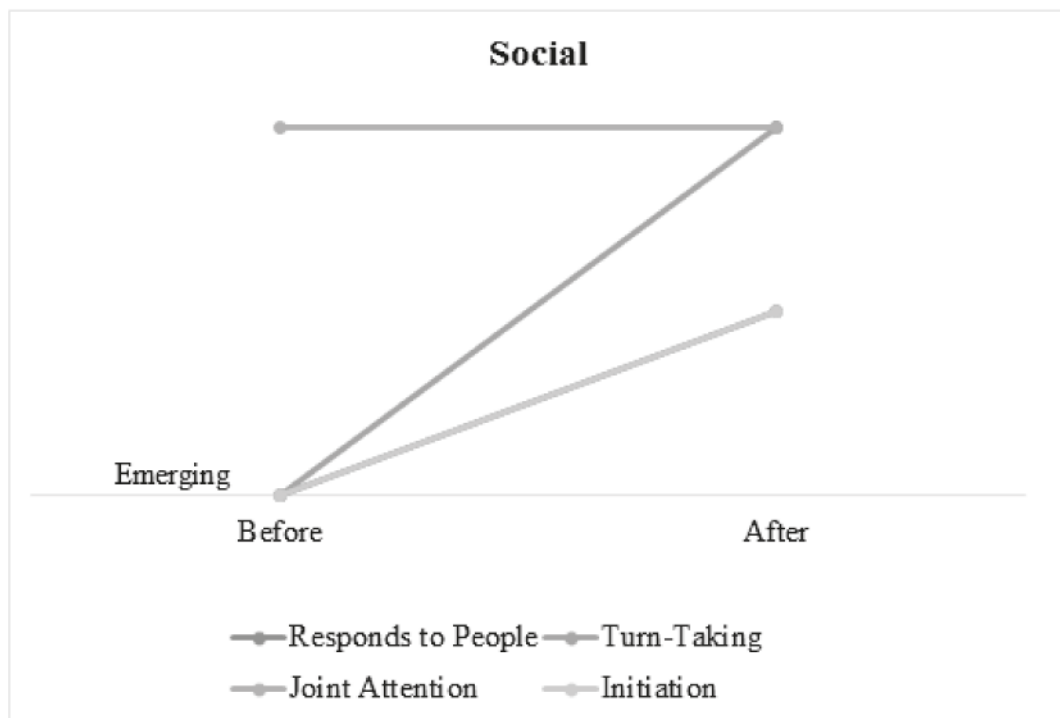
Assessment revealed a heterogeneous expressive language profile, with a limited but expanding vocabulary and the ability to imitate complete sentences and recite rhymes. Echolalia and irrelevant speech gradually reduced, with occasional instances observed.

Fine motor skills witnessed improvements, although challenges persisted. X's ability to write digits and letters into boxes and engage in fine motor activities showed gradual enhancement, indicative of a developmental trajectory.

Personal distance awareness and sensitivity to environmental stimuli like the Azan call to prayer and ambulance sirens improved. The gradual desensitization to these stimuli underscored improved tolerance and adaptability.

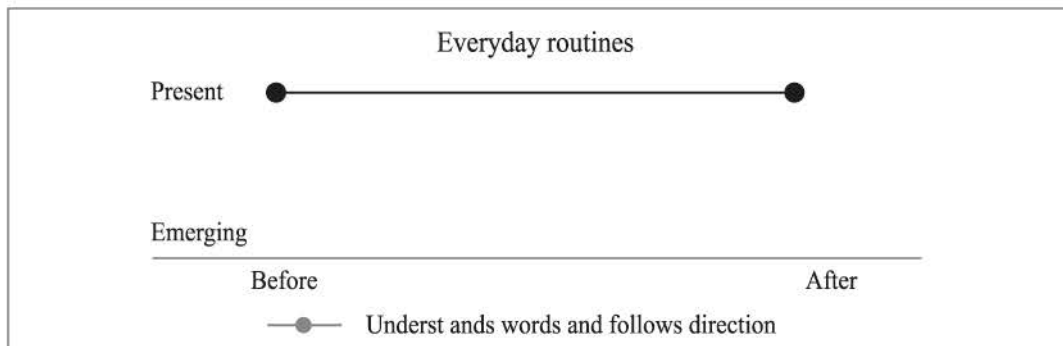
Joint attention and cooperation improved over sessions; however, challenges in socialization, particularly sharing food, remained unchanged. Progress was observed in engaging in joint play activities, albeit with intermittent manifestations.

Self-help skills showcased incremental progress, particularly toilet training, while feeding and dressing skills remained notably deficient. Incremental advancements were noted in achieving self-sufficiency. Here the progress before and after the session is shown graphically what was measured using a test tool Adapted from "11 Skills Toddlers Master Before Words Emerge from Let's Talk About Talking By Laura Mize, M.S., CCC-SLP.

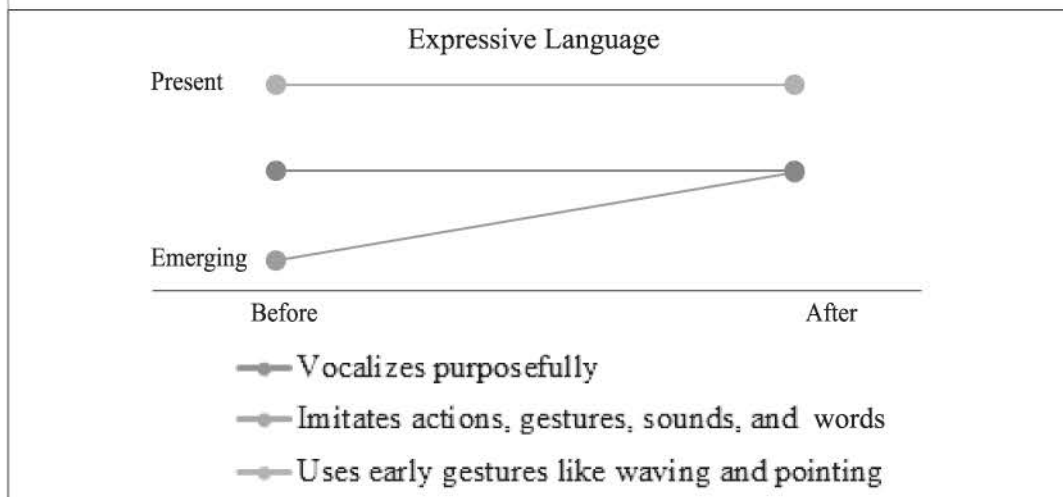


**Figure 3.1:** Progress in social skills before and after

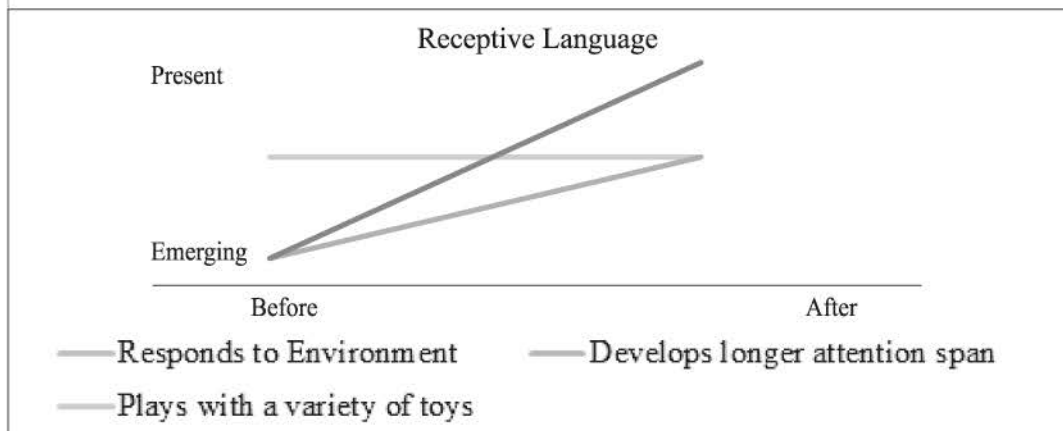




**Figure 3.2** Progress in everyday routines skills before and after



**Figure 3.3** Progress in expressive Language skills before and after



**Figure 3.4** Progress in receptive Language skills before and after



Comparative session analysis revealed a gradual reduction in echolalia, irrelevant speech, and distractions. Consistent improvements were observed in eye contact, attention, and fine motor skills. Sensory sensitivities saw progressive reduction, although occasional heightened reactions were observed. Socialization and self-help skills demonstrated intermittent progress, whereas personal distance awareness showcased gradual improvement. In a table, all these changes are shown below.

**Table 3.1** Changes in behavior before and after

<b>Expressive Language</b>	<b>Changes in behavior</b>
Echolalia & irrelevant speech	Reduced
Fine motor skills	Developing
Personal distance awareness	Developing
Sensitivity to environmental stimuli	Reduced

Zara's developmental journey presented a complex interplay of advancements and persistent challenges, highlighting the need for continued and targeted intervention strategies to optimize her communicative, adaptive, and social functioning

#### **4. Conclusions and Discussion**

The objective of this study was to investigate the efficacy of Speech and Language Therapy (SLT) interventions in addressing the developmental difficulties of an 11-year-old girl diagnosed with Autism Spectrum Disorder (ASD). The results of the study offered significant contributions to our understanding of the complex and varied qualities of her developmental path, uncovering progress as well as ongoing obstacles in numerous areas.

Significant progress was observed across multiple developmental domains for the participant, Zara's as a result of targeted SLT interventions. Pre-linguistic abilities, receptive language, fine motor skills, awareness of personal distance, and sensory sensitivities all demonstrated improvement. Nonetheless, socialization and self-help skills continued to present obstacles, demonstrating the continued necessity for focused interventions.

The intricate interaction among different developmental domains individuals diagnosed with Autism Spectrum Disorder, as evidenced by Zara's case, highlights the disorder's heterogeneous characteristics. Although specific therapeutic interventions demonstrated beneficial outcomes in some domains, the continued presence of obstacles in others underscores the necessity for customized and long-lasting interventions.

Early intervention is crucial for addressing the developmental challenges associated with ASD, as the study emphasizes. This underscores the potential effectiveness of targeted SLT interventions in augmenting diverse domains of motor skills, sensory processing, communication, and social interaction among individuals diagnosed with ASD.



Even so, the research also highlights the diverse and specific characteristics of Autism Spectrum Disorder (ASD), this emphasizes the significance of personalized therapies designed to focus on the unique challenges and needs of every child. The enduring nature of difficulties in specific areas indicates that individuals with ASD require continuous assistance and focused interventions in order to maximize their overall functional capacities and quality of life.

In summary, the SLT interventions achieved favorable results across multiple developmental domains for Zara. However, due to the elaborate characteristics of ASD, further investigation is necessary to determine the most effective approaches, personalized interventions, and comprehensive support systems that can address the diverse needs of individuals on the autism spectrum. To enhance intervention outcomes, future research should concentrate on developing more effective and individualized interventions, identifying predictors of treatment success, and comprehending the underlying mechanisms of ASD.

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## Biography

**Rehana Akhter Chowdhury** is currently working as a Senior Lecturer at the department of Audiology and Speech-Language Pathology at PISER. She is also performing the duty of Department Coordinator and Clinical Supervisor. She holds Master's in Speech-Language Pathology from Dhaka University, M.Sc. in Geography from Dhaka University, B.S.Ed. from National University, and B.Sc. from Dhaka University. Her specialized training includes coursework in speech-language therapy at SAHIC, mentored by experts from Germany, the UK, and India. Additionally, she trained in clinical settings such as Bradford Royal Infirmary and St. Luke Hospital in the UK, and completed Auditory Verbal Therapy training in India. With 25 years at SAHIC as a teacher for the deaf and senior speech-language therapist, Rehana brings her expertise to her roles at PISER and as a part-time lecturer at Dhaka University. Her specializations include voice and fluency disorders, sensory processing, and feeding issues. She also provides training for BRAC professionals and educators working with special-needs children.

**Md Hasan Al Banna** graduated with a Bachelor of Science (Honours) in Audiology and Speech-Language Pathology from Proyash Institute of Special Education and Research (PISER), affiliated with Bangladesh University of Professionals, in 2024, earning a CGPA of 3.80 out of 4.00. His strong academic record was further recognized by PISER's Academic Excellence Award for 2021-2022. Hasan completed a comprehensive one-year internship, gaining clinical experience at Proyash, Combined Military Hospital (Dhaka), BSMMU, and MERF-ISH (India). His educational foundation includes an A+ in both Higher Secondary Certificate from Dhaka Residential Model College and Secondary School Certificate from Police Lines Adarsha High School, Tangail, in the science stream. Hasan's commitment to advancing speech-language pathology is reflected in his academic achievements, internships, and keen focus on clinical practice and audiology research, underscoring his dedication to contributing to the field.



## The Government Policies on the Education, Employment and Rehabilitation of the Children with Special Needs in Bangladesh, its Limitations and Ways to Overcome

Merajul Islam Opi<sup>1</sup>  
Sammi Chowdhury<sup>2</sup>

### Abstract

This research looks at Bangladesh's whole legal framework with regard to special children's employment, rehabilitation, and the laws' restrictions. For the purpose of achieving any aim, the application of law is crucial. The goal of this study was to identify a better living system, such as employment, where people are employed to do what is best for them. At a certain age, people may require assistance to live their lives as they would in old age. Open-ended questionnaires were used to obtain the data. This study explores Bangladesh's government policies on the employment, education, and rehabilitation of children with special needs. It assesses the existing regulations, their shortcomings, and the report emphasizes how crucial inclusiveness and fair chances for kids with special needs are to the social and economic advancement of Bangladesh. This research looks at potential treatments and policy implications in an effort to strengthen the framework for these kids' holistic development and promote a society that is more accepting and caring. Purposive sampling was used to choose the participants. The findings showed that people's perceptions of inclusive environments were generally favorable.

**Keywords:** Employment; Rehabilitation; Limitations; Special Child; Special Education; Policy.

### 1. Introduction

A government policy is a regulation or guiding concept that should improve decision-making and provide favorable results that benefit the group or community. The justifications for why certain actions are to be taken are outlined in government policy. As a result, protocols and procedures are created to ensure that policies are followed correctly. Disability is no longer a topic that should be discussed in depth. At some point, handicapped people must demonstrate that they are just as competent and effective as other people. The government has an obligation to offer a reliable and encouraging support system. The International Human Rights Commission established two overarching principles: diversity and equality for all people, Persons with Disability (PWD). The literature review, according to the researcher, acts as the introduction, setting the tone for the remainder of the review. It gives background information, defines the review's parameters, describes the goal or research question, and highlights the importance of the subject being examined. Understanding the current research and discussions pertinent to a specific topic or field of study is the aim of a literature review, which is then presented as a written report.

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Overcoming legislative constraints and finishing life planning which includes policies, employment, education, and rehabilitation were the main objectives. If a special youngster gets an education but struggles to find employment later in life, he will suffer greatly. If remarkable chances aren't really given, he will never be able to appreciate the importance of special education. With that in mind, the main goal of our research is to adjust national policies to better fit their everyday needs. This chapter is divided into two main sections:

## **2. The First Section Starts by Discussing the Rehabilitation, Education, Employment of Children with Special Needs in Bangladesh**

Malak, Saiful & Begum, Hosne & Habib, Md Ahsan & Banu, & Roshid, Mohammad. (2014). *Inclusive Education in Bangladesh: Are the Guiding Principles Aligned with Successful Practices?* This study demonstrates that the area of special education cannot achieve maximum success with just policies and no implementation (e.g., see Ainscow & Miles, 2009; Bourke, 2010; Slee, 2006). This argument can be correctly applied to situations when policy makers or education providers, for example, are imposing common beliefs about special education policy from another context developed countries, for example on developing nations. According to Ainscough, Booth & Dyson (2006) and Armstrong (2000), IE is very context-oriented, and educators have long been seen as key players in addressing inclusion in the classroom (e.g., see Smith & Leonard, 2005). Under TQI-SEP, not all secondary teachers had access to the IE professional learning opportunities. Consequently, it's imperative to increase the reach of professional nationwide chances for learning. Support from the school and the chance for all teachers to participate in excellent professional development are also necessary for an IE to be effective. In order to provide outstanding educational opportunities, providers must carefully evaluate the local environment as well as the experiences of teachers and other stakeholders. Claims of the project's advantages include that the SSC pass rate rose to 82% (CIDA, 2012). However, IE wouldn't be fully realized until a sizeable percentage of students (18%) were included in the group of successful achievers. The percentage of women in relation to the gender issue. Inclusive education is primarily a policy concern in Bangladesh. The legal or constitutional foundation that guides choices about admission to the two educational systems elementary and higher education, are created. The 1990 Compulsory Primary Education Act was the first government move to bring special needs children's education under legal jurisdiction. There are several national policy guidelines issued by the government.

Uddin, Taslim. (2020). *Challenges for Disability Inclusive Employment in Bangladesh*. The study demonstrated the difficulties Bangladesh has in finding work for people with disabilities. "We have a moral duty to remove the barriers to participation and to invest sufficient funding and expertise to unlock the vast potential of people with disabilities," argues renowned scientist Stephen Hawking. Individuals with impairments are more susceptible to poverty and unemployment than others. The main causes of disability are trauma, which can result in multiple body injuries, traumatic brain injury, spinal cord injury, arthritic disorders, stroke, or childhood conditions like cerebral palsy, autism



spectrum disorders, and other congenital diseases (Bangladesh Disability Act, 2013). Therefore, we need to create a labor market that people may readily and adequately enter without any reservations. There will be regulations in place and open positions pertaining to their disability and special needs. The government need to provide additional cash and take other appropriate actions to increase the number of jobs available to handicapped people. He may pay his expenses and indulge in leisure activities using the money he earns from employment. People with disabilities are increasingly frequently observed in a variety of vocations across the community.

Islam, O' Connell, Uddin & Rathore (2019). Disability and rehabilitation medicine in Bangladesh: Current scenario and future perspectives. The researcher showed that current state of our nation's rehabilitation system for those with special needs has been illustrated in this study. Approximately 40 million different students reside in Bangladesh, who are served by a vast and intricate educational system. Opportunities for education are provided through official and informal government-managed programs that are supplemented by independent business and community-driven projects and government funding. It has been discovered that an additional 150 disability-related institutes, organizations, and nongovernmental organizations (NGOs) operated in Bangladesh's public and private domains. According to Handicap International, over 300 of the almost 30,000 NGOs that are active in the nation have already worked with individuals who have special needs or disabilities. The number of governmental and non-governmental organizations that assist in the rehabilitation of individuals with special needs has been discovered. The research demonstrates the extent of the future and how to enhance their rehabilitation program. Current issues including the financial crisis, effective budget management, the monitoring system, and the overall progress report system have also been covered. They should have easy access to buildings, public areas, transportation networks, and educational institutions. In addition, kinship care must assume a leadership role by enhancing residency training programs, engaging with other specialties to inform them of the importance of an early, comprehensive, integrated rehabilitation, and creating neurorehabilitation services and training for individuals with special needs.

Mr. A.H.M Noman Khan et al, (December 2002). Employment Situation of People with Disabilities in Bangladesh. In this research the researcher stated that employment of people with disabilities and special need in a just and fair environment of equal opportunities and scopes will ensure economic sovereignty and contribute in the reduction of poverty. When the rate of poverty will be decreased, then the positive influence will occur, improving the situation of the people with disabilities in the country. Poverty has been directly linked to as a significant influencing factor in recent development studies. Poverty has been directly linked to as a significant influencing factor in recent development studies.

Islam, Sk. Iftesham. (2023). Persons with Disabilities and Their Right to Work: Bangladesh's Failure to Respect International Human Rights Model of Disability. The researcher also looked at the current state of employment and livelihood issues pertaining to people with disabilities globally, as well as the employment and livelihood of people



with disabilities in Bangladesh. The study's primary goals were to investigate the possibilities, obstacles, and challenges that people with disabilities may have in obtaining employment as well as to make recommendations for the future growth of an inclusive labor market in Bangladesh. Despite advancements since 2010, the availability of data remains restricted in low- and middle-income countries (WHO, 2011). 2015, as reported by the Department of Economic and Social Affairs Nonetheless, there is still more to be done to improve the job situation for people with disabilities nationwide.

Nuri, R. P., Aldersey, H. M., Ghahari, S., Huque, A. S., & Shabnam, J. (2021). The Bangladeshi Rights and Protection of Persons with Disability Act of 2013: A Policy Analysis. In this study according to the UN Convention, Bangladesh's Rights and Protection of Persons with Disability Act of 2013 offers assistance to children with disabilities and their families. The Act is consistent with the principles of international disability policy as well as the Sustainable Development Goals. The report highlights the necessity of strong monitoring systems, cooperation between ministries, and policy initiatives that are family-centered, autonomous, and secret. It is imperative for policymakers to guarantee emergency responses that are inclusive of individuals with disabilities and to involve them and their families in consultations to ascertain their requirements.

## **2.1 The Second Section Focuses on the Rehabilitation, Education, Employment of Children with Special Needs all Over the World**

Pankaj Bajpai & Damayanti Sethy (2016). Rehabilitation of Children with Special Needs in India: Rehabilitation of Children with Special Needs in India. This study investigated how having a kid with a handicap has been viewed as a hardship in our culture. It is crucial for parents to embrace their children and support their development. Parents will be a kid's primary teacher and facilitator in the areas of sensory-motor, cognitive-perceptual, and psycho-social development since each child develops in these domains in a unique and dynamic way.

Dr. Shaista Majid & Adeela Razzak (2015). In this work, the researcher constructed a model for job training and vocational rehabilitation for individuals with special needs. The researcher looked into building a model of vocational training programs for handicapped people using Open and Distance Learning (ODL) mode. The goal of this study was to provide a model for impaired people's vocational training programs.

UNICEF Malaysia, (2014). Rehabilitation and Habilitation for Children with Disabilities in Malaysia. This study provides a definition of rehabilitation under the heading "Rehabilitation Services." Rehabilitation is the term for health care treatments that assist an individual in regaining or improving functioning for everyday life as well as communication abilities that were lost or compromised as a result of illness, injury, or disability.

Like many other countries, Bangladesh must undertake the critical challenge of developing and implementing effective policies for the employment, education, and rehabilitation of



youth with special needs. Oftentimes, these children require extra support and opportunities to develop into competent, contributing adults. This study's goals are to critically examine the current policies that deal with these young people, pinpoint their flaws, and offer practical solutions to overcome these challenges.

### 3. Methodology

The research approach used to gather the data for this study is covered in this chapter. study technique discussed the approach employed during the study process and demonstrated the research outcome (Sileyew, 2019). The research design, study strategy, study area, sample and sampling techniques, data gathering procedures, tools for data collection, and data analysis procedures are all included in the research procedures, or methodology.

The purpose of this research was to investigate the limitations of our national education policy for the children with special needs. Then to understand the ways of overcoming the challenges for implementing those policies. Also, for understanding the importance of rehabilitation and employment of children with special needs. Finally, for assessing the educational policies for the better development of education and to identify what parents think about the role of inclusive education on rehabilitation of children with special needs. The methodology of research refers to the systematic approach or framework used by researchers to conduct a study or investigation.

#### 3.1 Methodology Matrix

Research question	Data Source	Sample size	Sampling	Research Instruments
<b>1. What are the effective ways of overcoming the limitations of existing policies about special education?</b>	Parents, Special Educationist, NGOs, Policy Makers.	20 Participants Parents-10 Special Educationist-5 NGOs-3 Policy Makers-2	Convenience sampling	Open Ended Questionnaire
<b>2. What are the possible solution of those challenges about implementing policy?</b>	Parents, Special Educationist, NGOs, Policy Makers	20 Participants Parents-10 Special Educationist-5 NGOs-3 Policy Makers-2	Convenience sampling	Open Ended Questionnaire
<b>3. What are the effective use of rehabilitation system for special children in Bangladesh?</b>	Parents, Special Educationist, NGOs, Policy Makers	20 Participants Parents-10 Special Educationist-5 NGOs-3 Policy Makers-2	Convenience sampling	Open Ended Questionnaire



### **3.2 Research Design**

Qualitative research methodologies were used to perform this study. The gathering and examination of numerical data to characterize, explain, forecast, or manage occurrences is known as qualitative research (Gay, Mills, & Afrasian, 2009).

### **3.3 The Participant and the Sampling Technique**

Any whole group that shares at least one trait is called a population. The group of people that the intervention aims to study and make conclusions from is known as the target population. The target population's characteristics, as well as those of any subgroups, should be explicitly stated in the cost-effectiveness analysis. People do not make up populations. People can make up a population, but they are not the only ones. Parents, special educationists, NGOs, and policy makers were the intended audience. Any whole group that shares at least one trait is called a population. The set of people from whom the intervention plans to conduct research and draw conclusions is known as the target population (Louise Barnsbee, 2018).

