From Communication to Communion

Exploring Arts Based Therapy for non verbal children in the Autism Spectrum

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A project report in fulfillment of ABT course 2014 prepared by Achuta Nadapana Roll no: 210

Study conducted at Snehadhara Foundation, J.P.Nagar, Bangalore

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We have more possibilities available in each moment than we realize.

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1.1 ABSTRACT

The study consisted of applying Arts Based Therapy (ABT) in an intensive one on one basis to a largely homogeneous group of five children. One child had dropped out after the pilot project. Four of the male children are in the Autism Spectrum Disorder (ASD) and one female child was diagnosed with severe Mental Retardation (MR). Three of the children are verbal of which two have oromotor challenges and the remaining two are totally non verbal.

The Action Research Project was conducted over a period of 3 months (June, July and August). The sessions were on a one-on-one basis of 30 minutes duration. All the artistic skills of Body, Rhythm, Voice, Visual art, Games and Exercises were applied to work on the Therapeutic Domains (TDs) and Therapeutic Goals (TG's) identified during the Pilot Project.

The ABT interventions showed positive outcomes not only in TGs in focus for this study i.e. Attention and vocalization, but in other domains as well, especially Body, Expression and Cognition. ABT provides for both quantitative and qualitative evaluations. This is crucial when evaluating a varied population with special needs as often the shifts are more subtle than apparent in a shorter period if study. It is imperative that this dynamic, innovative artistic environment is available to the population till tangible results are obtained in the identified TDs and TGs.

<u>From Communication to Communion</u>: The unique aspect of ABT is its grounding in spiritual and mindfulness practices. Creating intent and letting the energies of the universe direct the efforts of the facilitator and the children. ABT is not limited to imparting skills to speak, write or use other mediums, but creates a space to have shared participation in a mental and spiritual experience.

We can conclude that ABT is an effective holistic intervention for children with special needs to improve attention, vocalization in both verbal and non-verbal children.

Section 2: INTRODUCTION

2.1 THE LARGER PROBLEM

The population for this project largely consists of children with Autism (only one child is MR) who are non-verbal with minimal use of voice and speech.

Impaired social interaction, *problems with verbal and nonverbal communication*, and unusual or severely limited activities and interests characterize this largely homogeneous group.

Autism is a neurological disorder that constrains information processing. Imaging studies have suggested that functional connectivity between brain regions breaks down during complex problem solving, social and language tasks. (*Minshew, Sweeney, Bauman, & Web, (2005)*).

As on 24 March 2014, about 1 in 68 children has been identified with ASD according to estimates from Center for Disease Control and Prevention's (CDC), Autism and Developmental Disabilities Monitoring (ADDM) Network.

Voice, Speech and Language Development in children with ASD

One of the most common questions parents ask is: Will my child develop speech?

An analysis of Autism Research Institute's data involving 30,145 cases indicated that 9% never develop speech. Of those who develop speech, 43% begin to talk by the end of their first year, 35% begin to talk sometime between their first and second year, and 22% begin to talk in their third year and after. A smaller survey conducted by James B. Adams, Ph.D., Arizona State University, Tempe, Arizona, found that only 12% were totally non-verbal by age 5. So, with appropriate interventions, there is reason to hope that children with autism can learn to talk, at least to some extent, and non-verbal older children and adults can sometimes learn to talk or communicate in other ways.

Arts, is the language of the soul. ABT uses various elements and methods from the three art forms of music, drama and visual art to stimulate the child without any stress, helping the brain to create new neural pathways to process complex tasks like speech even in older children. ABT is grounded in the understanding of the human nature and potential (both spiritual and science based). It can be used to address specific therapeutic goals (Attention, Vocalization, Basic Vocabulary and Symbol recognition) for this group of children.