The target population's characteristics, as well as those of any subgroups, should be explicitly stated in the cost-effectiveness analysis. People do not make up populations. People can make up a population, but they are not the only ones. Teachers were the intended audience. The convenience sample rules were followed in the identification of participants. The quantity of individuals involved. The researcher aimed to gather data from policy makers in Bangladesh, special education specialists, parents, and non-governmental organizations. Three NGOs, two policy makers, five special educators, and ten parents were present.

## **4. Data Collection Tools**

The researcher utilized open-ended questionnaires as a method of gathering data. The researcher was shown the steps involved in collecting data as the individuals filled out the questionnaires. Respondents are allowed to reply to questions in their own words without being restricted by predefined categories or options while using an open-ended questionnaire, a type of survey or data collection instrument (Susan Farrell, 2016). To gather qualitative data and develop a thorough picture of the participants' thoughts, emotions, opinions, and experiences, an open-ended questionnaire is employed.

### **4.1 Data Collection Methods**

Ten parents, five special educators, three non-governmental organizations, and ten policy makers took part in open-ended questionnaire sessions in this study. Open-ended questionnaires are one kind of data collection tool that allows participants to give extensive qualitative information by answering questions in their own words, according to the authors of "Research Methods in Education." Louis Cohen, Lawrence Manion, and Keith Morrison (2000) emphasize the value of this method for exploring complex subjects and going deeply into respondents' thoughts and experiences.

### **4.2 Data Analysis Technique**

Since it was a qualitative study, the researcher carried out this thematic analysis examination. According to Ary (2010:481), understanding the phenomenon being studied,



synthesizing data and explaining relationships, theorizing about how and why the relationships appear as they do, and tying new knowledge to what is already known are all part of the data analysis process in qualitative research. According to Bodgan & Biklen (2006:157), analysis entails a variety of tasks, including working with data, organizing it, dividing it into manageable chunks, synthesizing it, looking for patterns, determining what is significant and vital to learn, and selecting what information to share with others.

In this research, thematic analysis will be employed to systematically identify, analyze, and report patterns within qualitative data concerning government policies on the education, employment, and rehabilitation of children with special needs in Bangladesh. The process will involve coding the data to generate themes that capture the core issues and insights related to the policies, their limitations, and potential solutions. This will include detailed examination of policy documents, interviews with stakeholders (such as educators, policymakers, and parents), and relevant literature. Thematic analysis will facilitate the understanding of the nuanced experiences and perspectives of different stakeholders, enabling the identification of recurring themes and sub-themes that highlight both the strengths and gaps in current policies, and inform practical recommendations for overcoming these limitations.

#### **4.3 Ethical Considerations**

Several ethical factors need to be taken into account when doing research on government policies in Bangladesh that pertain to the education, employment, and rehabilitation of children with special needs in order to guarantee that the study is carried out ethically and respectfully. First and foremost, there is a rigorous need to protect the children's and their families' privacy and confidentiality. This entails getting guardians' informed approval and making sure all data is anonymized to safeguard individual identities. In order to authentically and impartially portray the views and experiences of children with special needs and their families, the research should, secondly, refrain from any kind of discrimination or bias. Thirdly, it is important to think about how the research's conclusions could affect the participants and the larger society in order to offer suggestions that would really enhance procedures and policies without having unintentional negative effects. In addition, researchers have to carefully manage the challenges of working with vulnerable groups, offering the assistance and referrals that the children and their families may require in the event that their involvement in the study presents any problems or concerns. Lastly, the study ought to aim for cultural sensitivity, honoring regional traditions, and making sure that the research approach is suitable and considerate of Bangladesh's sociocultural setting.

#### **5. Findings**

In this part, the researcher discussed the results in a summary. The research questions were discussed and described in this part of the research. The research on government policies regarding the education, employment, and rehabilitation of children with special needs in Bangladesh faces several limitations. These include data availability and reliability, the broad scope of the study, regional variations, implementation and monitoring challenges,



limited stakeholder perspectives, temporal changes, cultural and social attitudes, and resource constraints. Addressing these limitations in future research could lead to more accurate, comprehensive, and actionable insights. In this research there was three objectives firstly, to identify the limitations of our national education policy for the children with special needs. Secondly, to understand the ways of overcoming the challenges for implementing those policies. Thirdly, to understand the importance of rehabilitation and employment of children with special needs. The results of the theme analysis were presented by the researcher.

### **5.1 Theme 1: Parental Perception towards the Government Policies on the Education, Employment and Rehabilitation of the CWSN in Bangladesh**

In Bangladesh, there is a typically divided impression among parents regarding government policies for the education, employment, and rehabilitation of children with special needs (CWSN). A significant number of parents value the government's endeavors to enhance educational accessibility by means of inclusive education laws and special education initiatives. Nonetheless, some parents have expressed concerns about the efficacy and execution of these regulations, pointing out deficiencies in infrastructure, qualified staff, and resources. Additionally, it is believed that there are few work prospects for CWSN and that skill development and job placement receive insufficient assistance. Despite being acknowledged, rehabilitation programs are frequently viewed as inadequate and unreliable. In general, parents believe that although there has been improvement, more comprehensive and well-enforced policies are still needed to really assist the growth and social integration of CWSN. One of the participants said *“These days, the government is very knowledgeable about policy, employment, and education, but it is still far from achieving the desired results since regulations are in place but are not adequately enforced.”* However, parents often express dissatisfaction with the implementation and enforcement of these policies, citing inadequate infrastructure, insufficient specialized training for educators, and limited employment opportunities. The rehabilitation services, though well-intentioned, are frequently viewed as under-resourced and poorly managed. Consequently, parents advocate for more robust policy enforcement, enhanced teacher training, and greater investment in rehabilitation programs to truly meet the needs of their children and support their integration into society.

### **5.2 Theme 2: Special Educationists' Perception towards the Government Policies on the Education, Employment and Rehabilitation of the CWSN in Bangladesh**

The government's policies for the education, employment, and rehabilitation of children with special needs (CWSN) are generally viewed by special educationists in Bangladesh as progressive, but with inadequate implementation. Even while they support programs like the Persons with Disabilities Rights and Protection Act of 2013 and the National Education Policy of 2010, they frequently point out that the essential infrastructure, skilled staff, and resources are lacking. Although the policies seek to advance equitable work opportunities and inclusive education, a number of special educationists believe that there is still a substantial gap between the two. To properly incorporate CWSN into mainstream educational and



professional domains, they push for stronger monitoring systems, more financing, and more public awareness. One of the respondents said- *“As special educators, we constantly strive to provide the best care possible for the children with special needs, but we lack the necessary resources and knowledge. If the government provides us with further help, we will be able to provide the best care possible.”* Overall, while the policies themselves are seen as positive steps, the gap between policy and practice remains a significant challenge.

### **5.3 Theme 3: NGOs’ Perception towards the Government Policies on the Education, Employment and Rehabilitation of the CWSN in Bangladesh**

Though they are hampered by financial constraints and practical constraints, NGOs in Bangladesh believe that the government's policies for the education, employment, and rehabilitation of children with special needs (CWSN) are progressive in aim. They acknowledge the government's support for CWSN and commitment to inclusive education, but they also draw attention to enduring implementation deficiencies, including low budget, inadequate teacher preparation, and subpar infrastructure. One of the respondents said- *“Since we are an organization, we don't receive much assistance from the government; instead, we must always rely on donations and fundraising, which can be difficult. Although the government's policies are a positive move, many special needs children still view them as statements of intent rather than reality unless they are properly implemented and adequately resourced.”* This opinion is representative of the larger NGOs' worry that in order to genuinely help CWSN, more concrete assistance and cooperation are needed.

### **5.4 Theme 4: Policy Makers Perception towards the Government Policies on the Education, Employment and Rehabilitation of the CWSN in Bangladesh**

Government policies on the education, employment, and rehabilitation of children with special needs (CWSN) are widely seen by policymakers in Bangladesh as progressive and essential for fostering inclusivity and equitable chances. They contend that these laws are essential to the advancement of the country and provide a strong basis for enhancing the lives of CWSN. They are aware of the difficulties in implementing policies, though, including the lack of resources and the requirement for more awareness and training. A policymaker stated, *“The policies are well-crafted and show our commitment to inclusive education, but there is a significant gap between our aspirations and what we can achieve with the current resources.”* Other respondent stated that *“We need more coordinated efforts and dedicated funding to ensure that our policies for CWSN translate into tangible improvements.”* These programs, in the opinion of policymakers, show a dedication to the advancement and rights of CWSN. They do acknowledge several difficulties, though, such the lack of resources, the requirement for more specialized training for teachers, and the need for more cooperation between stakeholders. Despite these obstacles, authorities are nonetheless upbeat about how these laws might enhance the lives of CWSN, highlighting the need of ongoing initiatives and improvements to close implementation gaps.

### **5.5 Theme 5: The Effective ways of Overcoming the Limitations of Existing Policies about Special Education**

In special education, overcoming the constraints of current policies calls for a multifaceted strategy. First and foremost, in order to guarantee sufficient money for infrastructure,



teacher preparation, and support services, increased financial allocation expressly aimed at special education programs is required. To guarantee a comprehensive approach to policy execution, legislators should also place a high priority on cooperation and coordination among pertinent stakeholders, such as governmental organizations, academic institutions, non-governmental organizations, and parents of children with special needs. It is essential to invest in extensive programs for educating teachers that emphasize inclusive teaching approaches and methods for meeting the requirements of students from a variety of backgrounds. Furthermore, identifying areas for development and guaranteeing accountability may be achieved by regularly evaluating and assessing the success of policies and modifying methods accordingly. Lastly, encouraging societal acceptance and increasing awareness of people with exceptional needs initiatives for advocacy and community involvement can help special education policy succeed by fostering an atmosphere that is more inclusive.

### **5.6 Theme 6: The Possible Solution of those challenges about implementing policy**

Implementing special education policy presents a number of issues that need for a combination of calculated answers. First and foremost, it is imperative to allocate resources and invest in infrastructure. In order to meet the various requirements of children with disabilities, this entails not only providing financing but also making sure that the necessary resources including materials, equipment, and facilities are available. Secondly, it is imperative that instructors engage in professional development. Teachers can better address the needs of all students if they get regular training and assistance on inclusive teaching approaches, assistive devices, and behavior management techniques. Stakeholder cooperation and coordination are also essential. Forming alliances between governmental bodies, academic institutions, non-governmental organizations, neighborhood associations, and caregivers can promote information exchange, pooling of resources, and the creation of all-encompassing support systems. Furthermore, policies may be made more relevant, workable, and culturally sensitive by using a participatory approach to their formulation and implementation, which entails speaking with stakeholders and taking their input into account. Ultimately, cultivating an inclusive and accepting culture requires raising awareness and advocating for change at the institutional and social levels. This might include sensitization seminars, public awareness campaigns, and legislative measures that support inclusion, equity, and diversity in school and society at large. Policymakers may increase the efficacy and impact of special education programs and improve results by tackling these issues with a variety of calculated solutions for pupils with special needs.

### **5.7 Theme 7: The Effective use of Rehabilitation System for Special Children in Bangladesh**

In Bangladesh, effective utilization of the rehabilitation system for special children involves a multifaceted approach that addresses their physical, cognitive, social, and emotional needs. Firstly, ensuring access to comprehensive rehabilitation services is paramount. This includes



physical therapy, occupational therapy, speech therapy, psychological counseling, and other specialized interventions tailored to the individual needs of each child. These services should be provided through a coordinated network of government-run rehabilitation centers, private clinics, and community-based organizations, with a focus on affordability and accessibility, particularly in rural and underserved areas. Secondly, fostering early intervention is crucial. Early identification of developmental delays or disabilities and prompt initiation of rehabilitation services can significantly improve outcomes for special children. This requires raising awareness among parents, caregivers, and healthcare providers about the importance of early screening and intervention, as well as providing training and support to frontline workers in identifying and addressing developmental concerns. Thirdly, promoting inclusive education and community integration is essential. Special children benefit from being included in mainstream educational settings whenever possible, with appropriate accommodations and support services in place to facilitate their participation and learning. Additionally, community-based rehabilitation programs can help integrate special children into social activities, vocational training, and employment opportunities, fostering their independence and inclusion in society. Overall, by implementing these strategies, Bangladesh can enhance the effectiveness of its rehabilitation system for special children, ultimately promoting their holistic development, inclusion, and participation in society.

## **6. Discussion**

The study's findings emphasize how critical it is to address the fact that parents were the participants with the most favorable responses. During the information-gathering process, it was discovered that NGOs, parents, and special educators thought that these regulations presented too many obstacles and constraints. However, owing to demand, the policy makers promised to build the policies in the near future, despite their best efforts to avoid this issue and conceal their flaws.

- a) **Evaluation of Existing Policies for Children with Special Needs:** The first objective of this research was to assess the current government policies in Bangladesh pertaining to the education, employment, and rehabilitation of children with special needs. The findings suggest that while there have been efforts to address the needs of this marginalized group, the policies often lack specificity, are fragmented, and face implementation challenges. A holistic and comprehensive approach is needed to provide adequate support for these children.
- b) **Identification of Limitations:** This study aimed to identify the limitations within these policies. Key limitations include inadequate financial allocation, lack of specialized educational resources, limited vocational training opportunities, and barriers to access to rehabilitation services. Additionally, social stigma and discrimination hinder the integration of children with special needs into mainstream society and the job market.
- c) **Ways to Overcome Limitations:** The third objective was to propose strategies for overcoming the identified limitations. To address the financial constraints, the government should allocate a more substantial budget for special education and rehabilitation programs. Specialized teacher training and resource allocation are



crucial to enhance the quality of education. Vocational training programs tailored to the specific needs and abilities of children with special needs must be developed and made widely available. Sensitization and awareness campaigns can combat social stigma, promoting inclusion and acceptance.

- d) **Promoting Inclusivity:** The final objective was to underscore the importance of inclusivity. Inclusion not only involves policy changes but also a shift in societal attitudes. Bangladesh can learn from international best practices in promoting inclusive education, employment, and rehabilitation. The government must take steps to ensure that children with special needs are not segregated but integrated into mainstream schools and workplaces with necessary accommodations and support systems.
- e) **Holistic Approach:** It is crucial to recognize that children with special needs have diverse needs and abilities. A one-size-fits-all policy may not suffice. Individualized education plans and rehabilitation strategies should be developed to cater to each child's unique requirements, ensuring that they can lead fulfilling lives.

In conclusion, helping Bangladeshi children with special needs with their schooling, jobs, and rehabilitation is a difficult task. The shortcomings of the policies in place have been brought to light by this research, along with suggested solutions to these problems, underscoring the necessity of an all-encompassing and comprehensive strategy. In order to give Bangladeshi children with special needs equitable opportunity and a higher quality of life, the government must put these policies into action in coordination with pertinent partners.

## 6.1 Implications and Significance

The findings of this research have significant implications for both policy and practice in Bangladesh. They underscore the need for a comprehensive and inclusive approach to addressing the education, employment, and rehabilitation of children with special needs. The significance of this research lies in the following aspects:

- a) **Policy Reforms:** The identified limitations in existing policies call for urgent reforms to ensure that children with special needs receive the support and opportunities they require. This research provides a roadmap for policymakers to create more holistic and integrated policies.
- b) **Budget Allocation:** The research highlights the importance of increased budget allocations to adequately fund special education, vocational training, and rehabilitation programs. This has the potential to significantly improve the quality of services provided to these children.
- c) **Inclusive Society:** Promoting inclusive education and employment opportunities can lead to a more inclusive society, where children with special needs are accepted and integrated. This research emphasizes the transformative impact of such inclusivity.
- d) **Awareness Campaigns:** The significance of sensitization and awareness campaigns in combating social stigma and discrimination cannot be understated.



- e) **Individualized Support:** Tailoring education and rehabilitation plans to each child's specific needs and abilities is crucial. Implementing such individualized approaches can greatly improve the outcomes for children with special needs.

## **6.2 Recommendations for Future Research**

Indeed, the following research recommendations pertain to potential future directions in the areas of government policies concerning employment, education, and the rehabilitation of children with special needs in Bangladesh:

- a) **Enhancement of Policy Integration:** Enhance the way that policies related to employment, education, and rehabilitation are incorporated into a comprehensive framework. By adopting a comprehensive approach, it is possible to prevent fragmented efforts and ensure consistency among ministries and government agencies.
- b) **Inclusive Education System Development:** Encourage the integration of kids with special needs into regular schools to broaden the scope of the inclusive education system. Mandating special needs accommodations in all public and private schools is one way to achieve this.
- c) **Teacher Training Programs:** Provide teachers with specialized training to give them the tools they need to work with students who have special needs. Personalized instruction, adaptive technology, and early intervention techniques ought to be the main focuses of these initiatives.
- d) **Employment Quota and Accessibility in the Workplace:** Establish and implement hiring limits for people with special needs in the public and private sectors. Furthermore, it ought to be mandatory for workplaces to furnish appropriate accommodations, like assistive technologies and accessible infrastructure.
- e) **Strengthening Rehabilitation Services:** By funding community-based rehabilitation (CBR) initiatives, creating specialized facilities throughout rural and urban areas, and making sure that family-friendly, reasonably priced services are available, rehabilitation services can be expanded and brought up to date.
- f) **Parental Support and Awareness Programs:** Organize training courses and awareness campaigns for parents and other caregivers of special needs children, funded by the government. The early detection, available resources, and treatment options should be the main topics of these programs.
- g) **Collaboration with NGOs and International Organizations:** In order to guarantee comprehensive and long-lasting service delivery, strengthen the alliances between the government, non-governmental organizations, and international organizations. The main goals of these partnerships ought to be resource mobilization, best practice sharing, and capacity building.
- h) **Monitoring and Evaluation of Policy Impact:** Provide a strong framework for monitoring and evaluating (M&E) all policies and programs aimed at children with



special needs. Regular evaluations of program efficacy, stakeholder feedback channels, and data-driven policy modifications should all be part of this framework.

- i) **Improving Data Collection on Special Needs:** Create a nationwide database to precisely monitor the quantity of kids with special needs, their individual disabilities, and the results of their schooling and career paths. Regular updates to this database are necessary to support policy decisions.
- j) **Legislative and Policy Reform:** To make sure they comply with international standards like the UN Convention on the Rights of Persons with Disabilities (CRPD), review and update current laws, such as the Persons with Disabilities Rights and Protection Act. Make certain that all governmental levels comply with the law and uphold it.
- k) **Funding and Resource Allocation:** Increase government funding for special needs education, employment programs, and rehabilitation services. Make sure that funds are allocated fairly, giving rural and underdeveloped areas where resources are frequently scarce special consideration.
- l) **Promotion of Public-Private Partnerships (PPP):** Promote public-private collaborations in the creation of technology, infrastructure, and support services for kids with special needs. Investments in inclusive education initiatives, assistive technology, and rehabilitation facilities can be encouraged from the private sector.

## 7. Conclusion

In conclusion, the researcher stated that the examination of government policies pertaining to the education, rehabilitation, and employment of children with special needs in Bangladesh highlights both the progress made and the challenges that persist. The significance of this study lies in its ability to shed light on a marginalized segment of society, advocating for their rights, and proposing ways to enhance their overall well-being and integration. The study underscores the importance of inclusive education, emphasizing the need for policies that ensure equal access to quality education for all children, regardless of their abilities. While some strides have been taken, limitations such as inadequate teacher training, lack of accessible infrastructure, and societal stigma remain obstacles to the full realization of inclusive education. The proposed solutions, including tailored training programs for educators and the creation of an inclusive curriculum, aim to transform classrooms into inclusive spaces where every child can thrive. In conclusion, this research has delved into the complex landscape of government policies pertaining to the education, employment, and rehabilitation of children with special needs in Bangladesh. We've illuminated the significant limitations and challenges these policies currently face, including issues related to resource allocation, social stigmas, and hurdles in effective implementation. Furthermore, the study delves into the intricacies of employment policies. It acknowledges the importance of creating a job market that is inclusive and accommodating of individuals with disabilities. Challenges such as limited job opportunities, discrimination, and a lack of reasonable accommodations are identified as barriers to the employment of children with special needs. The proposed solutions,



including awareness campaigns, incentives for employers, and skills development programs, advocate for a more inclusive work environment where diversity is celebrated and talents are nurtured. However, within the context of these challenges, there is a strong foundation for hope and optimism. The objectives of this research were to identify areas for improvement and provide insights for a brighter future. The future holds the potential for overcoming these limitations. By bolstering investment in special needs education, raising awareness, and fostering a culture of inclusivity, Bangladesh can forge a path toward a more equitable and supportive environment for these children. Future policymakers and stakeholders can draw upon the findings of this research to develop and refine policies that better address the unique needs of these children. In the coming years, with sustained commitment, innovative solutions, and collaboration among government agencies, educators, parents, and the broader community, there is hope for a more inclusive and accommodating society in Bangladesh. This vision entails a future where children with special needs not only receive quality education and rehabilitation but also have improved employment prospects, enabling them to lead fulfilling lives and make meaningful contributions to their communities and the nation as a whole.

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## Biography

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## **An Analysis of the Nature of Social Communication Performed by Bengali Speaking High-Functioning Autistic Children**

Sayed Asia Akter<sup>1</sup>

### **Abstract**

The current study was carried out with the aim of analyzing the skills of Bengali-speaking children with autism spectrum disorder in the field of social communication. 25 picture stimulus identification skills were analyzed by performing an experiment called 'picture stimulus identification skills used in social environment'. The results of this study showed that participating Bengali-speaking high-functioning autistic children were able to make an average of 52.8 percent correct identification of stimuli used in a social environment. This is because the ability to identify stimuli used in social environments depends on many factors. Picture stimulus identification skills used in the social environment largely depend on the extent to which he has the opportunity to learn by seeing, knowing and experiencing various elements of social culture with the help of parents or others or by himself. Most of the parents do not want to take their special child out often due to various negative social attitudes, moreover, since children with autism cannot accept changes in routine, they take certain socio-cultural limits according to the child's preferences. As a result, social images lag behind the opportunity to gain experience by recognizing, knowing and repeatedly viewing stimuli.

**Keywords:** Autism, High-functioning autistic children, Communication skill, Social communication, Picture stimuli identification.

### **1. Introduction**

Humans as social being have been living in a communicative world since the dawn of time. Therefore, from the necessity of interaction and communication of social human being, language has been originated. Because at the root of the communication that takes place every moment between people is the use of verbal or non-verbal language. On the other hand, language is the most complex process even among the higher mental processes as the brain or central nervous system produces, processes and controls language. However, due to brain defects, various disorders may arise in the area of language use, language comprehension, language performance, language expression, and may be disturbed the processes of language communication. And one of the language impairments caused by the nature of brain damage, the only source of language, is developmental language disorder (Arif & Jahan, 2014).

Impairments that a child is born with are called developmental language disorder. Autism is one of the developmental language disorders. Autism is a life-long condition characterized by developmental abnormalities of the child's brain that results in a variety of deficits in daily life and behaviors and marked deficits in communication, language development and expression (Arif & Nasreen, 2013). A healthy and normal child naturally

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learns the process of communication along with the gradual development of life as a social being. On the other hand, children with autism spectrum disorder (ASD) show deficit in understanding the practical meaning of language, social communication in different context and situations due to deficits in language skills. The present article analyzes the nature of social communication skills of Bengali-speaking high-functioning children with autism.

Research by autism researchers has proven that individuals with autism are not capable to make social communication properly. To be socially illiterate means to be illiterate in the description of an event. Because the skills needed to successfully describe events are not fully developed in children with autism. For example, language skills, social skills, communication abilities, mental states abilities, pragmatic skills and social cognitive skills etc. The present article analyzes the nature and degree of variation in social communication deficits in Bengali-speaking autistic children.

## **2. Social communication**

Communication is a social activity that at least two people perform their daily social needs. And in the process of communication between these two, people accept language as a reliable cultural medium. They basically express their emotions, feelings, desires, needs, intentions, etc. by adopting language in this communication (Arif & Jahan, 2014). Social communication is the practice of language in social contexts. In this context, Adams (2005) said, Social communication is the combination of social interaction, social cognition, pragmatics, and receptive/expressive language.

In other words, communication is a two-way interaction where data flows between each other. When the level of communication extends beyond the family to the neighborhood-neighbors and others, it falls within the scope of social communication (Nasreen, 2017). Through social communication, a type of interaction develops between people of different classes of society, which is one of the conditions of sociality.

## **3. Autism and social Communication**

DSM-4 states that if a child is unable to use language socially before the age of 3, i.e. cannot understand the language used by others, it is considered as a primary condition for the diagnosis of autism (Nasreen, 2017,p.18). Research on autism worldwide has shown that autistic children exhibit significant deficits in social communication. Because they lag behind in acquiring the various forms of mastery of social communication. Although the language comprehension of high-functioning autistic children is close to that of normally developed children, their pragmatically limitations are quite noticeable. As a result, high-functioning children with autism may not be more successful in social communication with others. The appearance of language deficits in autistic children is variable in terms of degree, ranging from mild to severe in terms of



practical application of the communication (Arif, 2015). The normally developed child learns very easily the rules of social communication at an early age, for example, how to start a conversation, how to take turns, how to invite friends to play, etc. But autistic children cannot acquire such processes in social communication (Turkington & Annan, 2007). As the reason, they explain that autistic children mainly withdraw themselves from social interaction due to defects in the limbic process of the brain. As a result, autistic children show an inability to participate with social partners due to poor eye contact and are indifferent to others. High-functioning autistic children tend to participate in social communication, but may not be able to effectively socialize. Rotheram-Fuller et al. (2013) in the article called 'Social skills Assessments for Children with autism spectrum disorders (ASD)' stated that, autistic children experience variety of challenges in social communication and reciprocity, such as initiating interactions, joint attention, shared interaction, understanding & using social communication and make out others' needs for personal space etc. Autistic children may not actually maintain to social communication. So they have a considerable deficiency in socialization. As a result, they also have problems in communicating with different people in the society (Barua, 2015).

Various researchers on autism and communication have clearly stated in their different studies that one of the main problems of autistic children is deficits in communication or communication skill. Hodgdon (2001) in her research article 'Improving Communication and Behavior' stated that autistic children experience wide-ranging challenges in communication and social skills. According to Wetherby (2006), research has identified social-communication shortages in children with autism that can be structured into two major areas:

1. The capacity for joint attention: which reflects struggle coordinating attention between and object, and 2. The capacity for symbol use: which reflects difficulty learning conventional or shared meanings for symbols and getting the knowledge of gestures, words, imitation, and play. On the other hand, the following two issues are very closely related in terms of social communication. These are: 1. The emergence of joint attention: Children gain three developmental accomplishments that contribute to the ability for joint attention and permit them to be active social partners in learning to talk. Three developmental achievements are:
  - Sharing attention: the ability to share attention usually arises at birth and continues to grow over the first year of life. By 9 months of age, generally the child dynamically observes others and has learned to transferal gaze in the middle of people and objects.
  - Sharing affect: the ability to share affect in expressing emotional conditions to others is evident when a child shows pleasure and directs gaze to the caregiver. By sharing affect, children also acquire to understand emotional states of others.



- **Sharing intentions:** the capability to share intentions refers to being able to signal or direct behaviors in order to realize specific goals. By 9-10 months of age, a child initiates to use sounds, gestures, and other behaviors to communicate purposefully. Moreover, sharing intentions encompasses coordinating shared attention and affect.
2. **The emergence of symbol use:** before using words, children procure a repertoire of conventional sounds and gestures to express intentions. Generally by 6-9 months of age, the child is able to imitate familiar actions or sounds; such as grasping, banging, mouthing and dropping. By 12-14 months, the child is able to naturally imitate a growing collection variety of familiar actions or sounds at a later time that first observed. Thus the growing interaction of joint attention and symbol-use capabilities enables children to become active partners in the complex.

Rogers (1999) found that imitation has an intimate relationship with communication. Imitation skills are also related to children with autism language development and other development too. Compared with developmentally delayed and normally developing children; 20-month-old children with autism spectrum disorders were precisely damaged on some aspects of imitation (Charman et al 1997). National Institute on Deafness and other Communication Disorders (2020) on 13 April has informed that children with autism are often self-absorbed and seem to exist in an isolated world in which they have narrow ability to effectively communicate and interact with others. Autistic children may have struggle developing language skills and understanding what others say to them. They also often have difficulty connecting nonverbally, such as through hand gestures, eye contact, and facial expressions. The ability of children with autism to communicate and practice language depends on their intellectual and social development skills. Some children with autism may not be able to communicate via speech or language, and some may have very restricted speaking skills. Others may have rich vocabularies and be able to talk about specific subjects in great detail. Many may have problems with the meaning and rhythm of words, sentences and be unable to understand body language and the meanings of different vocal tones. Taken together, these complications affect the ability of children with autism to interact with others, particularly persons their own age.

## **4. Method**

### **4.1 Participants**

10 high-functioning Bengali-speaking autistic children were selected as participants for the present study. However, some specific aspects have been targeted in these representative participant elections- All the children selected as participants in the study must have been identified by specialist doctors. Furthermore, the limitations of social communication and Theory of mind (TOM) of children with autism are observed, so the age range of the participants has been limited between 8 years and 15 years consistent with the purpose of the study. It should be noted that the number of girls with autism is less than boys i.e. 1: 4



that is why the number of girls was 3 out of 10 participants in this experiment. Besides, we know that there are different types of autism, from among them, only high functioning autistic children have been selected as the participants of this study. Note that high-functioning autistic children are those children whose IQ is above 70 and who are relatively good at social interaction. In addition, all of them have verbal development of the language, that is, they are relatively good at using the language. Only children with ASD have been selected, if children with autism problems have other diseases or defects, such as hearing impairment, intellectual disability, they have not been selected as participants in this study. It should be noted that the names of the children participating in the analysis of the research results are pseudonyms made from the first letters of their real names as part of confidentiality protection (AAR, TTS, MF, MMR, TPK, AAWA, AAA, FSJ, RHA, and AJE) are used. The institutions from which the participants of this study were selected are as follows:

**\* From Proyash Specialized School, Dhaka Cantonment, Dhaka.**

#### **4.2 Stimulus**

In the current study, several stimuli have been selected which are used in the social context of situation in Bangladesh. 25 images related to the social context of Bangladesh were mainly selected as picture stimuli for experimenting in the present study. Each participant was shown the stimulus pictures in front of them sequentially through flashcards and asked to name 25 picture stimuli related to the social context of Bangladesh in the displayed picture. The pictures shown are: Classroom, Flag, Shaheed Minar, Magpie Robin, Water Lilly, Jackfruit, Marigold Flower, Tiger, Marriage, Children Park, House, Lalbagh Fort, Martyrs' Monument, Bus, Rickshaw, Airplane, Train, Mosque, Embrace, Cricket Game, Market, Shopping malls, Restaurants and Fountains etc. A colorful picture stimulus was taken so that the children were easily attracted to the pictures.

#### **4.3 Data Collection Process**

In this article, two methods of data collection- participant observation and interview have been adopted. By observing autistic children in different communicative contexts, an attempt has been made to understand the impairments they exhibit in context of social situations. It has been possible to gain some ideas by observing how these participating autistic children use social communication according to the context of situations and show skills and impairments in identifying picture stimuli used in the social environment as part of Bangladesh's social culture. However, it should be noted that not all the data required for this study were obtained from participant observation. That is, it has not been possible to find a holistic internal form of Bengali-speaking high-functioning autistic children who exhibit impairments in expressing social communication skills through observation. That is why his inner form has been explored through interviews. A uniform rule is followed for obtaining reliable information in interviews. In this case, each participating child was interviewed separately for data collection and the responses received were recorded and videotaped. Since all these children participating in the



present study are special children, the process of data collection from them was slightly different in nature. As a result two interviewers were not selected simultaneously. All data collected in this study were analyzed by conducting 1experiment. These are as follow-

**Experiment-1:** Picture stimulus identification skills used in social environment In order to accurately illustrate the data obtained by conducting experiment-1 on the participants, mainly 3 categories of variables are defined for analysis of stimuli.

- i. Correct identification: Correct identification was considered when the participants were able to correctly name the selected images shown in the present study with only specific naming word. However, one thing must be noted in this case is that simple but understandable pronunciation errors are taken as correct identification.
- ii. Partially correct identification: When interpreting a picture stimulus, participants gave the general name of the displayed stimulus rather than the specific name word or any information about the displayed picture stimulus that reasonably represented that stimulus, it was considered a partially correct identification. For example, the identification of Water lilly as flower; marigold as flower; Magpie robin as bird were identified as partially correct identifications. Moreover, in the case of the displayed picture stimuli, if the naming word was accompanied by a verb or another word, then it was considered as partially correct identification. Such as- Cricket as playing.
- iii. Wrong identifications: Wrong identifications were scored when participants misinterpreted assigned picture stimuli and did not provide any information or make any identifications about the presented stimuli.

Correct identifications obtained from participants are represented by tick mark (✓) and incorrect identifications by cross mark (X). On the other hand, no symbol was used for partial correct identification of the displayed picture stimulus, instead a third parenthesis [] was used.

Proper analysis of the data obtained at the field level helps a researcher to reach the intended objective in the research work. Some simple statistical methods were applied to analyze the data obtained from the participants to review the results of this research. The following data is presented and analyzed in the light of the responses received from the participants.



## 5. Result and Discussion

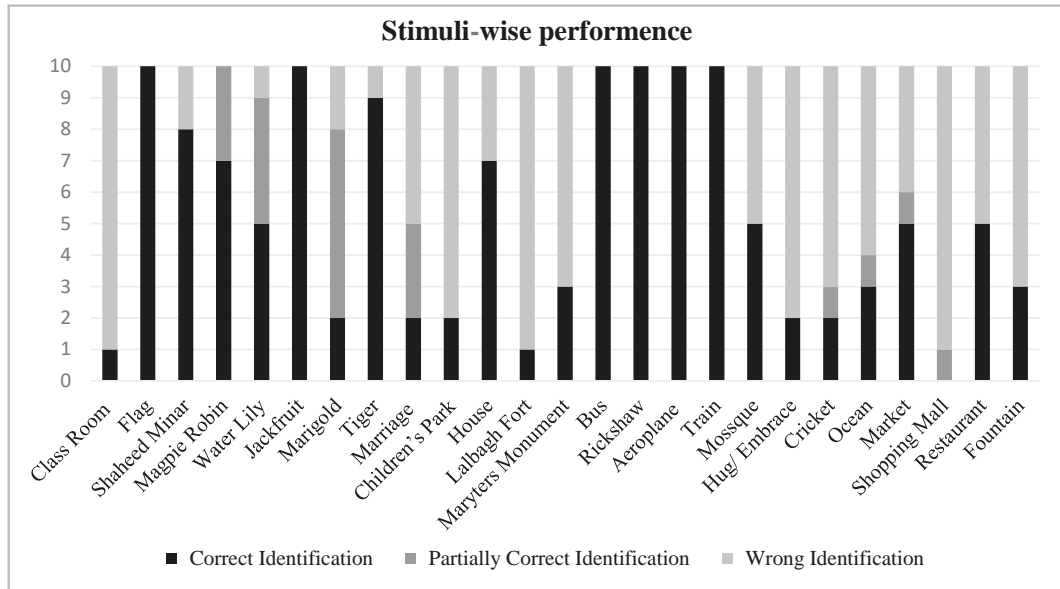
**Experiment-1:** Picture stimulus identification skills used in social environment.

**Table 5.1:** The presentation of picture stimulus used in social environment.

Picture Stimuli ↓	Participant's Name (in short)									
	AAR	TS	F	MR	PK	AWA	AA	SJ	HA	JE
Class Room	×	×	×	×	×	×	×	√	×	×
Flag	√	√	√	√	√	√	√	√	√	√
Shaheed Minar	√	√	√	√	×	√	×	√	√	√
Magpie Robin	[Bird]	√	√	[Bird]	√	√	[Bird]	√	√	√
Water lily	[Flower]	√	√	[Flower]	×	√	[Flower]	√	[Flower]	√
Jackfruit	√	√	√	√	√	√	√	√	√	√
Marigold	[Flower]	√	×	[Flower]	×	[Flower]	[Flower]	√	[Flower]	[Flower]
Tiger	√	√	√	√	√	√	×	√	√	√
Marriage	[Bride]	√	[Bride]	[Bride]	×	×	×	√		×
Children's park	×	√	×	√	×	×	×	×		
House	√	×	√	√	×	√	√	×	√	√
Lalbagh Fort	×	×	×	×	×	√	×	×	×	×
Martyrs' Monument	×	√	√	×	×	×	×	√	×	×
Bus	√	√	√	√	√	√	√	√	√	√
Rickshaw	√	√	√	√	√	√	√	√	√	√
Aero plane	√	√	√	√	√	√	√	√	√	√
Train	√	√	√	√	√	√	√	√	√	√
Mosque	×	√	√	×	×	×	×	√	√	√
Embrace	×	√	×	×	×	×	×	×	√	×
Cricket	×	√	×	×	×	×	×	√	[playing]	×
Ocean	×	√	×	×	×	×	×	√	√	[water]
Market	×	√	√	[vegetable]	×	×	×	√	√	√
Shopping Mall	×	×	×	×	×	[shop]	×	×	×	×
Restaurant	×	√	√	×	√	×	×	√	√	×
Fountain	√	×	√	×	×	×	×	×	×	√



Through this table, 25 pictures stimuli recognition skills of 10 Bengali-speaking autistics children related to social communication are presented. All participants showed 100% success in identifying the 6 stimuli: bus, plane, train, flag, jackfruit and rickshaw. Magpie Robin, water lily and marigold these three stimuli were identified as a basic level category that's why some participants recognized Magpie Robin as a bird, water lily and marigold as a flower. On the other hand, most of the autistic children showed failure in identification of classroom, lalbagh fort and embrace by naming word.



**Figure 5.1:** The measurement of stimuli-wise performance in social environment.

This figure represents participants' recognition skills across 3 measurement scales (I. correct identification, II. partially correct identification and III. Wrong identification) based on the 25 picture stimuli. That is, measures of participants' competence are presented according to the picture stimuli used in the social environment.

**Table 5.2:** The result in the following table showing the performance of the social stimuli identification.

Stimulus used in social environment	Correct Identification	Partially Correct Identification	Wrong Identification
Class Room	1	0	9
Flag	10	0	0
Shaheed Minar	8	0	2
Magpie Robin	7	3	0
Water Lily	5	4	1
Jackfruit	10	0	0



Marigold	2	6	2
Tiger	9	0	1
Marriage	2	3	5
Children's Park	2	0	8
House	7	0	3
Lalbagh Fort	1	0	9
Martyrs Monument	3	0	7
Bus	10	0	0
Rickshaw	10	0	0
Aero plane	10	0	0
Train	10	0	0
Mosque	5	0	5
Embrace	2	0	8
Cricket	2	1	7
Ocean	3	1	6
Market	5	1	4
Shopping Mall	0	1	9
Restaurant	5	0	5
Fountain	3	0	7
Total	132	20	98
Percentage	52.8%	8%	39.2%
Average	5.28		
Standard Dev.	3.44		
CoVar	0.6506 (65.06%)		

The table reveals a comprehensive analysis of participants' performance in identifying various social stimuli. Each stimulus is categorized by the number of correct, partially correct, and wrong identifications. Overall, correct identifications total 132, accounting for 52.8% of all responses. Partially correct identifications total 20, calculating 8% of responses, and wrong identifications total 98, and comprising 39.2% of responses. The average number of correct identifications per stimulus is 5.28, with a standard deviation of 3.44, showing variability in performance through stimuli. The coefficient of variation (CoVar) of 65.06% recommends a relatively high degree of dispersion in identification correctness across diverse stimuli. This analysis emphasizes both the strengths and weaknesses in participants' ability to identify various social stimuli.



Table 5.3: The result in the following table showing the performance of the participant's selected social stimuli identification.

Participant	Correct Identification	Partially Correct Identification	Wrong Identification
1. AAR	10	4	11
2. TTS	20	0	5
3. MF	16	1	8
4. MMR	10	5	10
5. TPK	9	0	16
6. AAWA	12	2	11
7. AAA	7	3	15
8. FSJ	19	0	6
9. RHA	15	3	7
10. AJE	14	2	9
Total	132	20	98
Percentage	52.8%	8%	39.2%
Average	13.2		
Standard Dev.	4.12		

The table delivers a comprehensive assessment of participant performance in recognizing selected social stimuli, important for valuing research quality. Participants' correct identifications total 132, representing 52.8% of responses, partially correct identifications total 20, contributing 8% of responses, and wrong identifications total 98, counting 39.2% of responses, highlighting areas where incorrect associations were prevailing. The average number of correct identifications per participant is 13.2, with a standard deviation of 4.12, indicating changeability in individual performance. The coefficient of variation (CoVar) of 31.2% recommends moderate dispersion in identification correctness through participants, suggesting consistency in performance levels. These metrics are important for measuring the reliability and validity of the identification task, providing insights into participant engagement and understanding of the stimuli.

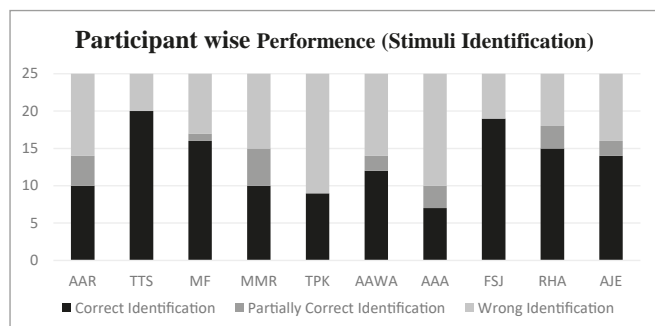


Figure 5.2: The measurement of participant-wise performance of stimuli identification in social environment.



This figure shows that participants TTS and FSJ have relatively good image stimulus recognition skills. On the other hand, TPK and AAA misidentified most of the stimuli due to their inability to identify the selected image stimuli. It is also apparent from the figure that in addition to correct identifications and wrong identifications, participants were able to make partially correct identifications of some stimuli.

Based on the information and data, the result of the present study are presented below:

- In the current study, Bengali-speaking high-functioning autistic children showed 52.8% correct identification proficiency for selected pictorial stimuli used in a social environment. They succeeded in correctly identifying only 132 picture stimuli out of a total of 250 picture stimuli presented 25 in front of each of them. About 39% of stimuli in social communication showed failure to recognize stimuli. In this case, it can be said that according to the previous research work, cognitive activities by (DO) socialization by (WATCH), means of making linguistic meaning by (LISTEN), reciprocal interaction or communication by (SAY) are collectively acquire although possible by typically developing child, it is not achievable in children with autism. As a result, their social and linguistic skills become limited (Quill, 2000).
- We categorize the abstract and concrete things around us from different perspective of categorization. There are thousands of categories or classifications of things around us such as animals, non-animals, fruits, flowers, fish, vehicles, birds, trees. Category effects may vary across countries and cultures. However, in all cases, this category or diagonal is mainly divided into three parts, such as a) super ordinate category, b) basic level category, and c) sub ordinate category.
- The point can be explained briefly. In our country, the name that is preferred by people when talking about the fruit is mango. This mango is actually the primary categorization. Mango, on the other hand, belongs to the fruit category. Then it can be said that the fruit is super ordinate category, when saying fruit, most of the people of our country imagine the face of mango in their mind which is the primary category and if we say Himsagar, Gopalbhog or Mohanbhog mango then it is subordinate category. According to this explanation, basic level category effects were observed for some participants in the identification of 3 picture stimuli used in social settings: water lily, marigold, and magpie robin bird. That is, water lily has identified as flowers and marigolds as flowers, and magpie robin has identified as bird. Moreover, the cricket stimuli has identified as playing. It really depends on the child's learning process. Normally developing children are also taught these primary or basic level categories first.
- All participating children showed 100% success on some of the stimuli used in the social environment. For example, all children correctly identified the 4 stimulus participants' bus, aero plane, rickshaw and train. The reason can be said that these concrete noun stimuli are seen by these children very much, they are able to easily identify them because they travel in these vehicles at various times as a means of movement in this urban life of mechanics.



- In many cases it was observed that the participants used English words instead of Bengali words in identifying the stimuli: such as magpie robin (দোয়েল পাখি) as bird, 'water lily' (শাপলা ফুল) as flower, 'tiger' (বাঘ) as Tiger. In this case, it can be said that they have been taught these stimuli in English at home or school. Moreover, while doing the current research, I found out that the participant MMR. English language is more proficient than Bengali and hence most of its identifications are English words. Usage trends are noted.
- The effect of similarity or visibility has been observed in the identification of stimuli used in social environments, such as 'Lalbagh Fort' as a 'mosque', ocean as water or river water, 'shopping mall' as Bashundhara and some as Jamuna Future Park. As a researcher, it seems to me that the external appearance of Lalbagh Fort looks like a mosque, that's why they called Lalabagh Fort a mosque. The reason why the shopping mall is called Jamuna Future Park or Bashundhara is because the participants with their parents may go to these shopping malls. Moreover, from the current research, shopping for some participants means Jamuna Future Park. These special children usually do not like a change in routine. So always go shopping at certain places with parents or someone else. As a result, after seeing the picture of the shopping mall, he said the answer by heart.
- The present study did not observe any phonological deficits in the responses obtained by Bengali-speaking high-functioning autistic children in identifying picture stimuli used in a social environment. However, the participant FSJ called martyrs monument (স্মৃতিসৌধ) as smritichoto (স্মৃতিছোট). In this case, the researcher in the present study seems to have omitted the compound intonation sign of the vowel sound ou (ঔ) for the spontaneity of pronunciation.
- Participating AAO called martyrs monument as Bangladesh, because we often say Bangladesh when we see a picture of the flag of Bangladesh, or we often say Bangladesh when we see various pictures related to Bangladesh's socio-culture. That is, the only country that stands tall in the world for the flag, memorial or language of Bangladesh, even when we see the picture of Shaheed Minar of Bangladesh, many times we say it is Bangladesh because we hold it in our perception.
- The participant MF called Lalbagh Fort as Shaheed Minar, and participant AJE called martyrs monument as Shaheed Minar. As a new researcher, I believe that stimulus identification skills used in social environments depend on repeated exposure and learning. Usually, we first teach children about the various places or topics of our society and culture through still pictures in books or by showing them on television. As a result, they may not remember it for long. This is also how learning begins in autistic children. This often confuses one stimulus with another stimulus picture. Lack of direct experience has also been observed in the present study, resulting in the terming Lalbagh Fort and martyrs monument as Shaheed Minar.



## 6. Conclusion

Finally, the above discussion presents a picture of the nature of the social communication skills of Bengali-speaking high-functioning autistic children with the help of data collected at the field level. Worldwide research on autism has shown that children with ASD unveil noteworthy deficits in many areas of socialization. The present study also demonstrated that Bengali-speaking high-functioning atypical children with autism have severe disabilities or deficits in various aspects related to stimulus identification skills used in social environment, social communication and current social situation, similar to children with autism in other countries of the world. While normally developing children learn to gradually enrich themselves in the holistic process of understanding their surroundings with innate abilities as they grow older, autistic children lag behind for various reasons. The reason can be said that autistic children are usually immersed in their own world and mental state deficits are one of their characteristics. In addition, due to the weak cognitive ability of autistic children, their experiences do not last long.

Moreover, many parents keep these atypical children away from various social activities as they face social negativity. The range of these special children becomes smaller and smaller. Parents' anxiety increases, gradually alienating their special child from society.

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## Biography

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## **Online Assessment: Tertiary Level Students' and Teachers' Perception, Strategies Used, and Consideration Needed to be Taken in the Context of Bangladesh**

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### **Abstract**

Online education creates scope for learners to attain education without being physically present in institutions. Assessment being an integral part of the teaching and learning process becomes challenging in online education. The study focuses on both quantitative and qualitative aspects of the perception of online assessment based on diverse socio-economic contexts. The study also focuses on the strategies that have already been used for online education along with strategies and considerations that need to be taken to reduce the gap in both public and private universities in Bangladesh. Two major educational stakeholders such as teachers and students are selected as the population. Through convenience and purposive sampling techniques, 68 students and 9 teachers from both public and private universities were consulted for data collection. For quantitative data, descriptive and inferential statistical analysis was used and for qualitative data, thematic analysis was used. Results of the study show that pedagogy, validity, reliability, affective factors, practicality, and security are not fully achieved and it is difficult to ensure, the validity, reliability, and affective factors of online assessment. Apart from existing ones, additional considerations should be taken for pedagogy, practicality, and security of online assessments. The study proposes a blended approach for a valid, effective, and reliable online assessment process. To reduce the gap and minimize the challenges in our social context, improvised assessment strategies and considerations needed to be taken to improve the assessment process and ensure effective learning.

**Keywords:** online education, assessment, strategies, challenges, blended approach.

### **1. Introduction**

Assessment is an important part of the teaching-learning process. According to Huba and Freed, (2000), "Assessment is the process of gathering and discussing information from multiple and diverse sources to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning". Assessment helps to explore the level of understanding of the learners in a particular area. During the COVID-19 pandemic, most of the educational institutes conducted teaching-learning activities through online platforms following online assessment. However, the burning question was to make the online assessment suitable for the students who are dealing with several challenges like economic, psychological, physiological, technical, & infrastructural, etc. issues.

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## **1.1 Research problem**

Online education was increasingly used in many public and private universities due to the pandemic. However, Bangladesh Open University also provided distance learning at the tertiary level of education over many years. According to the University Grants Commission (UGC), Bangladesh is unprepared for online assessment due to poor internet, insufficient awareness, participation, collaboration, and fairness (Rahman et al., 2022). Moreover, lack of suitable software, trainings, mentoring, smartphones, high internet rates were found as challenges (Ullah et al., 2022). These challenges made the private university teachers dissatisfied with online education (Ullah et al., 2022) and online assessment as it was ineffective (Rahman et al., 2022). Most of the literature (Rahman et al., 2022; Ullah et al., 2022) focused on the practices and challenges of online assessment whereas this study emphasized the perception of the students and teachers on online assessment as well the strategies being used and considerations to take for ensuring effective online assessment.

## **1.2 Research question**

This study was based on the following research questions.

1. What are the students' and teachers' perceptions of the online assessment in terms of pedagogy, validity, reliability, affective factors, practicality, and security?
2. What are students' and teachers' perceptions according to the socio-economic context, gender, and subject area?
3. What strategies are being used for online assessment?
4. What strategies and considerations are needed for effective online assessment at the tertiary level in Bangladesh?

## **2. Online education**

Online education, also known as online learning, refers to a method through which students acquire an internationally recognized certification without the need to attend physical classes on campus (University of Edinburgh, 2018). A significant benefit of online education is accessibility, eliminating geographical barriers that are inevitable in physical classes. However, e-learning also presents unique challenges such as a lack of interaction, technological infrastructure, training, monitoring, high package internet, communication, and collaboration between students and teachers (Rahman et al., 2022; Ullah et al., 2022).

### **2.1 Online assessment**

Assessment is linked with learning objective and teaching learning strategies. To understand students' learning, assessment plays a vital part. For this reason, it is important that learning objectives are well connected with the online assessment strategies (Thede & Sewell, 2009). According to a study (Joshi et al., 2020) online assessment can provide rich, comprehensive, formative feedback to scaffold the learning by supporting learner to self-evaluate and achieve their learning outcome which prepares them for summative assessment. According to Schreyer Institute Self-Paced Module (2022), online assessment is conducted to assess the



following aspects of students learning, such as, interactivity, collaborative learning and collective construction of knowledge. From an online assessment platform MeritTrac, it is found that online assessment is used to evaluate an individual's abilities, behaviors, and characteristics over the internet using available web technologies to test, to select, to identify, and to provide clues to the test takers. Assessment can focus on individual learners or entire groups, such as a whole class, an institution, or a specific program to enhance learning (Sewell et al., 2010). In the educational context, assessment is a systematic process that documents and utilizes empirical data related to knowledge, skills, attitudes, and beliefs.

## **2.2 Medium of online assessment**

Online assessment has to be effective to ensure learning which can be conducted in different ways. In several studies (Arend, 2007; Swan, 2001; Gaytan & McEwen, 2007), online discussion, exams, written assignments, experimental assignments, problem assignments, quizzes, journals, projects, presentations, self-assessments, and peer evaluations. were used for online assessment. Among these, discussions, assignments, tests, and quizzes are widely used and effective.

## **2.3 Validity and reliability of online assessment**

Validity and reliability are fundamental concepts in assessment. Validity pertains to how well a test measure what it intends to measure, while reliability indicates the consistency and trustworthiness of scores obtained from that test. A valid conclusion cannot be drawn from a test score unless the test is reliable. However, even when a test is reliable, it may only sometimes be valid. Therefore, when selecting a test, it's crucial to ensure both reliability and validity.

Several factors pose potential threats to the validity of online assessment methods. These include modality effects and students' computer-related attitudes, such as computer anxiety and engagement which can impact performance in computerized testing situations (Beckers, Rikers, & Schmidt, 2006; Hewson, 2012).

## **2.4 Affective factors**

Affective factors play a pivotal role in the perception and analysis of online assessments, particularly concerning students' and teachers' readiness for electronic examinations. When students are inadequately prepared for online assessments, it can lead to fear and anxiety. However, equipping students with proper institutional support, guidance, and technological knowledge, and addressing technical issues can mitigate stress and allow for a more accurate assessment of students' actual knowledge (Jereb et al., 2005; Shraim, 2019).

Research findings diverge on the impact of online assessment anxiety. James (2013) suggest that online assessments reduce anxiety and examination stress. Jareb and Bernik (2005) found that students prefer online-based assessments over traditional methods due to their comfort with digital tools as typing is quicker than writing (James, 2013).



However, prolonged screen time during online exams can hinder concentration, prompting British Standard 23988 to recommend breaks during lengthy scheduled examinations. Furthermore, Shraim (2019) highlights concentration issues in online math assessments where students must simultaneously use both computers and paper and pencil which leads students to lose marks for the process and incorrect answers.

## **2.5 Security**

Online assessments offer enhanced security and minimize privacy concerns. Over time, the initial distraction and nervousness associated with webcam surveillance tend to dissipate once students engage in actual examinations (James, 2013). Additionally, studies by Shraim (2019), Jereb and Bernik (2005) affirm that online test materials and results are more secure.

However, robust encrypted data security remains essential. Safeguarding question banks, login credentials, navigation, exam access, and responses requires meticulous attention. While Jereb and Bernik (2005) argue that cheating is less likely in online examinations, James (2013) suggests focusing on diverse pedagogical approaches rather than solely relying on a foolproof automated authentication system to prevent cheating. Shraim's (2018) research aligns with this, highlighting students' use of various mediums (smartwatches, wireless Bluetooth, mobile hotspots) to cheat, share answers, and copy-paste information from different devices. Students favor randomized questions from question banks resonates with Shraim (2019), who observed that randomized questions create a new order, making cheating less feasible compared to conventional paper-based exams.

## **3. Research methodology**

A mixed method research is conducted to use both quantitative and qualitative data to understand the research problem and get answers to the research questions as suggested by Creswell and Creswell (2018). Thus, a better understanding from both objective and subjective perspectives can be developed than either method by itself.

### **3.1 Data source**

Data sources of this study are given in the following:

1. Tertiary level students (public and private university, public and private college where bachelor programs are available)
2. Tertiary level teachers (public and private university, public and private college where bachelor programs are available)



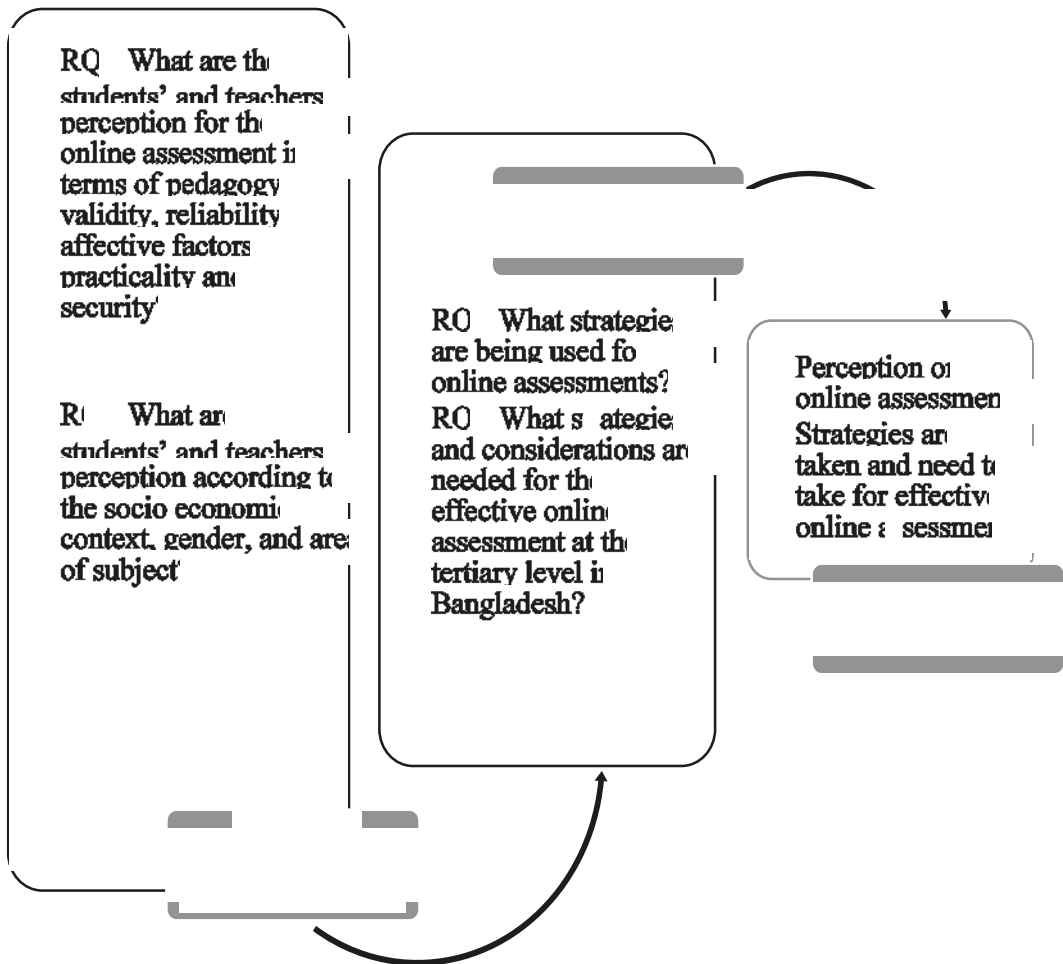


Figure 1: Research Design

### 3.2 Sample and sampling technique of the study

In this study, students and teachers were selected from different universities through convenience sampling based on access, availability (Johnson & Christensen, 2014) and purposive sampling based on their response and expertise (Creswell & Creswell, 2018). Online survey forms were disseminated on the social media platform where 68 students and 9 teachers responded. Upon the responses, it was seen that only 37 students and 5 teachers had the experience of online assessment. Therefore, further interviews were conducted for 13 students and 5 teachers purposively based on their experience of online assessment.



**Table 1.** Research Matrix

Research Question	Respondents	Sampling Technique	Type of Data	Sample Size	Instruments
RQ 1	Students and teachers	Convenience Sampling	Quantitative Data	Teacher 9 Student 68	Survey questionnaire
RQ 2		Convenience Sampling			Survey questionnaire
RQ 3		Purposive Sampling	Qualitative Data	Teacher 5 Student 13	Interview
RQ 4		Purposive Sampling			Survey questionnaire and interview

### 3.3 Instruments

To collect data relevant to the research questions, two sets of different tools were used. The tools were (a) a survey questionnaire with 4 point Likert scale for measuring students' and teachers' perceptions of online assessment along with demographic data and (b) an interview schedule for collecting supporting data to understand the strategy being used and the consideration needed for effective online assessment.

### 3.4 Data analysis

The quantitative data from the survey questionnaire were analyzed using descriptive statistics (frequency, percentages and mean) and inferential statistics (independent t test) through statistical software SPSS 25. Later, the qualitative data from the interviews were analyzed using thematic data analysis techniques (Rossman & Rallis, 2012). Interviews were recorded and transcribed, then categories and codes were given to generate themes for the study. Through data triangulation, peer debriefing and member checking the credibility was ensured (Marriam, 2009).

### 3.5 Ethical consideration

During the survey and interview conduction, the researcher sought permission from the responders to collect data. A brief description of the purpose of the research, data collection procedure, security and confidentiality of the information was provided to the students and teachers to ensure their privacy and security (Creswell & Creswell, 2018). Moreover, opportunity was given to them to withdraw themselves at any point.

## 4. Result of the study

In this study, the perception of the participant towards online assessment is presented based on some indicator such as pedagogy, validity, reliability, affective factors, practicality and



security from 68 students among which 54.4% (37) students had the experience of online assessment and 45.6% (31) students did not have the experience. Similarly, among the 9 teachers, 55.6% (5) had the experience of conducting online assessment and 44.4% (4) teachers did not have. Based on gender, for students, 45.6% (31) were female and 54.4% (37) were male; and for teachers, 66.7% (6) were female and 33.3% (3) were male. In regards of types of university, 63.2% (43) students and 66.7% (6) teachers were from public universities; and 36.8% (25) students and 33.3% (3) teachers were from private universities. From Table 2 cross tabulation of type of university and online assessment conduction, it was seen that most of private universities were conducting online classes compare to the public ones.

**Table 2.** Cross tabulation between type of university and online assessment

Type of University / Institution	Is your institution taking online exams?		Total
	Yes	No	
Public University / College (Hons / Masters)	14	29	43
Private University / College (Hons / Masters)	23	2	25
Total	37	31	68

## 4.1 Pedagogy

### 4.1.1 For students

Most of the students agreed on the pedagogical aspect of online assessment as immediate feedback helps deeper understanding (55.9%) and enables them to take new learning approach (69.1%).

**Table 3.** Students' response on pedagogical aspect of online assessment

Statements for Pedagogy	p/f	SD	D	A	SA	Mean
a. Immediate feedback in online exams helps learners to get a deeper understanding of the subject	%	4.4%	20.6%	55.9%	19.1%	2.73
	n	3	14	38	13	
b. Using technology in online exams enables students to take a new online learning approach	%	4.4%	10.3%	69.1%	16.2%	
	n	3	7	47	11	
c. Online exams facilitate a more adaptive learning approach than paper-based ones	%	23.5%	33.8%	30.9%	11.8%	
	n	16	23	21	8	



However, 33.8% students disagreed that online assessment is more adaptive than paper based ones. Overall, the mean score was found 2.73 that implied the online assessment is mostly helpful for ensuring pedagogical aspect. (Table 3)

While comparing the mean score of pedagogy aspect of online assessment, no significance ( $p = .434$ ) was found through independent t test based on students' experience of online exam.

#### 4.1.2 For Teachers

Most of the teachers strongly agreed on the pedagogical aspect of online assessment as immediate feedback helps deeper understanding (55.6%) and technology enables them to take new learning approach (66.7%).

**Table 4.** Teachers' response on pedagogical aspect of online assessment

Statements for Pedagogy	p/f	SD	D	A	SA	Mean
a. Immediate feedback in online exams helps learners to get a deeper understanding of the subject	%	0	0	44.4%	55.6%	3.48
	n	0	0	4	5	
b. Using technology in online exams enables students to take a new online learning approach	%	0	0	33.3%	66.7%	
	n	0	0	3	6	
c. Online exams facilitate a more adaptive learning approach than paper-based ones	%	0	11.1%	55.6%	33.3%	
	n	0	1	5	3	

Moreover, 55.6% teachers agreed and only 11.1% teachers disagreed that online assessment is more adaptive than paper based ones. Overall, the mean score was found 3.48 that implied the online assessment is very helpful for ensuring pedagogical aspect. (Table 4)

## 4.2 Validity

#### 4.2.1 For students

About half of the students (45.6%) strongly disagreed that online exams are appropriate for all subject area. Similarly, they disagreed that online exams are appropriate to test the learners' level of knowledge (44.1%) and it is authentic than traditional methods (39.7%).

**Table 5.** Students' response on validity aspect of online assessment

Statements for Validity	p/f	SD	D	A	SA	Mean
a. Online exams are appropriate for all subject area	%	45.6%	36.8%	14.7%	2.9%	2.08
	n	31	25	10	2	
b. Online exams are appropriate to test learners' level of knowledge	%	14.7%	44.1%	35.3%	5.9%	
	n	10	30	24	4	
c. Online exams facilitate more authentic assessment than traditional methods through the integration of multimedia, simulations, etc	%	23.5%	39.7%	32.4%	4.4%	
	n	16	27	22	3	



However, less than 20% students agreed with these statements. Overall, the perception is poor as the overall mean is close to 2 which depicted the students disagreed that online assessment were valid. (Table 5)

While comparing the mean score of validity of online assessment, significance ( $p = .014$ ,  $p < .05$ ) test was found through independent t test based on students' experience of online exam. There is difference in the mean scores of perceptions for validity of online assessment between students who had online assessment experience and those who did not have.

#### 4.2.2 For teachers

Equal number of teachers (33.3%) strongly disagreed and agreed that online exams are appropriate for all subject area and it is authentic than traditional methods.

**Table 6.** Teachers' response on validity aspect of online assessment

Statements for Validity	p/f	SD	D	A	SA	Mean
a. Online exams are appropriate for all subject area	%	33.3%	11.1%	33.3%	22.2%	2.44
	n	3	1	3	2	
b. Online exams are appropriate to test learners' level of knowledge	%	11.1%	33.3%	44.4%	11.1%	
	n	1	3	4	1	
c. Online exams facilitate more authentic assessment than traditional methods through the integration of multimedia, simulations, etc	%	22.2%	33.3%	33.3%	11.1%	

However, they agreed that online exams are appropriate to test the learners' level of knowledge (44.4%). Overall, the perception is on average as the overall mean is close to 2.5 which depicted, teachers have neutral perception on online assessment being valid. (Table 6)

### 4.3 Reliability

#### 4.3.1 For students

Almost half of the students (44.1%) have agreed that marking online exams automatically is more accurate than paper-based marking.

**Table 7.** Students' response on reliability aspect of online assessment

Statements for Reliability	p/f	SD	D	A	SA	Mean
a. Marking online exams automatically is more accurate than paper-based marking	%	16.2%	27.9%	44.1%	11.8%	2.29
	n	11	19	30	8	
b. Online exams are fairer than paper-based exams	%	23.5%	44.1%	30.9%	1.5%	
	n	16	30	21	1	
c. The technology used in online exams is reliable	%	20.6%	36.8%	38.2%	4.4%	
	n	14	25	26	3	



However, same number of students (30) disagreed that online exam are fairer than paper-based exams. Moreover, quite equal number of students disagreed (25) and agreed (26) that online exams are reliable. Overall, students' perception was between disagreement and agreement range that online assessment is reliable. (Table 7)

While comparing the mean score of reliability of online assessment, no significance ( $p = .728$ ) was found through independent t test based on students' experience of online exam.

#### 4.3.2 For teachers

Around half of the teachers (44.1%) have agreed that marking online exams automatically is more accurate than paper-based marking.

**Table 8.** Teachers' response on reliability aspect of online assessment

Statements for Reliability	p/f	SD	D	A	SA	Mean
a. Marking online exams automatically is more accurate than paper-based marking	%	11.1%	11.1%	44.4%	33.3%	3.00
	n	1	1	4	3	
b. Online exams are fairer than paper-based exams	%	22.2%	55.6%	22.2%	0	
	n	2	5	2		
c. The technology used in online exams is reliable	%	11.1%	44.4%	44.4%	0	
	n	1	4	4	0	

However, more than half of the teachers (5 out of 9) disagreed that online exam are fairer than paper-based exams. In addition to that, equal number of teachers disagreed (44.4%) and agreed (44.4%) that online exams are reliable. Overall, teachers' mean score of reliability of online assessment was found to be positive as  $M = 3$  referred to the agreement of the statements. (Table 8)

#### 4.4 Affective factors

##### 4.4.1 For students

Variation among the statements of affective factors were found. Although 36.8% students agreed that online assessment reduce stress and anxiety due to automatic correct marking than paper based marking, 33.8% students disagreed and 23.5% strongly disagreed with the statement.

**Table 9.** Students' response on affective factors of online assessment

Statements for Affective Factors	p/f	SD	D	A	SA	Mean
a. Online examinations reduce stress and exam anxiety marking online exams automatically is more accurate than paper-based marking	%	23.5%	33.8%	36.8%	5.9%	2.25
	n	16	23	25	4	
b. Using online exams allows learners to focus and concentrate more on the questions	%	19.1%	41.2%	38.2%	1.5%	
	n	13	28	26	1	
c. Learners feel more comfortable doing an online exam than a paper based one	%	19.1%	33.8%	44.1%	2.9%	
	n	13	23	30	2	



Similarly, 41.2% disagreed and 38.2% agreed that online exam allows learners to focus and concentrate on questions. Moreover, 44.1% students agreed that learners feel comfortable on online exam than a paper based exam. Overall, students were tending towards agreement that affective factors were present in online assessment. (Table 9)

While comparing the mean score of affective factor of online assessment, no significance ( $p = .556$ ) was found through independent t test based on students' experience of online exam.

#### 4.4.2 For teachers

In comparison with students, teachers' overall mean score was found 1.8 which showed disagreement that online assessment are able to manage affective factors. 44.4% teachers disagreed that online exam reduce stress and marking is accurate than paper based marking.

**Table 10.** Teachers' response on affective factors of online assessment

Statements for Affective Factors	p/f	SD	D	A	SA	Mean
a. Online examinations reduce stress and exam anxiety marking online exams automatically is more accurate than paper-based marking	%	33.3%	44.4%	22.2%	0	1.8
	n	3	4	2		
b. Using online exams allows learners to focus and concentrate more on the questions	%	33.3%	33.3%	33.3%	0	
	n	3	3	3		
c. Learners feel more comfortable doing an online exam than a paper based one	%	22.2%	22.2%	22.2%	11.1%	
	n	2	2	2	1	

However, 33.3% teachers strongly disagreed, disagreed and agreed that online exams allows learner to focus and concentrate. Similarly 22.2% teachers strongly disagreed, disagreed and agreed that learners feel comfortable for online exam. (Table 10)

#### 4.5 Practicality

##### 4.5.1 For students

Less than half of the students (45.6%) agreed with the fact that online exams are more efficient in terms of time, effort, and money spent. Most of the students (60.3%) agreed that reusable MCQ allows easy storage and review.

**Table 11.** Students' response on practicality of online assessment

Statements for Practicality	p/f	SD	D	A	SA	Mean
a. Online exams are more efficient in terms of time, effort and money spent	%	14.7%	33.8%	45.6%	5.9%	2.53
	n	10	23	31	4	
b. Creating a question bank of reusable MCQs allows easy storage and review	%	7.4%	20.6%	60.3%	11.8%	
	n	5	14	41	8	
c. Online exams are more accessible than paper-based exams	%	13.2%	39.7%	39.7%	7.4%	
	n	9	27	27	5	



However, 39.7% students disagreed and agreed that online exam are more accessible than paper based exam. Overall, students are mostly agreeing the practicality of online assessment as the mean score is 2.53. (Table 11)

While comparing the mean score of practicality of online assessment, no significance ( $p = .803$ ) was found through independent t test based on students' experience of online assessment.

#### 4.5.2 For teachers

About one third of the teachers (33.3%) agreed with the fact that online exams are more efficient in terms of time, effort, and money spent. Most of the teachers (66.7%) agreed that reusable MCQ allows easy storage and review.

**Table 12.** Teachers' response on practicality of online assessment

Statements for Practicality	p/f	SD	D	A	SA	Mean
a. Online exams are more efficient in terms of time, effort and money spent	%	22.2%	22.2%	33.3%	22.2%	2.52
	n	2	2	3	2	
b. Creating a question bank of reusable MCQs allows easy storage and review	%	0	22.2%	66.7%	11.1%	
	n	0	2	6	1	
c. Online exams are more accessible than paper-based exams	%	22.2%	44.4%	33.3%	0	
	n	2	4	3	0	

However, 44.4% teachers disagreed that online exam are more accessible than paper based exam. Overall, teachers are mostly agreeing the practicality of online assessment as the mean score is 2.52. (Table 12)

#### 4.6 Security

##### 4.6.1 For students

Around half of the students agreed with the fact that test materials and results of online exams are more secure than traditional methods (51.5%), technology used in online exams is sufficiently effective in dealing with cheating and plagiarism (41.2%) and randomized questions from a bank means that cheating during online exams is less likely than for paper-based ones (45.6%).

**Table 13.** Students' response on security of online assessment

Statements for Security	p/f	SD	D	A	SA	Mean
a. Test materials and results of online exams are more secure than traditional methods	%	14.7%	25%	51.5%	8.8%	2.44
	n	10	17	35	6	
b. The technology used in online exams is sufficiently effective in dealing with cheating and plagiarism	%	17.6%	35.3%	41.2%	5.9%	
	n	12	24	28	4	
c. Using randomized questions from a bank means that cheating during online exams is less likely than for paper-based ones	%	10.3%	41.2%	45.6%	2.9%	
	n	7	28	31	2	



Overall, students were neither disagreed nor agreed with security of online assessment as the mean score was 2.44. (Table 13)

While comparing the mean score of practicality of online assessment, no significance ( $p = .803$ ) was found through independent t test based on students' experience of online assessment

#### 4.6.2 For teachers

About one third of the teachers (33.3%) agreed and disagreed with test materials and results of online exams are more secure than traditional methods.

**Table 14.** Teachers' response on security of online assessment

Statements for Security	p/f	SD	D	A	SA	Mean
a. Test materials and results of online exams are more secure than traditional methods	%	11.1%	33.3%	33.3%	22.2%	2.48
	n	1	2	3	2	
b. The technology used in online exams is sufficiently effective in dealing with cheating and plagiarism	%	11.1%	44.4%	22.2%	22.2%	
		1	4	2	2	
c. Using randomized questions from a bank means that cheating during online exams is less likely than for paper-based ones	%	33.3%	11.1%	55.6%	0%	

However, 44.4% teachers disagreed that technology used in online exams is sufficiently effective in dealing with cheating and plagiarism (41.2%). More than half of the teachers (55.6%) agreed that randomized questions from a bank means that cheating during online exams is less likely than for paper-based ones (45.6%). Overall, teachers were found neutral for security of online assessment as the mean score was 2.48. (Table 14)

### 4.7 Learners' and teachers' perception according to the socio-economic context, gender, and subject area

#### 4.7.1 Online assessment from socio economic context

Most of the students (63.2%) and teachers (77.8%) were join to take online classes using Wifi followed by mobile data (23.5% students and 11.1% teachers) and broadband (13.2% students and 11.1% teachers). Additionally, majority of the students (66.2%) and all of the teachers agreed with suitability of internet facilities in those respective areas where they reside in. According to 57% students and 66.6% teachers, the internet facilities were not costly for them.

#### 4.7.2 Gender issues for online assessment

Most of the students (86.7%) and teachers (88.9%) perceived that online assessment is not biased on gender. In addition to the survey opinions, when independent t-test was conducted on online assessment based on gender, no significance was found between the mean scores of both groups.



#### **4.7.3 Suitability of online assessment for subject areas**

A wide range of departments or subjects were covered according to the responses which were the followings, education, medical, business, engineering, science, social science, arts and others. The variety of discipline shaped the understanding of the appropriateness of online assessment in these departments/subjects. Just above 50% students (35) agreed that their respective subject field is suitable for online assessment. The reasons for finding online assessment not suitable are, science related subjects require practical experiences of using lab, business related field requires field visit to organizations, medical field require practical experience on patient, lack of interaction, and misinterpretation of plagiarism reports of the assignments and unavailability of studios, resources etc. According to the students, these issues were not seen in the paper pencil, project, demonstration, and lab based assessments. On the other hand, most of the teachers (88.9%) agreed the suitability of online assessment for these subjects. However, a few of the teachers agreed that hands on activity and practical assessments in some of the courses are not possible on online. Therefore, online assessment is not suitable for all subject areas as responded by 73.5% students and 66.7% teachers.

#### **4.8 Strategies used for online assessment**

The current strategies that are being used to conduct online assessments; an interview was taken of the participant (teachers & students). They were asked about the current strategies they are using to assess the learning of the students. The strategies of current online assessment are following:

**Assignment:** Assignment is being used to the students to assess them. It is a more reliable medium to assess the learning of the students. Both the teachers and the students said that they have usually been given assignments as a form of assessment. T3 said that,

“I usually give the students assignments to assess them. It helps them to explain their knowledge and understanding. They can use a different source such as internet books or any other platform to fulfill the task.”

**MCQ exam:** MCQ based questions are being used to assess the students' learning in the online exam. According to them, the MCQ test allows them to give instant feedback so that the students can understand their gaps. S1 said that,

“We are assessed through MCQ based questions using a platform like a google form. Usually, this type of test was conducted for our quiz and class test. After completing the exam, we can get the result almost instantly. That helps me to identify my lacking in the particular subject area”.

**Presentation:** Presentation is another form of assessment generally being used for assessing the students online. Often the students are given presentations individually or in a group on a different topic. They have to present using the online platform. T2 said that’



“I prefer to give the students a presentation to assess them online. In this case, they can use whatever data source they want. They have presented this in front of the class using online platforms. I find it more reliable as they have to present their understanding. So, there is a minimal chance of cheating during this process.”

**Oral test/ Viva:** Oral tests or viva are also being used for assessing the students. Both the teachers and students said that they go through viva for the assessment. According to T5,

“I use viva as a form of assessment for the learners. I find it more reliable as the students get the opportunity to express themselves. There is a chance for me to challenge their understanding, and I think there is no chance to cheat during the viva for the students.”

#### **4.9 Consideration for assessment strategies**

##### **4.9.1 Students perspective**

13 students from 9 different tertiary educational background shared some important insights from the interview session such as-

**Online Viva:** According to most of the students, the online viva is more reliable than any other strategy. One student can easily cheat in written exams, MCQ exams, while online viva can be a good strategy to ensure reliability in online assessment. Participant S7 said that,

“Online viva should be the best way to assess a student. Even if it is conducted online, there are very few chances for a student to cheat during the assessment process.”

According to S2, viva is a more convenient way for students for online assessments. He said that,

“One-to-one personal interview or group interview can be a good assessment strategy in online assessment using Zoom or any online based application.”

**Blended approach:** One of the participants S1 replied that,

“Blended approach should be taken. In my opinion, no kind of biases can be seen in a blended approach & a blended approach can make the process more effective.”

The blended approach refers to a combination of both online and offline/traditional assessments for the assessment of the students.

**Presentation:** Presentation by sharing slides online or sharing MCQ online can be a good strategy. Participant S5 agreed with it. Participant S6 also replied that,

“assignment or give any presentation on any topic that would be a better way to do an online assessment. Here we get the opportunity to express our understanding, which will be more comfortable for us than writing on laptops.”

**Assignment:** Assignment can be a good strategy in online assessment. Participant S9 replied that a research-based assignment, which consists of creative questions, is the best way to assess students over online sessions.



**Email:** Email can be a good medium for online assessment. Participant S8 said that, “Teachers should give students his/her email address or any link where students can submit his/her answer script of a given question regarding the class test.”

**Time allocation:** Time allocation is very important in online assessment. Sometimes it takes more time to upload the picture of the answer sheet due to network problems & it takes more time to convert the written answer sheet in PDF format due to slow configuration of laptop, electronic devices. So, in online assessment teachers should increase allocation time.

#### 4.9.2 Teachers’ perspective

According to the teachers, the strategies and consideration needed to be taken to ensure effective online assessment are following:

**Framework for online assessment:** According to the teachers there is no specific framework for the online assessment. It basically depends on the teachers how they want to take their classes and assess the students. A proper framework for the assessing online will be helpful for the learners as well as the teachers to ensure online assessment. According to T3,

“There is no specific framework for us about how to assess the students over online platforms. It varies from teacher to teacher. A proper guideline can be helpful for us to ensure proper assessment of the learners”

**Introduce blended assessment approach:** According to most of the teachers online assessment cannot be replaced with traditional assessment system. It can be important for overall assessment. A blended assessment approach of both online and offline assessment should be introduced to ensure effective assessment of the students.

**Introducing open book exam:** Most of the participant teachers believe that there is a significant chance of cheating during the online classes. According to teachers, open book exams are being introduced and the questions are made on this basis. The opportunity to cheat in the online assessment will be reduced.

**Providing financial aid:** Students in tertiary level usually comes from different socio-economic backgrounds. Often they don’t have proper ICT equipment or internet facilities to take part in the online assessment. Financial aid such as scholarships or student loans can be given to the students' from low socio-economic background. T4 said,

“We have taken an initiative to help the low socio-economic background students financially to buy ICT equipment to take part in the online classes. Though it is a lengthy process, we will not be able to help every student. But a proper initiative like that can help the students to access the online classes.”

**Ensure internet facilities:** Proper internet facilities are a must to ensure participation in online class as well as online assessment. Without ensuring proper internet facilities online assessment cannot be effective. Bad internet connection can hamper the participation of the students in the online exams. T3 said,



“Most of the students at my university are from diversified areas. In some cases, they don’t have the proper internet facilities to attend the class or take part in the online assessment due to bad internet connection in their area. We have to ensure proper high speed net facilities to ensure effective assessment for the students.”

**Collaboration with mobile network operators:** Collaboration between the network operator and the universities can be helpful for the students. A large number of students take part in online classes by using mobile data, which can be costly for the students. If a collaboration can be done with the mobile network operators, it can be helpful and more cost-effective for the students.

## **5. Discussion**

One of the major findings of this study was that both student and teacher perceive that pedagogical aspect such as getting immediate feedback, introduction to new learning approaches are more adaptive in online assessment than paper pencil test. However, there is certain concern about the validity, reliability and affective factors of online based assessment systems as the mean score is around 2 in most cases which refers those students and teachers find it hardly valid, reliable, stress and anxiety free, and comfortable in the context of Bangladesh. This finding is similar to (Burrus et al., 2007); as they stated that “Online cheating is more prevalent than classroom cheating”. On the contrary to the findings of this study, Hewson (2012) opined, online assessment can make the learner more comfortable as they complete the test at a time and place of their own convenience. Another study (Clesham, 2010) shows that the online assessment makes reduction in anxiety and examination stress. The possible reason for such findings in Bangladesh context might be the poor network infrastructure, inability to use technology and fear of technicality related issues that could affect their performance in exams. Another major finding of this study was that students and teachers believed that online assessment comparatively practical and secured than traditional assessment which is found in other studies (Shraim 2019; Jereb & Bernik, 2005; Dermo, 2009). Such agreement might be possible as teachers can use question banks, navigate responses and randomize of the questions to reduce students’ chance of cheating.

Moreover, the study found that students and teachers should have a suitable internet connection to take part in online class or online assessment process. However, such arrangements put an extra economic pressure on students’ life, which is similar to literature (Dutta et al., 2020). Though it was also found from the study online assessment can hardly be biased based on gender. This study also shows that online assessment is not suitable for all subject areas as many of these required hands-on activities to understand practical experiences.

Additionally, this study finds assignment, viva, presentation, MCQ exams are mostly used strategies as these strategies are quite congenial for both students and teachers during online assessment. This finding is similar to Swan (2001); as she stated that discussion, written assignments, projects, quizzes and tests, and group work can be helpful strategies for online assessment. Similarly, Arend (2007) mentioned due to the same reason assignments and quizzes are mostly used assessment strategies which is common in



Bangladesh. This study also finds that projects, timed tests and quizzes and asynchronous discussion are also used in the online platform for effective assessment. Though self-assessment, peer assessment are also necessary strategies for effective assessment but these strategies are not being used in Bangladesh. That's why this study is not very similar to Gaytan and McEwen (2007). As they stated that projects, portfolios, self-assessments, peer evaluations, peer evaluations with feedback, timed tests and quizzes, and asynchronous discussion are effective mediums for online assessment.

The study finds out strategies and considerations that are needed for effective online assessment at the tertiary level in Bangladesh. Further studies investigating this topic would therefore be of value, particularly in the context of fully-online courses as opposed to blended learning contexts which use a combination of online/computerized and face-to-face learning and assessment, since the former have received very little attention to date (Stödtberg, 2012). This finding supports both students and teachers perspective on online education. Both of these stakeholders do not support relying on fully online based assessments rather they want a mixture of both so that their learning can be properly assessed. Students think that online viva, presentation, and emailing can be used for better communication. Also, special consideration should be taken for time allocation and other health issues. Teachers' also raised a consideration of financial aid, internet facility & collaboration with the network operators from their experience of students' attendance in their classes due to the poor network and other socio-economic concepts in mind. These are some suggestions from both ends for making online assessment effective that can be ensured by the authorities.

## **6. Implications and limitations**

This study finds that there are some issues at the policy level as there is no framework for online assessment. To make a specific framework for online assessment at tertiary level and resolving the issue regarding online learning & assessment this study can be useful. Initiatives can be taken for making online assessment valid, reliable with appropriate strategies. Meanwhile, facilities, supports and resources should be kept under considerations. As the study was conducted on a small scale with students who responded through internet, therefore, in future, large-scale research can be done in different contexts and settings.

## **7. Conclusion**

Online learning and assessment should be focused on educating students and evaluating student academic achievement. Online assessment can be a helpful medium to make assessment more effective. At the tertiary level, a collaborative framework between teachers and students should guide assessment practices addressing socio-economic disparities which is crucial for equitable participation. A blended approach, combining online and traditional assessments, enhances effectiveness. Effective online assessment strategies encompasses quizzes, projects, portfolios, self-assessment, and peer evaluations by ensuring validity, reliability and transparency to minimize cheating risks. To ensure that online instruction and assessment must balance the requirements of technology, pedagogy, learning methods, and learning outcomes.



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**Md. Istiaque Hasan** is a dedicated humanitarian worker currently serving as an Education Coordinator at the Norwegian Refugee Council (NRC) in Bangladesh. With over six years of professional experience in the education sector, he has made significant contributions to various educational programs. Istiaque previously worked with ASA's education program and was a Program Coordinator at Agami Education Foundation. Additionally, he contributed as a Research Assistant at UNICEF Bangladesh, focusing on pre-primary and primary curriculum revision. Istiaque holds a Bachelor of Education and a Master of Education from the Institute of Education and Research, University of Dhaka. He also completed a Master's in Governance and Development Studies from Jahangirnagar University, Bangladesh. His research work includes a publication on "Challenges of Implementing the Inquiry-Based Teaching Learning in Primary Science Classroom" in the Journal of Teacher Education, Bangladesh Open University. His extensive background and dedication to education make him a valuable asset in the humanitarian field.

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## Attitudinal Barriers Faced by the Students with Disabilities in Bangladesh: Perspective of Special Educators

Nosrat Jahan Ormi<sup>1</sup>

Md. Adnan Nadviv<sup>2</sup>

### Abstract

This qualitative study aimed at exploring the perspectives of special educators on the barriers which students with disabilities face. Special educators from different parts of Bangladesh was selected as the respondents for this study. The findings from the interpretation of the data derived from them reflected on various attitudinal barriers SWD face: including lack of knowledge and awareness, discrimination in both households and communities, religious prejudices and misconceptions, lack of investment and motivation by parents and an overall negative attitude towards the SWD. This study also shed light on the issue of discrimination the special educators face from mainstream educators and mass people. Based on the findings of this study, it can be assumed that a holistic approach to elimination of prejudices, increasement of awareness and generation of a social movement might eradicate the attitudinal barriers SWD face and transform the society to be more livable for them.

**Keywords:** Attitudinal barriers, prejudices, discriminations, students with disabilities (SWD), persons with disabilities (PWD), Bangladesh

### 1. Introduction

“Disability is a form of social oppression involving the social imposition of restrictions of activity on people with impairments and the socially engendered undermining of their psycho-emotional wellbeing”

- Thomas (1990)

In the recent years, disability has become a burning issue in Bangladesh. According to a study by GED in 2015, 9% of the total population of Bangladesh which is more than 15 million people are dealing with some sort of disabilities. In this huge number of people, 29.6% are completely disabled, 43.7% has complex disability and 26.7 percent remain partially disabled (BBS, 2019). Facing deprivation in almost every sector in their life, these people with special needs lacks behind others from their birth. The study by Kibria et al. (2020) shows that likewise other low- and middle-income countries, persons with disabilities are treated as a marginalized group in Bangladesh and often they lack access to basic rights such as health, food, clothing, education and housing.

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### 1.1 Attitudinal Barriers faced by the SWD

Among all categories of barriers, the most prominent one might be the challenges and barriers SWD face in social situations regarding the behaviors and attitudes from the people around them. Center for Disease Control and Prevention (2020) categorized these attitudinal barriers as:

**“Stereotyping:** People sometimes stereotype those with disabilities, assuming their quality of life is poor or that they are unhealthy because of their impairments.

**Stigma, prejudice, and discrimination:** Within society, these attitudes may come from people’s ideas related to disability—People may see disability as a personal tragedy, as something that needs to be cured or prevented, as a punishment for wrongdoing, or as an indication of the lack of ability to behave as expected in society.”

The studies by Ostrom (2005); Baker et al. (2006) and Bisaro (2007), as cited in Jones and Boyd (2011) depicts that the social processes and the institutions, norms and behavioral characteristics influence and shape the interaction and organization of human beings. As such, attitudinal barriers for students with disabilities are far from uncommon in Bangladesh. These barriers affect areas of their lives that have a drastic impact on their wellbeing and social functioning. These attitudinal barriers, associated with the perception of other people, often stigmatize the SWD as their characteristics or identity. Nokrek et al. (2013) mentioned the exclusion, isolation, harassment, and stigmatization that disabled persons face in Bangladesh along with the denial in their basic rights and entitlements. According to United Disability Service (2022) all the other barriers PWD face are the culmination of attitudinal barriers which form the base of discrimination and social stigmas.

Similar conclusions are drawn by the CDC (2020) who focused on the contributions of attitudinal behaviors in generating other challenges for SWD. They depicted the lack of awareness among common people as the reason for the difficulties PWD face in their social life.

In Bangladesh SWD face negative attitudes not only from the society but also from their own family. Studies by UNICEF (2009), Hussain (2008) and Titumir & Hossain (2005) show that the family of SWD feels shame in concealing their relationship in public due to social mockery and insults. Inside the family, they don’t get much importance as they are perceived unproductive and an extra baggage (GED, 2015; Davis, 2016; Sultana, 2010 as cited in Hussain, 2008).

Different studies (Davis, 2016, Sultana, 2010, GOB, IMF, 2005 as cited in Hussain, 2008) show that people from the society around PWD often use insulting words to address the people with deafness, unable to speak, or have any sorts of physical impairments which limits their mobility in social events. People with intellectual disabilities face these sorts of bullying and taunting most. They are called ‘crazy’, ‘mad’ or ‘dumb’. They are sometimes even attacked in public. Discrimination and insulting in family and community situations result in their self-confinement and withdrawal from social affairs. They face social



isolation and mostly lead their lives in complete isolation. Studies (NGDO, 2019; Maloni et al, 2010; Hosain, & Chatterjee, 1998 as cited in Hussain. 2008) specially point out the women with special needs being the most vulnerable as they face discouragement in getting married, choosing partners, or reproducing.

In the study by Henderson and Bryan (2011) illustrates that there are prejudices and misbeliefs among common people regarding the causes of disabilities including results of misdeed or sin committed by the parents, family, community, or the forbears. The depiction of behaviors of mentally challenged individuals as the presence of evil spirits or demonic possession are common phenomena too. Ahmed & Kashem (2015) also displayed similar findings on their study that despite the existence of scientific knowledge regarding disabilities, people perceive disability as the punishment from God.

### **1.2 Perception of the Special Educators on Attitudinal Barriers of SWD**

The 2015 study by Ahmed & Kashem very much focuses on the view of the special education teachers regarding attitude related barriers of special need students in Bangladesh. According to their study, 65 % of the teachers acknowledged the existence of social stigma in various forms. Among them 95% per cent of teachers identified the adverse effect of religious prejudices and misconceptions on the rights of SWD. Most of the special educators indicated that due to not possessing proper understanding of the situations of SWD, people tend to isolate them and show hostility towards them. The study showed similar results to its predecessors that almost all the respondents (special educators) agreed on the common people's perception on disabled persons being burden for the society. Results of this study also aligned with other studies regarding the issues of religious myths and misconceptions such as comprehending disability as results of sin.

The focus of this study is to explore the view of the special educators on the issue of attitude related barriers. Although several studies have been conducted on the attitude of the teachers towards disability, inclusion etc. but there are only a mere number of research that focus on their view on common people's attitude. As they are dealing with students from different communities in different areas of Bangladesh on daily basis, their perspective is very much imperative to shed some new light on the attitude related barriers SWD face in Bangladesh. Besides that, this study will create a better understanding of the probable future strategies to prevent such attitude related barriers.

### **1.3 Objectives**

The specific objectives of this study are:

1. To identify the perspectives of special educators on the attitudinal barriers SWD face.
2. To explore the perspectives of special educators on the probable strategies to prevent such attitudinal barriers.



## **2. Methods**

To explore the teachers' perception in regards of the attitudinal barriers the persons with disabilities face, the researchers adopted qualitative approach in this study. As the study aimed to highlight the teachers' perception, special educators from all over the country were the target population of this research. Among them 30 special educators from different districts who represents the 8 divisions of Bangladesh, were selected as the participants of this study. In this study, purposive and convenient sampling methods were applied to select the participants from the entire population. As this research demands an in-depth view of the teachers' perception, teachers who were accessible and willing to provide information were selected purposefully.

In this study, an in-depth interview questionnaire containing open ended questions was used as the instrument to gather data. The researchers maintained a structured and non-biased environment to search out reliable and valid data.

In-depth interviews were conducted in sufficient time span. All interviews were conducted in person by the researchers themselves. Proper consent was received from each participant before the interview session. All participants had the freedom to leave the interview incomplete the moment they feel offended or uncomfortable and could deny participating in interview.

The detailed data gathered from the in-depth interviews were put to analysis through thematic analysis approach. After preparing the collected data from the interviews, the researchers assigned coding to the data. From the codes, the researchers identified common themes to highlight major patterns. Major findings gathered from the thematic analysis were discussed in detail.

## **3. Result and Analysis**

Several themes and Sub-themes were identified from the in-depth interview. As the research searched the perspectives of the special educator regarding the attitudinal barriers faced by the persons with disabilities, gathered data from the samples are analyzed here thematically. The themes located from the interview reflect the outlook and perspective of the data providers. These themes are discussed below:

### **3.1 Factors Resulting Attitudinal Barriers**

#### **3.1.1 Lack of Knowledge**

Almost all the respondents identified that due to insufficient knowledge about disability, most people hold a negative outlook to the students with disability. Regarding this fact one of the respondents stated that,

“A large number of people of our society still think that disabled children are ‘Mad’, and disability occurs as the result of sins created by the parents of those children.”

People also seem to have little or no clue about special education and rebuke the special educators also with humiliating words. A respondent mentioned in this regard that,



“People of our society are mostly unaware of special education and its importance. They even mock at our profession and taunt us as ‘Teachers of mad people.’”

Moreover, all the participants accepted the fact that there is lack of knowledge among people about disabled students as well as disability and this may transmit negative attitude.

### **3.1.2 Lack of acceptance**

Most of the respondents signify that there is lack of acceptance towards persons with disability in our society. In this context, a respondent stated that,

“I have heard from parents that they faced certain circumstances in society where their child was not allowed due to his disability and different characteristics. Before coming to this profession, I never thought this may happen in the urban society too.”

Another respondent stated that,

“In the mall, movie theater and even in the amusement parks maximum people think that the children with disability may create any disturbance or occurrence. Their age level children also show uninterested gesture towards them to play or socialize.”

Rest statements connecting this concern from the respondents also reflect the similar type of finding about acceptance towards children with disabilities.

### **3.1.3 Negative attitude**

Maximum respondent agreed that persons with disabilities are more likely to face negative attitudes than anyone in society. Here negative attitude includes unwillingness to enroll, consideration as unusual, apathetic expression, and extreme manifestation of fear etc.

Concerning unwillingness to be enrolled, one of the respondents stated that,

“Whether it comes about education, co-curricular events, private coaching, or recreational activities, it is harder to be enrolled in any sphere for the children having any type of disability. The unwillingness not necessarily comes every time directly, sometimes it’s the approach that indicates the unwillingness of the responsible personnel.”

Another respondent mentioned that,

“The unwillingness of the authority of regular schools is much observed in the rural areas. The situation becomes worse for those special children whose areas are in lack of special schools.”

A respondent mentioned that many educated and civilized people also seem to be apathetic taking any step towards the persons with disability.

A significant finding regarding this concern by a respondent reflects that,

“Some people intentionally express an outburst expression of fear seeing the special children, as it’s their way of rebuke and negligence towards them. People also mock and taunt if they see the parents of any special child is enjoying in any situation or being happy.”



Maximum respondents agreed that existing rooted negative outlook formulates the negative attitude towards the persons with disabilities, and this negative attitude is dominantly present in our social environment.

#### **3.1.4 Discrimination**

All of the respondents identified ‘Discrimination’ as the prime social stigma persons with disabilities face in their daily environment. A respondent stated that,

“I am a teacher, and in my professional career I have seen many of my colleagues holding discriminatory attitude towards the students with disability. I think this discrimination makes their educational possibilities more lessen.”

Another respondent added that,

“As the persons with disabilities are mostly unaware of their social rights, people tend to befool them randomly.”

One of the respondents also mentioned that,

“This discriminatory attitude continues in the family environment too. Even the parents seem to be partial to their non-disabled child than the disabled one when it comes to providing facilities sometimes.”

All the respondents agreed with the fact that persons with disabilities face discrimination in maximum aspects of their life.

#### **3.1.5 Investments and Efforts**

This perspective directly shows the lack of motivation among families in spending their investment and efforts of time and money towards the SWD.

A participant mentioned that,

“In an average or middle-class family, it’s obvious that the parents are more willing to spend money to their regular child. Because they typically think the investment provided to their child with disability may not find any future return.”

Another respondent added that,

“Some of the parents are even ashamed of bringing out their special child in any public environment. As a result, they cannot reach to the education and their lives get confined in the walls of their home.”

Considering the fact of the effort a special child receives from his family members, a respondent said,

“Some families are aware of the intervention and therapy services. But many of parents do not bring their child to regular checkup or therapy sessions.”

Another participant added that,



“I mostly see parents being impatient and wanting quick solutions, but in term of following instructions their responses are not sufficient each time.”

Outcomes gathered from the respondents reflect that persons with disabilities need more attention, efforts, and investments comparatively. But the findings of this study reflect that they are lagged in context with these opportunities.

#### **4. Discussion**

The findings from this study draw a clear and in-depth picture of the attitude related barriers the SWD face in Bangladesh from the perspectives of special educators. Most of the participants in this study acknowledged the fact that among the common people of Bangladesh, specially in the rural areas, disability is still treated through the looking glass of misconceptions and prejudices. Aligned with the findings of several research on this issue such as UNICEF (2009), Hussain (2008), Titumir and Hossain (2005), findings of this study demonstrate the existence of attitude related barriers SWD face from their family and their community. Children with special needs are considered a burden and thus get excluded from family life, social events and relationships. Along with these sorts of behaviors, families even display negative attitude towards their educational privilege. Findings from this study also show that most of the common people possess adverse ways of thinking towards special education let alone inclusive education. A clear negligence to the SWD regarding their education is evident. Findings of the study depict the tendency of stinginess among parents in funding the education of their children with special needs. Rather than spending money on their education, the tendency of confining such children within home was found to be a common trait too.

Additionally, findings from this study shed some light on the attitude of parents regarding treating disabilities as some sort of disease and asking the educators to remedy it as quickly as possible. Special educators face these kinds of demands from parents frequently. As the article by Woods (2021) represented that the parents of the children with special needs lacks interest in the schooling of their kids due to the belief that they refuse to acknowledge their children's special needs, or they don't want to be disturbed. Moreover, teachers often come across the fact that parents bring their children with special needs only for therapy facilities in school, not to bring them into special education process. Because of this mindset, parents quickly get frustrated when the disabilities prevail. As a result, they become unsatisfied and tend to show more negativity towards the special needs of their children.

On the issue of bullying of the special educators, the findings on attitude related barriers from the community in this study align with the study by Hussain (2008). Researchers of this study stumbled on the view of special educators regarding issues such as lack of awareness and negativity among the community. The study also sheds light on the issue of bullying faced by the teachers of SWD by common people. An in-general unfamiliarity with the field of special needs and special education might be the crucial factor behind these attitudes.



Children and people with disabilities often get isolated by communities. In Bangladesh, a vast majority of the parents of regular children tend to possess negative attitude towards mixing their kids with the likeness of children with special needs, both in social and educational situations.

Religious misconceptions and prejudices play a vital role in forming these sorts of negative attitudes among the communities. This finding is on par with the results of the studies by Henderson and Bryan (2011) and Ahmed & Kashem (2015) which also depicted that people consider disabilities as result of the sin and show a general unacceptability towards the SWD. Common people tend to isolate not only the children with special needs but also their parents and families too. These hateful behaviors reach to such a level that the people from the communities don't tolerate even the slightest happiness that might come across the families with SWD as if they are meant to suffer in agony forever.

This study also brings forward the view of educators themselves, especially the teachers from mainstream education. There is a widespread predisposition of general education teachers showing discrimination towards SWD. They tend to discriminate among the students not only in academical situations but also in sports tournaments and such.

One of the limitations of this study might be the fact that this study focused on the perception of teachers, while the combination of perception of parents and mass-people would be imperative to draw an overall conclusion on this matter. Also, the findings of this study might not represent the scenario of the SWD who are in the higher studies.

## **5. Conclusion**

The study has attempted to explore the attitudinal barriers SWD face from the viewpoint of special educators. The context of this study mainly focused on the teachers' perception, which shed in-depth light over the issue as they experience firsthand the barriers their students face and the barriers, they face themselves. After interpreting the opinions from the teachers in the field of special education across the country, it can be concluded that even though there are many awareness initiatives by both government and non-government organizations, the existence of negative and adverse attitude towards SWD still persists in Bangladesh. On a final note, it can be contemplated that a countrywide initiative to raise awareness among the mass-people regarding disability and special education can be a solution to these barriers. But this initiative won't be fruitful without the proper engagement of all the stakeholders which need to be ensured first. This research will help the stakeholders to take proper steps to eliminate the barriers and establish positive mindset towards the SWD among people of Bangladesh.



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## The Prevalence of Auditory Risk Factors in Using Mobile Phone

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### Abstract

This study investigates the prevalence of auditory risk factors associated with mobile phone usage, especially in young and middle-aged people. The targeted groups are young people, whose ages are limited between 15 to 25, and middle-aged people between 26 to 45. The community people resided in Dhaka. Through quantitative research with very structured questionnaires regarding the risk factors of using mobile phones, this work will assess two groups of people along with compare and contrast between two groups about hearing-related issues in mobile phone users, including prolonged exposure to high volumes and frequent use of headphones, the research sheds light on the widespread nature of auditory risks in contemporary mobile phone usage. This research highlights the urgent need for public awareness campaigns and regulatory measures to mitigate these risks and protect users' hearing health.

**Keywords:** Auditory Risk factor, mobile phone usage, young people, middle-aged people.

### 1. Introduction

Auditory risk refers to any exposure to danger related to the sense of hearing. The chance of auditory risk is increasing for the extreme mobile phone usage. However, Prevalence quantifies the proportion of individuals in a population who have the disease, and proportion discusses the fraction, the part, or the number of individuals in the population with certain features. The range of the proportion is always between 0 and 1. This research assesses the proportion of individuals with the disease by analyzing the prevalence of auditory risk factors in mobile phone use.

#### 1.1 Statement of the problem

Mobile phones play a vital role in day-to-day regular life. However excessive usage of it may cause multiple issues like hearing loss, tinnitus, headache, brain trauma, middle ear pathology, vertigo, blurred vision, sleep disturbance, insomnia, itchy ear, depression, anxiety, stress. These issues are very burning and regularly increasing due to uncontrollable usage of mobile phone. Auditory risks are now unimaginable due to mobile phone use. This study will show case how the risk factors work differently for different person and how someone is becoming diseased and someone is not.

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## **1.2 Research Objective**

Firstly, we aim to analyze the auditory risk factor among young aged 15 to 25. Secondly, our goal is to analyze the auditory risk factor among middle-aged 26 to 45. Thirdly, we will make a comparison and contrast between these two groups. Fourthly, we will sort out the percentage of prevalence. After comparing the prevalence, our final target is to identify which group is most at risk due to prolonged mobile usage.

## **2. Literature Review**

Since 1983, mobile phones have been available. Their use has expanded quickly and broadly. In modern times, having a mobile phone as a communication tool is essential to living. More than 2.14 billion individuals worldwide were reported to be using mobile phones in 2005, and by 2010, that quantity is predicted by an increasing rate from 90% to 6 billion people (P. Velayutham et al, 2014).

In a study, it was mentioned that Noise-related hearing degradation is a societal as well as public-related health concern. Lack of attention, irritation, and more overheating in the ear revealed the most common complaints in undergraduates period ranging from 19 to 25 years using communal platform and headphones (Feroz et al, 2016).

In 2006 there was an investigation of how using a cell phone affects hearing utilizing frequencies between 500 and 4,000 Hz & it was found that prolonged experience of the electromagnetic domains created by cellular phones is linked to damage hearing (Oktay MF et al, 2006).

Although smartphones have improved our lives and are now necessary for daily tasks, excessive and unrestrained usage of them might lead to " Mobile device dependency "(MDD). MDD is a growing global community health concern, especially for Juveniles. During the period spanning July 2021 to February, there was a inspection conducted among 440 young adults in Bangladesh who met the eligibility requirements completed an online survey, providing a data. According to the study's findings, 61.4% of young adults exhibited cellular device addicts. Participants who were hooked to their smartphones were prone to reduced physical activity, Sleep deprivation, Bulky or obesity, and engaging in unsafe phone usage while driving, roaming, or gobbling. Furthermore, the MDD group was possibly to suffer physiological and psychological health issues (Ratan, Z. A et al, 2022).

Overuse of mobile phones might raise the pure tone threshold in relation to exposure length. Human hearing may be harmed by use for more than five years at a frequency of more than sixty minutes per day. According to Shafique, M et al, in 2019, it was found that, participant's right ear bone conduction and air conduction hearing thresholds at all frequencies were significantly higher than the compare groups. With the exception of bone conduction at frequencies of 4 and 6 (kilo hertz) kHz, similar results were observed in the left ear. Sensory neuronal hearing loss was the result of excessive mobile phone use; 84% of those who used their phones for more than 60 minutes a day experienced this condition, compared to 20% of those who used them for less than 60 minutes (Shafique M, 2019).



In 2022, in a study it was found that when a person use a mobile phone to talk it comes close to head and this causes a lot of damage to inner ear organ of corti due to phone radiation. It also causes a great hamper to the brain and other tissues on the side of exposure (Greger, Michael, 2022).

The use of mobile phones has expanded substantially during the last decade. They are now an important aspect of business, commerce, and communication, but their use may cause health issues. In 2005, a study was conducted on 873 (57.04% of males and 39.86% of females) people using mobile phones to observe mobile phone usage. The study discovered a link between mobile phone use and hearing and vision problems. About 34.59% of complaints were about reduced hearing, ear soreness, and or warmth on the ear, and 5.04% were about decreased and/or hazy vision. The study also found that using a mobile phone increases the risk of certain health problems. As a result, it is advised that excessive mobile phone use be avoided and that social awareness be raised through public health events like presentations and group discussions as well as through media outlets, both print and electronic (Meo, S. A., & Al-Drees, A. M. 2005).

The findings of a study titled "Mobile phones: influence on auditory and vestibular systems" about the relationship between mobile phone radiation and the possibility of developing an acoustic neuroma are debatable, some writers report that using analog cell phones for ten or more years increases the chance of acquiring a tumor, others did not find any evidence of a higher risk of tumor development in mobile phone users. Acute microwave radiation exposure has no effect on the electrical characteristics of the cochlear nerve, the vestibular system physiology in humans, or the function of the cochlear outer hair cells in vivo and in vitro. Digital mobile phones produce electromagnetic interference that is more prone to affect analog hearing aids. There is no proof that cell phones have caused a cochleo-vestibular injury (Balbani, A., & Montovani, J. 2008).

Over a three-year period, the impact of mobile phone usage on the hearing of 120 individuals and nonusers age range between 18–30 was investigated. Group 2 has either not used a mobile phone at all or has used one for less than a year, whereas Group 1 has used a mobile phone for more than a year for more than an hour every day. Losses of 5 dB in 10%, 10 dB in 3.3%, and 15 dB in 1.6% were observed in those who used phones for two to three hours a day. Also, those who used for three to four hours a day reported a loss of 5 dB in 6.6% and 10 dB in 3.3%. In the study group, 26.6% of the participants had sensorineural hearing loss, whereas in the control group, 3.3% had it. According to this research, there is no discernible hearing loss in mobile phone users (Chandra, M. et al. 2013).

The incidence of auditory risk factors associated with mobile phone use in Bangladesh is growing due to widespread use. Increased mobile phone ownership has improved access to healthcare services such as maternal and child care, immunization coverage, and disease management (Kibria et al., 2023). Despite multiple studies, there is a lack of study on auditory dangers from cell phone use in Dhaka. This gap encouraged us to undertake research and create questionnaires.



### 3. Methodology

#### 3.1 Participants and Site

400 participants are there and the site is in Dhaka North.

#### 3.2 Instruments

A structured interview questionnaire was used to collect the quantitative data.

#### 3.3 Data Collection Method

A questionnaire was used to gather information from mobile phone users on their exposure to mobile phones and auditory health issues. There was a set of 10 closed-ended questions in the survey on the participant's mobile phone usage patterns (such as how frequently they use their phone, what they use it for, and how loud they set the level), as well as any auditory issues they may have experienced (such as tinnitus, hearing loss, or ear pain). Includes data about the participants' demographic data. The researcher gathered information from participants using a Google form and printed paper distribution among the two participant categories. The study includes young age (15-25) and middle age (26-45) mobile phone users.

### 4. Data Analysis and Result

#### 4.1 For young age people (15-25)

**Table 1:** Use of mobile phone

Response	%
Yes	99
No	1

Just 1% of respondents said they do not use a cell phone, compared to 99% who said they do.

**Table 2:** Hours use to talk over phone

Duration	%
Less than 1 hour	20
2 hours	31
3 hours	40
More than 4 hours	9

The box represents the distribution of phone call durations, with 20% of calls lasting less than 1 hour, 31% at 2 hours, 40% at 3 hours, and 9% lasting more than 4 hours.



**Table 3:** Hours use phone including screen time, to talk over

Duration	%
Less than 1 hour	5
2 hours	5
3 hours	15
More than 4 hours	80

This box represents the distribution of phone usage hours, with 80% of people using their phones for more than 4 hours, 15% for 3 hours, and 5% for 2 hours or less.

**Table 4:** Usage of ear phone while talking over mobile phone

Response	%
Yes	97
No	3

This represents the percentage of people who use earphones while talking on a mobile phone, with 97% indicating they do and 3% indicating they don't.

**Table 5:** Facing any problems after talking over phone

Category	%
Headache	5
Earache	7
Increased temperature of ear	25
Increased temperature of head	0
Redness of the ear	1
Blurred vision	1
vertigo	3
Itchy ear	8
Others (Tinnitus, reduced sound perception etc.)	50

The majority of issues are related to ear-related discomfort and complications, with increased ear temperature being the most common problem, followed by itchiness and earaches. Other problems, such as tinnitus and reduced sound perception, account for a significant percentage of reported issues. Less common problems include headaches, blurred vision, vertigo, and redness of the ear.



**Table 6:** Facing problem in noisy environment while talking over phone

Response	%
Yes	65
No	35

According to the data, 65% of respondents reported facing problems when talking on the phone in noisy environments, while 35% did not encounter such issues.

**Table 7:** Volume range while talking over phone

Category	%
Normal	10
Moderate	60
High	30

The distribution of the volume ranges while talking over the phone. It shows that 10% of the time, the volume is at a normal level, 60% at a moderate degree, and 30% at a higher intensity.

**Table 8:** Observing any sleep disturbances after using phone for long duration

Response	%
Yes	35
No	65

Sleep disturbances are observed after using the phone for an extended period. It indicates that 35% of respondents experienced sleep disturbances (Yes), while the majority, 65%, did not (No).

**Table: 9:** Screen time exposure

Category	Don't use	more than 30 mins	1-2hours	2-3 hours	more than 3 hours
YouTube	10	70	20		
Music	5	50	15	30	
Gaming	0	4	6	10	80
Video call	60	35	3	2	
Other applications	25	25	60		

The numbers in the box represent the amount of time spent on these applications in different time ranges: less than 1-2 hours, 2-3 hours, and more than 3 hours. The numbers indicate the extent of usage in each category for different time periods.



**Table 10:** Awareness about risk

Response	%
Yes	85
No	15

This represents survey responses regarding awareness of risk. It shows that 85% of the respondents are aware of the risk, while 15% are not.

## 5.2 For Middle-aged Group: 26-45

**Table 1:** Use of mobile phone

Response	%
Yes	99
No	1

The vast majority of people use mobile phones, with 99% of individuals incorporating them into their daily lives.

**Table 2:** Hours use to talk over phone

Duration	%
Less than 1 hour	20
2 hours	20
3 hours	6
More than 4 hours	55

This data provides a breakdown of the percentage of phone call durations. Twenty percent of the time, calls are less than 1 hour, another 20 percent are 2 hours long, 6 percent last for 3 hours, and the majority, at 55 percent, exceed 4 hours.

**Table 3:** Hours use phone including screen time, to talk over

Duration	%
Less than 1 hour	40
2 hours	30
3 hours	5
More than 4 hours	25

This box chart represents the distribution of phone usage, with 40% using it for less than 1 hour, 30% for 2 hours, 5% for 3 hours, and 25% for more than 4 hours, including screen time and talking.



**Table 4:** Usage of ear phone while talking over mobile phone

Response	%
Yes	15
No	85

The box indicates that only 15% of people use earphones while talking on a mobile phone, while 85% do not.

**Table 5:** Facing any problems after talking over phone

Category	%
Headache	10
Earache	7
Increased temperature of ear	15
Increased temperature of head	1
Redness of the ear	2
Blurred vision	5
vertigo	10
Itchy ear	5
Others (Tinnitus, reduced sound perception etc.)	45

After talking over the phone, some people may experience various issues, with the most common problems being headache (10%), earache (7%), increased temperature of the ear (15%), increased temperature of the head (1%), redness of the ear (2%), blurred vision (5%), vertigo (10%), itchy ear (5%), and other issues like tinnitus and reduced sound perception (45%).

**Table 6:** Facing problem in noisy environment while talking over phone.

Response	%
Yes	85
No	15

This information represents the issue of facing challenges when talking on the phone in a noisy environment, with 85% of respondents confirming the problem.

**Table 7:** Volume range while talking over phone

Category	%
Normal	5
Moderate	25
High	70



This box represents the volume range for phone conversations, with categories ranging from Normal (5%), Moderate (25%), to High (70%).

**Table 8:** Observing any sleeps disturbances after using phone for long duration

Response	%
Yes	75
No	25

This box summarizes that 75% of people reported sleep disturbances after using their phone for a long duration, while 25% did not.

**Table: 9:** Screen time exposure

Category	Don't use	more than 30 minutes	1-2 hours	2-3 hours	more than 3 hours
YouTube	20	70	10		
Music	60	35	5		
Gaming	70	4	25	1	
Video call	60	35	3	2	
Other applications	70	25			

This table represents the average time spent on various activities, such as YouTube, Music, Gaming, Video calls, and other applications, categorized by different time intervals ranging from less than 30 minutes to more than 3 hours.

**Table: 10:** awareness about risk

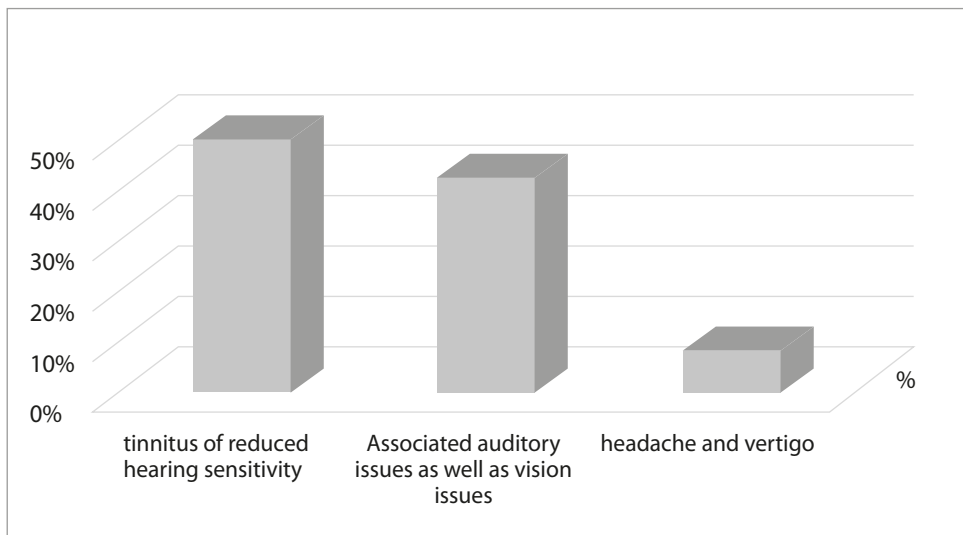
Response	%
Yes	55
No	45

### 4.3 Prevalance rate of diseases

#### 4.3.1 Young Aged Group: 15-25

According to the data reported in this table, the majority of young individuals (50%) experienced tinnitus or reduced hearing sensitivity as a result of prolonged exposure to mobile phones. 42% claimed to have related auditory and vision impairments. The remaining 8% of the group reported having headache and vertigo.

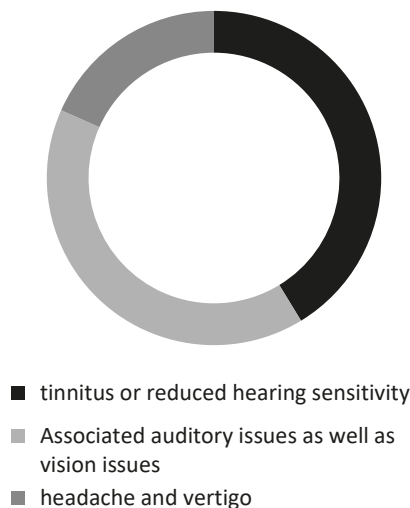




**Chart 1:** Prevalence rate of diseases in young age people.

#### 4.3.2 Middle-Aged Group: 26-45

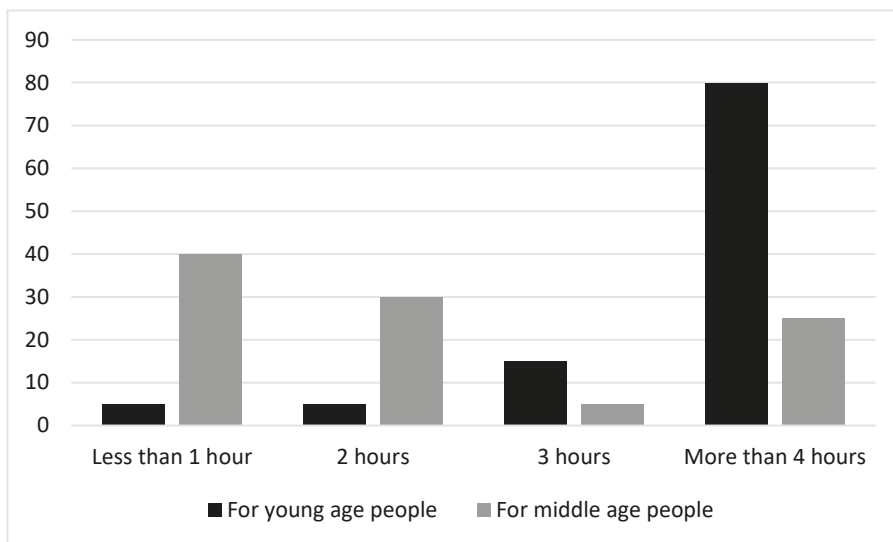
The majority of middle aged people (45%), as a result of prolonged exposure to mobile phones, experienced tinnitus or decreased hearing sensitivity, per the data presented in this table. 44% claimed to have visual and auditory problems that were connected. Vertigo and headaches were reported by the remaining 20% of the sample.



**Chart 2:** Prevalence rate of diseases in middle age people.



#### 4.4 Compare and contrast between two generations



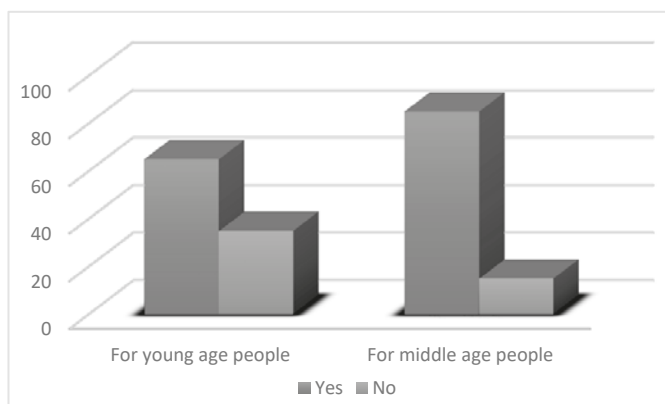
**Chart 3: Hours use phone including screen time, to talk over**

Young people predominantly use their phones for more than 4 hours daily (80%), whereas middle-aged individuals primarily use their phones for less than 1 hour (40%) or 2 hours (30%) daily. Notably, only 5% of both age groups use their phones for exactly 2 hours daily.

**Table 1: Usage of ear phone while talking over mobile phone**

Response	For young age people	For middle age people
Yes	97	15
No	3	85

The table shows responses to a question categorized by age groups: 97% of young people answered "Yes" while 3% answered "No," whereas 15% of middle-aged people answered "Yes" and 85% answered "No."





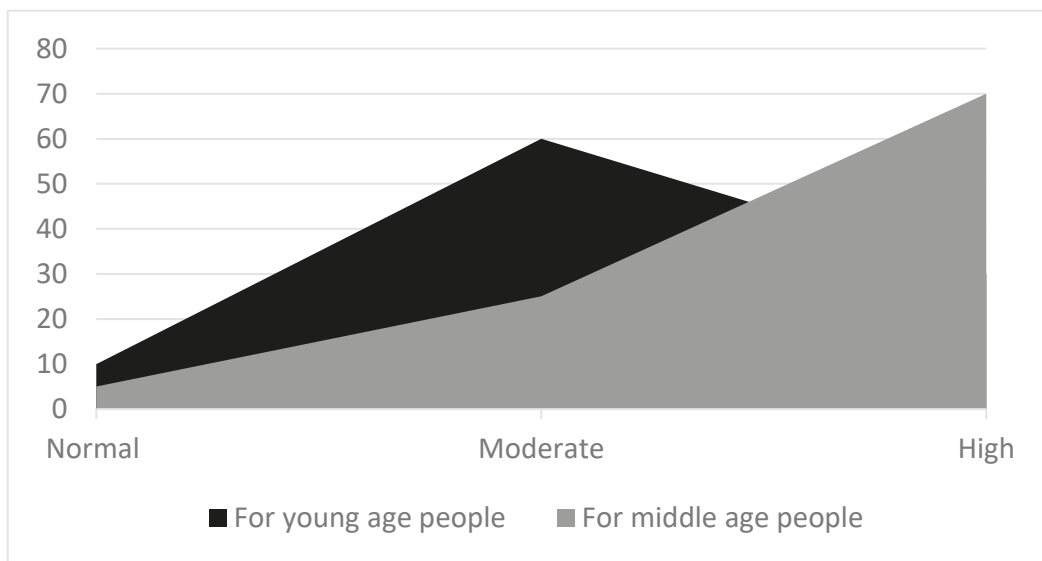
**Chart 4 : Problems faced in a noisy environment while talking over the phone**

Among young people, 65% responded "Yes" and 35% responded "No." For middle-aged people, 85% responded "Yes" and 15% responded "No."

**Table 2:** Volume range while talking over the phone

Category	For young age people	For middle age people
Normal	10	5
Moderate	60	25
High	30	70

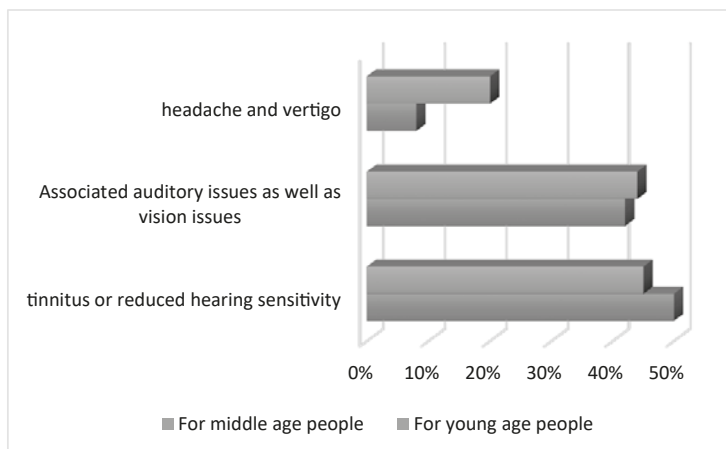
The table shows that among young people, 10% have normal, 60% have moderate, and 30% have high values, while among middle-aged people, 5% have normal, 25% have moderate, and 70% have high values. This indicates a trend of increasing high values with age.

**Chart 5: Volume range while talking over the phone****Table 3:** Awareness of risk

Response	For young age people	For middle age people
Yes	85	55
No	15	45

The table shows that 85% of young people and 55% of middle-aged people are aware of risks, while 15% of young people and 45% of middle-aged people are not aware. The data indicates a higher awareness of risk among younger individuals compared to middle-aged individuals.





**Chart 6:** Prevalence rate of diseases

The prevalence rates of tinnitus or reduced hearing sensitivity are 50% for young people and 45% for middle-aged people, while associated auditory and vision issues affect 42% and 44% of these groups, respectively. Headache and vertigo are reported by 8% of young people and 20% of middle-aged people.

## 5. Discussion

According to the survey, 47.5% of people in the middle and younger age groups reported having tinnitus or decreased hearing sensitivity as a result of extended use of mobile phones. 38.5% reported having related problems with both hearing and vision. Merely 14% of respondents reported experiencing dizziness and headaches. The study also showed that sleeplessness and decreased speech intelligibility were common symptoms among those who spent extended periods of time using a cell phone. After talking over the phone, some individuals may experience various problems, with the most common issues being earache (7%), increased temperature of the ear (20%), headache (7.5%), and other symptoms like tinnitus or reduced sound perception (47.5%). These issues can be attributed to prolonged phone usage and potential electromagnetic radiation exposure. Additionally, the researchers found that consumers were not aware of the auditory dangers associated with prolonged use of mobile phones.

## 6. Scopes and Limitations

This research has multiple scopes in the field of audiology and public health. This study explains the depth of understanding of the use of mobile phones and the auditory risk factors and how our body and mind react to this. As we conducted this research combining two different generations, we may be able to understand their issues more specifically. Also, the readers are getting knowledge about the probable risk of auditory problems.

Though we can find many possible benefits of our research, there are some significant limitations of this paper. We have taken our participants from Dhaka only, so our paper cannot be a reference in general. We could not do any clinical examination; that is another limitation of this paper. If we could do a blinded RCT and clinical study, then this paper would be more authentic. Shortly, we will extend this study clinically.



## 7. Conclusion

The survey found a high prevalence of auditory and associated disorders as a result of prolonged mobile phone use, such as tinnitus, decreased hearing sensitivity, dizziness, and headaches. Sleeplessness and reduced speech intelligibility were among the most common symptoms. Prolonged phone use and probable electromagnetic radiation exposure exacerbate these issues. Consumers are unaware of the auditory hazards associated with mobile phone use. Balancing the benefits of mobile phone use against potential auditory dangers is critical, particularly in healthcare settings, necessitating additional study and treatments to prevent these concerns.

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## Enhancing Early Childhood Development in Bangladesh: Translating and Assessing the Social Emotional Development of New Portage Guide

Mahbuba Akter<sup>1</sup>

### Abstract

Children who experience developmental delays or exceptional advancements benefit greatly from thorough evaluation and timely intervention to unlock their full potential. To meet up the growing needs of early childhood development and education New Portage Guide (NPG) birth to six, a assessment and curriculum planning tool to advance the development of children with various different disabilities, has been created in 2003. New Portage Guide is an effective tool in improving the development of children with various different disabilities. This research envisaged to translate and tryout the items of Social Emotional Development of New Portage Guide which will add a new dimension in the sector of early intervention. In order to use this component of New Portage Guide in Bangladeshi culture, the research is administered by the Tool for Observation and Planning (TOP) of Social Emotional Development of New Portage Guide in Dhaka city. Performing the study the finding shows that most of the items for different age group are appropriate for Bangladesh as they achieved the target level of difficulty power (P Value). Besides there are only few items which need modification due to their unacceptable difficulty power (P value). So these items should be modified to adapt to walk with the advance world. Therefore NPG should be adapted and apply to the Bangladesh to address the challenges of delayed childhood development.

**Keywords:** Portage Guide to Early Education (PGEE), Social Emotional Development, Tool for Observation and Planning (TOP), New Portage Guide

### 1. Introduction

The world is filled with unique individuals where each person possesses a diverse set of characteristics, personality traits, moral, values and attitude. We are social being, so to be part of a harmonious society, we must adopt certain behaviors and embrace shared values. Unfortunately some individuals experience delayed in their development. One of the main delay occur in social emotional growth. To address these challenges and provide appropriate support an intervention, it becomes essential to identify the specific developmental needs of such individuals.

When David E. Shearer founded the Portage Project in 1969, its original goal was to help young children in a rural community who had been identified as having difficulties (Shearer and Shearer, 1972). The Portage Project provided home-based programs in the early 1970s to assist parents in their role as their children's primary, most important, and influential educators.

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The Portage Project model has continuously changed over time as a result of new laws, documented experiences with best practices with kids and parents, and ongoing research. This has increased the amount of high-quality programming and improved services in the early childhood education sector, particularly in early intervention programs (CESA 5, 2003). These objectives are then carried out in the family through regular schedules and activities that the parent and kid participate in. In order to guarantee that children's goals are met and to enhance and improve parent-child connections, certain play-based activities are also provided and used (CESA, 2003).

The Portage Project, which is still going strong today, is a program for interventions conducted from home for families whose young children have been diagnosed with impairments. This family-guided model, which can start in a home setting or a combination of a classroom and a home, centers on a home visitor who assists parents and caregivers in addressing the goals of each child and family as outlined in the IEP (Individual Education Plan) and IFSP (Individual Family Service Plan), taking into account the child's developmental requirements, interests, and desires as well as the environment, customs, and family dynamics (Herwig, 1995).

The Portage Guide to Early Education (PGEE) is recognized for its focus on early intervention and the establishment of intervention systems within communities to support development. (Simeonsson, 1991). Various literature reviews showed that the portage is a cross cultured program and thus many countries have adapted it in many language and portage evaluation data showed that Children were indeed making progress, parents were highly successful as teacher, and the program strategy of sending teachers into the rural homes of families with children with handicaps was working.

A report was presented in Kuwait regarding Portage's successful participation in the inaugural Arab Regional Conference of Rehabilitation and the Second Gulf Conference in Medical Rehabilitation, both of which took place in Kuwait City earlier in 2010. At the conference, portage was well-represented. The report indicated that parents who were participating responded favorably to portage, and the demand for portage services resulted in a significant rise in the number of families getting portage—more than 60 families are currently involved. Over the past two years, the Kuwait City Early Intervention Centre for Children with Special Needs' working crew has successfully developed and delivered Portage services, which has sparked a great deal of interest in the concept. (PORTAGE IN KUWAIT)

Turkey has been introduced to the Portage Guide for Early Education under the direction of NGO's and academic staff of universities during the beginning of the 1990's, in May 1994 a permission was given by SESA 5 to translate the original portage material into Turkish. At present, some day care centre, nursery schools, preparatory classes and special education schools in Turkey are using the Portage Guide to early Education materials for supporting the development of preschool children and children with special need (Ender, U. M. 2008).



The study conducted in Sri Lanka and published in the Sri Lanka Journal of Child Health in 2007 found that implementing a home-based psychological intervention program during the first year of life for infants showing signs of developmental delay, utilizing the Portage guide, was both effective and practical.

The Portage Guide to Early Education is implemented in India within the realm of early intervention services. The Portage project was implemented in India to assess adherence to an early intervention initiative for infants at high risk and to identify factors influencing their developmental challenges, as reported in the Indian Pediatrics Journal in 2000.

The three Fenno Scandinavian countries in the Nordic Region of Europe i.e. Finland, Sweden and Norway introduced the Portage Guide to Early Education in different forms and was translated and adapted for their own culture (Jarl Formo, 1998).

The objective of the Portage Guide is to minimize interruptions and improve the growth and learning experiences of both children and families by offering a home-centered early intervention initiative. Adopted globally, this project identifies developmental needs and provides early intervention services. Embracing the Portage Guide in our country aligns with international trends, prompting a researcher to create a Bengali version and adapt trial items for early education.

### **1.2. Statement of the problem**

The article focuses on tackling the pressing concern of developmental delays among children in Bangladesh, particularly focusing on the lack of early intervention services. Despite the foundational importance of the first five years in shaping a child's future, there is a notable gap in services, with only a few organizations attempting to provide assistance.

The Portage Guide, originally developed for Western countries, presents a promising home-based learning style. However, the challenges lie in its cultural and linguistic disconnect from Bangladesh. The article seeks to explore the translation and adaptation of the New Portage Guide's "Social Emotional Development" component to align with the cultural context of Bangladesh.

The research recognizes the urgent need for efficient and culturally relevant early intervention programs in Bangladesh. With a high prevalence of disabled individuals and limited resources, the translation and adaptation of the New Portage Guide hold potential for creating a low-cost intervention program. By focusing on the social-emotional development aspect, the article aims to address delays that hinder a child's ability to interact with others and form relationships.

### **1.3. Purpose**

The main goal of this study is to translate the Social Emotional Development section of the New Portage Guide. Additionally, the research aims to conduct item analysis, facilitating the adaptation and modification of items to align with the cultural context of Bangladesh.



#### **1.4. Research Objective**

- a) To translate the Social Emotional Development section of the New Portage Guide.
- b) To try out the Bengali version of Social Emotional Development for children aged eighteen months to six years.
- c) To Identify and pinpoint items in the original Portage Guide that require adaptation due to cultural inappropriateness in the context of Bangladesh

#### **1.5. Rationale of the Study**

The Portage Project utilizes a method of learning that takes place in the home environment, emphasizing the significance of a child's natural environment for education. This method has been translated into numerous languages and is widely adopted across various countries as an effective means of conveying first-rate early intervention facilities to both youngsters and their families.

It is disheartening to observe that a considerable number of disabled individuals in Bangladesh lack access to essential education, services, jobs, and other opportunities, making their lives challenging. Early intervention programs are scarce in the country. In 1984, the "Bangladesh Protibondhi Foundation" (BPF) introduced the "Distance Training Package Programme" (DTP) designed to impoverished disabled children in urban and rural areas, based on the Portage Guide to Early Education (PGEE). Considering the revisions and development of the New Portage Guide by the portage project team, it becomes imperative to adapt the updated PGEE on a broader scale to cater to the ongoing needs of early intervention programs in Bangladesh, aligning with the nation's perspective and cultural context.

To make a developmentally delayed child as a self-supporting individual, appropriate assessment and intervention is required. The New Portage Guide is prepared for western countries, which makes it difficult to apply in our country because of language and cultural differences. If it can be translated in our language and adapt according to our culture, it would be easier to apply and our early intervention program will be more meaningful and affluent.

Early intervention involves identifying targeted methods to maximize a child's functionality. In Bangladesh, there is a lack of awareness about the importance of early intervention services. Translating and adapting the New Portage Guide can raise awareness by creating teaching guides and training programs. This initiative also aims to equip parents of developmentally delayed children with the knowledge to effectively support their child's learning.

#### **1.6. Limitations**

Despite the researcher's wholehearted efforts, the study is subject to limitations such as a relatively small sample size (120 participants) confined to urban areas, specifically Dhaka City. A more comprehensive cultural representation could be achieved with a larger sample



covering rural areas and small townships. The study was conducted within constrained time and resources, limiting the opportunity for more in-depth statistical analysis that additional time and resources could have afforded.

## 2. Method and Procedure

The research aimed to translate the Social Emotional Development domain of the New Portage Guide and perform item analysis to identify items needing adaptation for the Bangladeshi cultural context. The study targeted children aged 18 months to 6 years in Dhaka Metropolitan City. In this study, the metric equivalency and item difficulty index were crucial statistical procedures used to measure the corresponding difficulty level of each item within the Social Emotional Development section of the New Portage Guide.

### 2.1. Participants

The study included a random sample of 120 children, selected from three educational institutions within Dhaka Metropolitan City. These institutions include two daycare centers and one primary school, which are referred to here as Institution A, Institution B, and Institution C to maintain confidentiality. The distribution of the participants was as follows:

**Table: 1**

**Table- 1** display the respective counts of children in different age groups within each organization.

Name of the Institution	Number of children from different age group				Total
	18 to 36 months	3 to 4 years	4 to 5 years	5 to 6 years	
A	19	13	08	02	42
B	11	17	16	04	48
C	00	00	06	24	30
Total children from different ages	30	30	30	30	120

### 2.2. Sample technique

A stratified random sampling technique was used to ensure that each age group was appropriately represented in the study. This method allowed for the equal representation of each age group and institution, providing a comprehensive overview of developmental stages across early childhood.

### 2.3. Instrument used

The researcher employed the most recent revision of the New Portage Guide (2003), which was developed by a group of consultants, to conduct the planned study.



### **2.3.1. Description and organization of the tools for observation and planning (TOP)**

#### **Age range**

The Tool for Observation and Planning (TOP) uses six color-coded age ranges that align with common early childhood programs. These colors represent the typical ages when children might reach specific developmental milestones.

#### **Developmental Areas**

Communication/Language/Literacy

Social Emotional Development

Exploration and Approaches to Learning

Purposeful Motor development

Sensory Organization

#### **Selected developmental strand**

The phrase "social emotional development" describes a child's growing ability, from birth to age five, to form safe, close relationships with peers and adults, to feel and express emotions in ways that are appropriate for their social and cultural context, to explore their surroundings, and to learn (all within the framework of their family, community, and culture) (CSEFEL). The sphere of Social-Emotional Development involves how children perceive themselves and engage with others. Progress in this area is shaped by a child's personality, cultural norms, and early life encounters. Building self-confidence and self-esteem is facilitated by emotional support and stable relationships. Key aspects within this domain include a child's ability to form friendships, embrace diversity, resolve conflicts, and thrive within group dynamics. These qualities lay the groundwork for learning and the meaningful relationships that enrich life.

### **2.4. Translation**

The task at hand involved translating the items within the Social Emotional Development domain of each age group from the New Portage Guide, originally in English. Additionally, the translation extended to Bangla for the activity cards, as well as the observation and planning tools, aiming to enhance ease of application. The entire translation process was with the consents of teachers from the department of Special Education, situated within the Institute of Education and Research.

### **2.5. Material used**

To fulfill the requirements of the proposed research, the Tool for Observation and Planning (TOP) from the New Portage Guide was employed. The Portage Project program utilizes a variety of accessible tools and resources created for the convenience of both educators and parents. Each developmental strand includes specific materials such as toys, games, reading and writing materials, activity cards, charts, play items, color and number concepts, stationeries, etc. These materials were selected based on the child's age and the specific context of observation. Local availability of items was ensured, and any items deemed unsuitable for Bangladesh will be adapted following the item analysis.



## **2.6. Procedure**

To conduct this study, the researcher used systematic observation methods as recommended by the New Portage Guide. The first step involved getting permission from the institutions where the children were observed. The researcher obtained a consent letter and presented it to the respective institutions. Once permission was granted, the researcher prepared a list of children organized by age and selected participants randomly from each age group.

Building a good relationship with teachers, caregivers, parents, and children was crucial for gathering reliable information. The researcher engaged with children both individually and in groups to assess their social and emotional development using the Tool for Observation and Planning (TOP). This involved organizing various activities listed on the activity cards to create suitable situations for observation.

For certain behaviors, such as a child's ability to separate from a parent in familiar surroundings, the researcher had to wait for these situations to occur naturally. If it was difficult to observe a child's behavior directly perhaps because the child was shy the researcher would consult with caregivers or parents to verify the child's capabilities.

Ultimately, all observations and data were organized and analyzed using the TOP framework to understand each child's social and emotional development comprehensively. The assessment methods utilized for evaluating the children included:

**A= Always Perfectly:** The child can consistently execute the task independently, demonstrating reliability across various tools, environments, and with different individuals' support.

**S= occasionally or somewhat:** Additional practice is required to fully understand the skill.

**N= never or certainly not:** At the present moment, the child is not employing the particular talent.

## **3. Result and Findings**

### **3.1 Item difficulty Index**

The difficulty of a test question is measured by how many people can answer it correctly. The more people who answer correctly, the easier the question is considered. This creates an inverse relationship: if a question is very difficult, fewer people will answer it correctly, resulting in a lower difficulty index. (Wood, 1960).

To assess the complexity level of an item, calculate the ratio of correct responses to the total number of participants. To evaluate the complexity of a test question, it is essential to define the characteristics of both the upper and lower groups. Various rules and theories exist for determining difficulty power. In this study, the researcher categorized each age range into upper and lower groups based on their respective scores from observations within that specific age range.



In simplified form, the formula to compute an index of difficulty power based on this idea is the following:

$$P = \frac{U_p + L_p}{U + L}$$

Where,

P= difficulty index

U<sub>p</sub>= the count of students in the higher group who responded correctly to the test item.

L<sub>p</sub>= how many students from the lower group answered the test item correctly?

U= total amount of students in the higher group

L= total amount of students in lower the group

[Source: J. Stanley Ahmann, Marvin D. Glock; Evaluating Student Progress (6th Edition) London, allyn and Bacon, Inc. 1981 page;160]

The aim of this study was to translate and calculate the Item Difficulty Index for the Social Emotional Development section of the New Portage Guide, making it applicable for early intervention programs in Bangladesh. Item Difficulty Index was used to statistically signify the acceptance of items suitable for Bangladesh as well as to identify items that need to be adapted and modified to suit the culture.

It is notable that item difficulty is considered as one of the most suitable techniques, the item are evaluated finally on the basis of the result of the result of I Item Difficulty. The expected and acceptable vicinity of P (Item Difficulty) is 30% to 70% but as the best value of P is 50%, hence the researcher considered 50% as the target level of difficulty. In this study, researcher accepted all the items whose difficulty level was above 50% and considered those items culturally in appropriate for Bangladesh whose difficulty level was below 50%.

### 3.2 Result

The following table shows the difficulty index of different items of Social Emotional Development at different age ranges according to New Portage Guide.

Scores indicates that these items need adaptation for our Bangladeshi culture.

**Table: 2 Shows the difficulty index of the items of social Emotional Development of NPG for 18 to 36 months.**



Age Range	Item No in Activity Card	Description	Difficulty Power (%)
18 to 36 months	10	Explores humor by acting silly to get attention	60
	11	Tries out different behaviors to test caregiver's responses and limits	53.30
	12	Does actions or shows products for caregiver approval	66.70
	13	Separates easily from parent in familiar surroundings	66
	14	Reacts with crying or tantrum when frustrated	56.70
	15	Shows self-control by following simple rules (eats at the table)	50.00
	16	Demonstrates caution in dangerous situations, avoids common hazards	63.30
	17	Motivated to do many things independently (Wipes nose, dresses, eats, toilets)	<b>36.70</b>
	18	Explores unfamiliar places or people with caregiver present	73.30
	19	Takes turns in activities and conversation, with guidance or family member	<b>46.70</b>
	20	Plays near other children; each doing separate activities	50
	21	Imitates other's behaviors in play, e.g. pretends to cook, or eat a snack	73.30
	22	Explores properties of various art media and building materials e.g. paint, play dough or block and legos	96.70
	23	Responds to music, clapping, dancing, or clanging two objects together	80

**Note.** The table has been reprinted from User's Guide, Portage Guide Birth to six, for infant/toddler and preschool.

Analysis of Table No-2 reveals that among the fourteen items of age range 18 to 36 months, twelve items (10, 11, 12, 13, 14, 15, 16, 18, 20, 21, 22, 23) exhibit satisfactory p-values. However, the remaining two items (17, 19) fall short of the desired difficulty level (considered as 50% by the researcher). Consequently, it can be concluded that these twelve items are culturally appropriate, while the two items necessitate modification due to their perceived difficulty for children aged eighteen to thirty-six months in the context of Bangladesh.



**Table: 3 Shows the difficulty index of the items of social Emotional Development of NPG for 3 to 4 years.**

Age Range	Item No in Activity Card	Description	Difficulty Power (%)
3 to 4 Years	8	Cooperates with adult requests most of the time	<b>46.70</b>
	9	Shows pride in doing things without adult help	76.70
	10	Waits three to five minutes to get needs met	<b>20</b>
	11	Shows affection, Praise, empathic response to playmates or family members	76.70
	12	Shares with other children, with support from adult	56.70
	13	Participates in structured small group activities for 10-15 minutes	76.70
	14	Listens and contributes to adult conversation	66.70
	15	Plays briefly with 1-3 children, sharing materials	53.30
	16	Follows rules by imitating actions of other children	80
	17	Uses art or building materials for their own intended purposes	80
	18	Participates in musical games such as the Hokey Pokey or responds to a music beat	63.30

**Note.** The table has been reprinted from User's Guide, Portage Guide Birth to six, for infant/toddler and preschool.

Interpretation of Table No-3 shows, Within the 3-4 years age range, Among the eleven items assessed, nine items (items 9, 11, 12, 13, 14, 15, 16, 17, and 18) demonstrate satisfactory results, with a p-value exceeding 50%. It can be inferred that these items are culturally suitable for Bangladesh. However, the remaining two items (8 and 10) require adaptation due to their difficulty level falling below the researcher's defined target of 50%.



**Table: 4 Shows the difficulty index of the items of social Emotional Development of NPG for 4 to 5 years.**

Age Range	Item No in Activity Card	Description	Difficulty Power (%)
4 to 5 years	10	Sometimes resolves problems with peers, without physical aggression, with adult support	63.30
	11	Manages emotional responded with adult support	70
	12	Willingly tries new experiences	80
	13	Works alone at a task for 15-20 minutes	50
	14	Talks about having friends	80
	15	Talks occasionally own or other's feelings	66.70
	16	Participates in dramatic play with 3-4 children for extended time	63.30
	17	Takes turns and understands the need to share	<b>36.70</b>
	18	Responds to music with more complex movements e.g., Head, shoulders, Knees, and Toes or creates own movements	60
	19	Draws simple recognizable pictures or uses small objects tools to create things, i. e., paint, chalk, play dough, etc.	73.30

**Note.** The table has been reprinted from User's Guide, Portage Guide Birth to six, for infant/toddler and preschool.

Analysis of the findings presented in Table 4 indicates, for items targeting the age group of 4 to 5 years, it was observed that nine out of ten items (10, 11, 12, 13, 14, 15, 16, 18, and 19) demonstrated satisfactory P values, indicating a difficulty power exceeding 50%. These findings suggest that these items are culturally appropriate for Bangladesh. However, one item (17) requires adaptation to align with the cultural context.



**Table: 5 Shows the difficulty index of the items of social Emotional Development of NPG for 4 to 5 years.**

Age Range	Item No in Activity Card	Description	Difficulty Power (%)
5 to 6 Years	10	Negotiates situations with other children with minimal adult support	90
	11	Follows most rules regarding treatments of others, cares of material, and behavior	<b>46.70</b>
	12	Declares rights and needs Don't hit me. You can have a green marker, but I want my purple one	76.70
	13	Speaks positively about self, I like to swim	66.70
	14	States goals for self and carries out activity	93.30
	15	Independently makes friends with other children, e. g., asks to play, help child with work, makes something to share	76.70
	16	Participates in boards or physical games with peers	86.70
	17	Routinely plans and works cooperatively with 3-5 other children toward a common goal	93.30
	18	Draws and builds with more detail and creativity	60
	19	Participates in musical performances with others that include singing, dancing or the use of instruments	90

**Note.** The table has been reprinted from User's Guide, Portage Guide Birth to six, for infant/toddler and preschool.

For items directing the age group of 5 to 6 years, the analysis reveals that nine out of ten items (10, 12, 13, 14, 15, 16, 17, 18, and 19) exhibit satisfactory P values, indicating a difficulty power exceeding 50%. This suggests that these items are culturally suitable for Bangladesh. However, adaptation is recommended for item 11 to align them more closely with the cultural perspective of Bangladesh.



#### 4. Discussion

The study analyzed social and emotional development in children aged 18 to 36 months using the New Portage Guide. It found that out of fourteen items assessed, twelve were appropriate for the cultural and developmental standards in Bangladesh. This means these items fit well with the usual expectations for children's development in this age group in Bangladesh.

This finding is similar to results seen in other countries like Turkey and India, where the Portage Guide had to be changed a bit to fit better with the local cultures (Ender U.M., 2008; Indian Pediatrics Journal, 2000). These examples highlight how important it is to adapt developmental tools to fit different cultural backgrounds.

However, two items, numbers 17 and 19, were too hard for the children, which means they did not match the expected level of difficulty. This could be because of the different ways children are raised, the educational methods used, or other local conditions that shape how children grow and learn. Similar ideas have been discussed by researchers like Roggman et al. (2013) and Bornstein et al. (2012), who noted that cultural factors can influence developmental outcomes.

**For the age group of 3 to 4 years**, nine out of eleven items showed P-values above the threshold, confirming their suitability for the cultural context of Bangladesh. These items include behaviors and skills that are evidently resonating well with Bangladeshi children's developmental stages.

Similar changes were needed in Sri Lanka, where early help for young children was adjusted to better match what children there needed. The study published in the **Sri Lanka Journal of Child Health in 2007** found that "local adaptations of global developmental interventions are crucial to their success" (Perera, H. et al., 2007). It shows that understanding local ways of raising children helps in making these programs work better.

Items 8 (about following adult instructions most of the time) and 10 (about waiting for three to five minutes) were too hard for some children. This could be because the behaviors these items check are not familiar to or expected from children in Bangladesh at this age. Factors like different ways of parenting, what children learn at home and school, and general living conditions can make these tasks challenging for them.

**For children aged 4 to 5 years**, nine of the ten items evaluated from the New Portage Guide matched well with what is expected for children's development at this age in Bangladesh. These items seem to fit well with the natural growth and learning that happen at this stage in a child's life.

In many places, the Portage Guide has been changed to better match what's normal or expected for children in those areas. Lee and Yoo in 2019 mentioned that to really help children, developmental checks need to be made to fit the way children live and learn in their own cultures. This kind of customization was done well in places like Finland, Sweden, and Norway. There, the guide was altered to meet the specific needs and ways of



these countries, showing that adjusting the guide in this way can be very successful (Jarl Formo, 1998).

The need to modify item 17, which deals with taking turns and sharing, could be because these skills might not be as emphasized in early education settings in Bangladesh. Local educational practices or what is typically expected at home might not focus heavily on these areas, leading to lower performance in this item. This difference in focus could be due to the distinct ways in which children are raised and taught in different cultures.

**For children between 5 to 6 years old**, most of the activities matched well with what is expected for children of this age in Bangladesh. Only one activity, which involves following rules about how to treat others and how to handle materials, needed some changes to better fit local expectations.

The need for changes might come from the fact that the challenging activity involves complex behaviors or thinking that are not usually expected from Bangladeshi children at this age. These expectations might be shaped by the way children are typically taught and what is socially expected in their community.

The translation and cultural adaptation of the New Portage Guide's Social Emotional Development section for use in Bangladesh have highlighted significant insights into the applicability and relevance of this early intervention tool within a specific cultural context. The findings from the study reveal a mostly favorable alignment of the Guide's items with the developmental expectations and cultural norms of Bangladeshi children, with a few notable exceptions that require adjustments.

## **5. Recommendations**

Considering constraints in sample size, time, and resources, the researcher was compelled to narrow down the scope of the study. Consequently, the following section outlines the resulting recommendations.

1. To enhance the reliability of the outcomes, a subsequent study with a higher sample size could be conducted to comprehensively assess the impact of the New Portage Guide.
2. Calculating reliability and validity for the Bengali version of the New Portage Guide would enhance the overall assessment process.
3. Given that the Tool for Observation and Planning is an integral part of an assessment and intervention package designed for preschool-level children, it is advisable to implement it across a representative sample in Bangladesh. This approach ensures the inclusion of diverse socio-economic backgrounds, allowing for a comprehensive evaluation of the effectiveness of the New Portage Guide in various socio-economic contexts within the country.
4. Following the adaptation of trial items, certain elements necessitate modification, prompting a subsequent round of recommended trials for further refinement.



## **6. Scope for further research**

This study is based on a limited sample size, and future researchers in this field are encouraged to investigate the validity of the package. Similarly, to assess the reliability of the package in the context of Bangladesh, additional research is recommended. Additionally, exploring the potential adaptation of the package into a pictorial form for use in Bangladesh could be an intriguing avenue for further study.

## **7. Conclusion**

The Portage Project is a pioneering early intervention program designed to help young children with disabilities, ranging from emotional disturbances to physical impairments, from birth to six years old. It provides home-based educational services, making it possible for parents to teach their children in the familiar settings of their own homes. The program is noted for its innovation, particularly how it empowers family members to effectively educate their children and trains any experienced caregiver to become a skilled home visitor quickly. Originally from the US, the Portage model has gained international recognition for its simplicity and effectiveness in different cultural settings. It's recommended that the model be adapted to local languages and cultures to enhance its accessibility and relevance.



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Bridging the Gaps between Special School and Mainstream school Through Early Childhood Development Programme (ECDP), Proyash- A Specialized Institute for Children with Disabilities

Qazi Afroza Sultana<sup>1</sup>

### **Abstract**

The recent global trend of education for the children with special needs are educating them in the regular school system termed as Inclusive Education, the importance of which was based on MGD, one goal Education for All (EFA). In Bangladesh the new education policy focuses on reaching EFA children including disabled. Yet there are gaps in practice. Reasons are lack of knowledge regarding abilities of children with disabilities, lack of early intervention services, effective teaching learning process and the approaches to involve parents as partners to receive maximum benefit.

The Early Childhood Development Programme set up in Proyash (a specialized institute for the children with special needs) in Bangladesh is one of the first such programme for the children with all types of developmental disabilities and for at risk children. The programme aims to provide stimulation for the children in all areas of development to maximize their potential and to teach parents how they can help and train their children. Thirty children aged from 2 to 5 years is accompanied either a parent or a caregiver to the class for five days a week. The components of the programme include: a) training parents to be partners in the process of teaching their children, b) Home visitation, c) operates a toy library- a system of loaning parents' toys, equipment and education materials d) Mainstreaming of some 5 years old into local regular school.

The aim of this paper is to examine aspects of the programme which have proven successful. A description of the programme will be made on the method of including parents in the training of their children through home visit and toy library. Finally, attention will be drawn to mainstream of children into local regular school.

### **1. Introduction**

In the heart of transformation and empowerment, the Early Childhood Development program at Proyash Institute of Special Education shines as a beacon of hope, tirelessly working to bridge the developmental gaps for children with special needs, fostering an inclusive journey from their earliest years. Bangladesh, an agrarian nation with a rapidly growing population of over 173 million, faces significant developmental challenges, particularly among its young population. Nearly half of its populace is under 18 years, with about 15% aged between 0 and 4 years (Worldometer) (World Population Review). Despite

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substantial strides in reducing infant mortality to below 20 per 1,000 live births and increasing life expectancy to approximately 73 years, malnutrition and the risk of disabilities remain prevalent issues impacting the country's youth (Statistics Times). These challenges are exacerbated by the fact that around 40% of the population lives below the poverty line, emphasizing the urgent need for comprehensive early intervention and educational programs to address the vulnerabilities of children at risk of developmental disabilities (DRWGB, 2009). Though Bangladesh is a poor country and has achieved remarkable improvements in terms of school enrollment, reduced significantly in infant mortality rate (it has decreased to below 20%) and increased in life expectancy. However, malnutrition and children who are at risk for disability remains a major area of concern among young children. Poverty, lack of education and poor nutrition continue to be the major risk factors for childhood disability.

The World Report on Disability (WHO, 2011) highlights the global shift towards inclusive education, underscoring the importance of early identification and support for children with disabilities. This aligns with the principles laid out in the UN Convention on the Rights of Persons with Disabilities (UNCRPD), emphasizing the need for inclusive education from an early age.

In Bangladesh, despite policy frameworks aimed at achieving Education for All (EFA), significant gaps remain, particularly for children with disabilities. Studies by the Disability Rights Watch Group Bangladesh (DRWGB, 2009) and Khan et al. (2006) point to systemic barriers that prevent effective implementation of inclusive practices.

The limited availability of early intervention services, as outlined by JICA (2002) and reflected in the Proyash model, highlights the critical need for accessible educational and developmental services for young children.

Effective parental involvement in ECD programs is crucial for enhancing child development outcomes. The Proyash model's use of a toy library and home visits as engagement tools aligns with global best practices that advocate for parental training and involvement in early learning (Portage Guide to Early Education).

Research by ActionAid Bangladesh (1996) supports the premise that parents who are actively engaged in their children's education can significantly influence their developmental paths, a key aspect of the ECD program at Proyash.

The success of ECD programs in facilitating the transition of children with disabilities into mainstream education is documented in various studies. The early stimulation programs at Proyash, which aim to bridge the gap to regular schooling, demonstrate potential benefits highlighted in the literature on early intervention (Khan et al., 2006).

### **1.1 The scenario of disabilities in Bangladesh**

Recent studies, including those by the World Health Organization (WHO, 2018) and the Bangladesh Bureau of Statistics in their latest census (BBS, 2021), indicate a significant underestimation in previous surveys regarding the prevalence of disabilities in Bangladesh,



now estimated to be about 16% of the population. This adjustment reflects factors such as aging, chronic health issues, and enhanced diagnostic practices. Research trends show a shift towards recognizing neurodevelopmental disorders like autism spectrum disorder and attention deficit hyperactivity disorder (ADHD) among children, along with traditional cognitive and speech disabilities (Islam and Biswas, 2020). The link between disability and socioeconomic factors such as poverty, malnutrition, and limited healthcare access is well-documented, with UNICEF (2019) emphasizing that children from lower socioeconomic backgrounds are disproportionately impacted, a situation worsened by inadequate health services. Moreover, local NGOs and educational experts (e.g., Ahmed et al., 2022) highlight ongoing challenges in inclusive education, citing issues like insufficient infrastructure, a shortage of trained personnel, and societal stigma that obstruct the effective integration of children with disabilities into mainstream schools. Nevertheless, NGOs, in partnership with international bodies, are making strides in promoting disability rights and services. Notable initiatives by organizations such as BRAC and Handicap International are focusing on community-based rehabilitation and inclusive education to enhance their reach and impact in the region (BRAC, 2021).

### **1.2 Pre- and Primary Education of the children with disabilities (CWD's)**

Primary education of children starts from the age of six (The National Education Policy 2010). Children begin to learn where they enter formal schooling. Experts agree that young children learn at a rapid pace during the first five years their lives. They need continuous and intense learning from the moment of birth.

It has been estimated 1.6 million children with disabilities within the primary school going age, among them a vast majority of CWD's never attend school, a few get opportunities to enroll in Special and integrated education program, only 4% of CWD's Who do attend mainstream schools soon drop out because of unfriendly attitude, environment and traditional method of teaching and learning strategies. To address the diverse the learning needs of CWD's, lack of ideas acts as a barrier to include them in mainstream classroom.

### **1.3 Current scenario of the Pre- school age children**

Govt. of Bangladesh has taken initiatives in Education policy 2010 to start pre-school program for children in the early years of age starting from 4 to 5 years and 5 to 6 years. Govt. has parenting a program at a small scale from 2011. Bangladesh has been targeting "Education for All" by the year 2015 and a large number of organizations working in the field of education to promote enrollment, literacy and primary education, but yet the ECD is limited in the formal public education. There are few Govt. and non Govt. organizations who are working for children under 5 years of age which is termed as **pre-school** but still the diverse populations of children with disabilities are excluded from education denying their rights of education.

ECD is most important needs of the country in the current age and one of the most valuable investments for the children with disabilities also that are rarely viewed in economic development.



#### **1.4 Existing law and Policies**

The education of CWD's is under purview of Ministry of Social Welfare, which does not take part to achieve the universal goal. Now, the seven ministries are working collaboratively to ensure education and provide health and additional support service to all the people with disabilities. As the Govt. of Bangladesh has signed and has ratified the UNCRPD and convention on the right of the child to create a barrier free learning environment for CWD's. Bangladesh is in process of drafting a law in light of UNCRPD.

#### **1.5 Early Diagnosis, awareness and Gaps between Health and Schooling**

National health policy has added the component of early detection and early intervention of young children for preventing disability. At the Govt. level a limited number of hospitals and organizations are involved in early detection, But there are no or limited early intervention services available for children with disabilities below five years. These children are deprived of any sort of stimulation at the early age, so that, when they go to school at six; they lag behind in the cognitive and moral development and develop some atypical behavior from their family and environment. ECD project research has proven that, children who participated in well-conceived ECD programmes tend to be more successful in later school and that is same for CWD's.

#### **1.6 Introducing ECD by Proyash**

The time before starting school is a key formative period in the life of a young disable child. Reducing the barriers and bridging the gaps from early detection to regular school for preventing disabilities, "Proyash" has established early stimulation program for young children below 5 years of age since 2010. Within a very short period of initiating ECD, Proyash has realized the necessity of early intervention. Early assistance is required for nurturing, caring and training for children with delayed development and disability and who are nurtured and stimulated during these years are substantially well prepared for formal learning with the passage of growth.

#### **1.7 Rationale for the Study**

This study focuses on the Early Childhood Development Programme (ECDP) at Proyash, a significant initiative for children with disabilities in Bangladesh. The need for such a study is critical due to several reasons:

Despite efforts, children with disabilities often face barriers in accessing inclusive education. This study explores how Proyash's ECDP addresses these challenges by integrating these children into mainstream schools.

Parents play a crucial role in the development and education of their children, especially those with special needs. This research examines the impact of involving parents directly in the educational process, which is a core component of the Proyash program.

Early intervention is vital for children with developmental disabilities to achieve their full potential. The program's effectiveness in providing early support through structured



activities, home visits, and a toy library is assessed to understand how these interventions contribute to the children's development.

Understanding the outcomes of such programs can influence policy and practice, promoting more effective strategies for supporting children with disabilities across the country.

### **1.8 Aim of the paper**

The aim of this paper is to find out the effectiveness and success of the program with the participation of parents in teaching process and home visit therefore, mainstreaming is possible for children with special needs into regular school.

### **1.9 Research Objectives**

- To evaluate parental participation in the teaching-learning process.
- To assess the effect of home visits on training children with disabilities.
- To investigate the enrollment process of students with special needs into mainstream schools

### **1.10 Research Questions**

- How Parent's participated in teaching- learning process?
- How home visit worked successful to train children with disabilities at home?
- How it was possible to enroll the special need students into local mainstreaming school?

## **2. Methodology**

This study employed a qualitative research design to explore the effectiveness of the Early Childhood Development Programme at Proyash. The research aimed to evaluate specific aspects of the program, such as parent involvement, home visitation, and mainstreaming of children with disabilities into local regular schools. The study involved 38 children aged 2 to 5 years, who have various developmental disabilities and are considered at risk. Each child participated along with a parent or caregiver. Structured observations were conducted during the program sessions to assess the interaction between children, parents, and teachers, as well as the effectiveness of the activities in promoting development. Semi-structured interviews were conducted with parents and teachers to gather detailed information about their experiences and perceptions of the program's impact on the children's development. Program documentation, including planning materials, session notes, and progress reports, were reviewed to understand the structure and content of the ECDP.

## **3. Program description and study of program success**

### **The programme for everyday session**

### **Type of programmes Areas of Development worked on**



**Table Activities, Individual work** incorporating language activities e. g. play with puzzles, shape sorters, number games, letter games, writing practice, pre-reading and reading exercises. Eye hand co-ordination, Cognitive Skills, Speech Development

**Break Time-** Drink and Toilet    Social Development and Self-help Skills

**Gross Motor Activities-e.g.** running, jumping, walking games, throwing balls, catching, kicking balls etc.    Physical Development and Social Development

### **Art & Craft**

Painting, crayoning, cutting, gluing, play with play dough, sand & water play. Eye hand co-ordination, Social Development and Concept Development.

**Singing** Social Development and Speech Development

Child's developmental assessment is completed with the parents assistance. This provides information about the current level of child's present skills and helps to plan a teaching programme to consolidate existing skills and develop new skills.

### **Grouping Children**

Children are grouped by age and ability which is beneficial for the children and also for teacher in conducting group activities. Specifically successful component of the programme include:

- Parents are involved as a partners in the process of teaching
- Home Visitation
- Integration of some four and five years olds into local Kindergartens

### **Classroom training**

ECDP has five hours session for five days a week with 38 students. During this time the children participated in a variety of activities designed to stimulate each area of the development.

The curriculum of this group of children includes self-help activities, gross motor activities, communication, socialization and cognitive skills. For each individual child a programme is set for a term of four months, divided in parts. To make the training effective parents are included as a team member.

### **Parents as Partners**

Each child is accompanied to the class by either a parent or a caregiver. Class sizes are restricted to 6 children so that, the teacher is able to give each child some individual attention as well as working with them in a group.

### **Parents' participation in the training of their children**

The Teachers take the lead and demonstrate what to do and give ideas, but opportunities are then given for parents to continue and extend teaching aims with their child. Practice their



teaching skills, parents can learn under the teacher's supervision and become more confident and knowledgeable for when they teach their child at home.

Parents are involved for doing homework assignment. The idea is that each day one of the parents will spend at least 10 – 15 minutes working on the homework task with the child. Generally the task is the continuation and extension of skills that the child has started to learn in the classroom.

### **Using instruction booklet for parents training**

The instruction booklist has been developed for training different skills like – motor, speech and language, cognitive and socialization like daily living activities of feeding, dressing, toileting, household, as well as community living activities. The ideas and pictures have been taken from “WHO, training manual” and from “Portage Guide to Early Education”.

### **Toy Library**

Early Intervention class operates a Toy Library system, whereby parents are loaned one toy or piece of educational equipment each week. Some of parents do not have resources to purchase the necessary education equipment to teach their child particular skills. It gives parents ideas of what toys are needed and useful for their child. Parents also share toys to other students who come from poor families as they do not have stimulating materials.

The children of those parents, who take the homework assignment seriously, show significantly positive changes in their development. When a parent is conscientiously working with their child on a regular basis at home, the changes in the child are obvious.

### **Home visitation**

A home visit can often highlight problems in the home teaching program, that the teacher may not have fully appreciated before. Once a week on Wednesday one teacher visit 2/3 students home to support parents for making home plan. There is not sufficient time to make regular visit to all the children so it is done by priority basis:

- Children whose parents are having a difficult time
- Children whose progress appear to have plateaued
- Children whose attendance is irregular

Experience confirms that, parents gain a stronger feeling that they are not alone in training their child. Teachers also get benefited, because teacher gain a better understanding of the child and his family background, which enables him/her to be more sensitive when tailoring teaching programs or expectation of the child and his parents.

### **Mainstreaming the children into local regular school**

Parents are encouraged by the teachers to enroll their child into local Kindergartens. A small minority of parents had already taken this step, but the reaction of the majority of parents was “how it can be possible”. The teachers encourage parents to see those 6



children who are already enrolled in regular school as they have received extra educational stimulation by mixing with their non-disabled peers.

**The process of mainstreaming was,** sending children with disabilities to regular kindergarten once a week for 2 hours, then gradually twice and thrice a week and spend time longer period to adapt the situation in regular schools. **At present,** four and five years olds who attend the ECD programme attending local kindergarten 3 – 4 days week through trial basis.

#### **4. Outcome and Recommendation**

This paper gives an account of the early intervention program that is being successfully implemented at ECD program. The toy library system is useful to assist parents in teaching their children at home and home visit is highlighted to adapt their child in family environment.

The model of ECD has proven their effectiveness and three critical areas are identified that need to be developed

1. Implementing parents involvement in teaching-learning process.
2. Linking between ECD programme (Special school) and regular school, so children with disabilities can move into regular school.
3. Starting early intervention programme as early as possible.

#### **5. Scope for Further Research**

For further research, there are several promising avenues to explore within the framework of the Early Childhood Development (ECD) program.

Future studies could focus on quantifying the success rate of including children with disabilities from the ECDP into mainstream schools over a defined period. This would involve tracking the transition of these children and the sustainability of their placement in regular classrooms.

A longitudinal study could be conducted to assess the long-term academic and social outcomes of children with disabilities who have been mainstreamed from the ECDP into regular schools. This research could help identify factors that contribute to sustained success or recurring challenges within mainstream settings.

Another area for further research could involve a detailed analysis of the impact of parental involvement on the developmental outcomes of children in the ECDP. This could include measuring the effectiveness of different types of parental support activities, such as home visits and the use of the toy library.

Investigating the barriers faced by children with disabilities in transitioning to mainstream schools could provide critical insights. This research could focus on both systemic barriers (like policy or infrastructure limitations) and interpersonal challenges (such as peer relationships and teacher preparedness).



## 6. Conclusion

The Early Childhood Development Program (ECDP) at Proyash has shown great promise in helping children with disabilities in Bangladesh. The program uses methods like involving parents, home visits, and a toy library to improve children's development and get them ready for regular school. It helps children with disabilities join regular schools early, which can be a model for other places too. However, the program still needs to improve in areas like training for parents, connecting special and regular schools better, and making early help more available. By keeping up the involvement of parents and making these improvements, ECDP can lead the way in making education fairer for all children with disabilities in Bangladesh and beyond. ECD was the inaugural program in the field of Early Childhood Development (ECD) for children with special needs. Currently, this program at Proyash is successful, serving over a hundred students across three shifts. Additionally, many students have successfully transitioned into mainstream schools, which is a highly regarded aspect of this program.

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## Biography

**Qazi Afroza Sultana** is a distinguished expert in special and inclusive education, currently serving as Deputy Director and Vice Principal at Proyash Institute of Special Education in Dhaka. With over three decades of experience, she has been instrumental in developing innovative curricula, leading teacher training programs, and creating inclusive learning environments for children with disabilities. She holds a Master of Science in Psychology and Special Education from Dhaka University, and her extensive training includes the “Model of Intervention for Children and Youth with Autism” at the University of North Carolina, USA. Ms. Sultana has published research co-author in prestigious journals like the Journal of Tropical Pediatrics and the Asia and Pacific Journal on Disability, cementing her role as a thought leader in her field. Additionally, she has collaborated with the OECD and the World Bank to train psychologists and professionals in Ethiopia, and has significantly contributed to shaping national policies on autism and neurodevelopmental disorders through partnerships with government agencies and educational institutions in Bangladesh.









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