2.2 LITERATURE REVIEW OF ALL ART BASED THERAPIES

ABT encompassing music, drama, play, dance, movement and visual art is a form of expressive therapy. The arts offer accessible, nonverbal, and universal tools for facilitating mind-body healing, addressing specific therapeutic outcomes for children in the Autism spectrum. There is growing evidence which confirms that experiencing art both passively and actively can improve motor, attention, expression, cognitive and social performance. When children find an art form that sustains their interest, the subsequent rewiring and strengthening of their brains' networks can improve their abilities across domains.

Decades of research done by thousands of neuroscientists has shown that the brain can change itself. *Brain plasticity* is the ability of the brain and nervous system to change structurally and functionally in response to experience. When a child is made to try hard to reach developmental milestones they are not ready to do successfully, it only deepens the neural pathways of the child's limitations.

ABT's approach is fluid, friendly and fun; the children are motivated to explore, while simultaneously challenging and embracing the limitations of the child, aimed at achieving definite therapeutic goals. Here is a brief summary of the various art forms successfully being used to address communication and other challenges in children with ASD.

Drama & Play Therapy: As per Caplan, Kerri (2006), Drama therapy was a successful intervention for children with autism not only in the areas of cognitive, behavioral and language skills but also significantly bridged gap with improvements in areas of emotional expression and social interaction which could not be achieved with the aid of Intensive Behavioral Intervention (IBI). Jennings, Sue Dr., Pioneering Play and Drama Therapist who developed the assessment tools EPR (Embodiment-Projection-Role) and NDP (Neuro Dramatic Play) states that with persistence children with ASD benefit with the sensory, rhythmic and dramatic (interactive) playing.

Music Therapy: A study by <u>Groß</u>, Ulrike and <u>Ostermann</u> (2010) suggests that music therapy may have a measurable effect on the speech development of children through the treatment's interactions with fundamental aspects of speech development, including the ability to form and maintain relationships and prosodic abilities. Thus, music therapy may provide a basic and supportive therapy for children with delayed speech development. This is supported by the fact that music and rules of language rely on the same brain system. Memorized information in language and memorized melodies in music use the same brain system, hence the impact of music on memory (Automusic, WCCLF, 2008).

Dance and Movement Therapy: We all speak the language of nonverbal whether on the Autism spectrum or not. The only universal language is the language that is communicated through movement through our bodies. Movement is life, movement helps the brain grow and form. In turn, it is the brain that organizes all movement. Devereaux, Christina Dr. (2014), states that attuning, reflecting, and expanding nonverbal expressions can help those with autism to improve socialization and communication, build body awareness, and also directly affect motor deficits.

Visual Art Therapy: Visual Art in the form of books, pictures, images, collages, face painting is often used as a visual form of communication for children with ASD. The process of creating art rather than understanding or analyzing art by children with Autism provides a platform for expression (Martin, Nicole 2011). The highlighted treatment goals include Symbol formation & communication (Fox 1998), socialization (Noble 2001) early intervention (Martin 2009) and sensory regulation (Scanlon1993).

2.3 <u>HYPOTHESIS</u>

Arts Based Therapy (ABT) can significantly improve attention and enhance vocalization in children with Autism Spectrum Disorder (ASD) and developmental delays.

SECTION 3: METHODS

3.1 ELIGIBITY CRITERIA FOR PARTICIPANTS

The ABT study group was formed with children with Autism (only one child is MR) who demonstrate minimal and irrelevant use of language.

The main criterion for selecting these children is their inability to vocalize and have speech. All the children in the group attempt to speak or gesture when prompted to with varying degrees of challenge and success. All of them exhibit good receptive language but are challenged with expression through language.

The class size is usually 7-9; of this the ABT group size is 5. The average age of the group is 10 years; the oldest is 15 years (2 children) and the youngest is 5 years. All of the children have been enrolled for the full day programme with Snehadhara Foundation since April 2013. Four of the children (Karthik, Krishna, Sanjeev, Naina), have been together as a group for over 6 months prior to the beginning of this project. Prashant was present during the pilot study but did not continue after the summer break. Ohas was absent during the pilot as his grandfather was unwell.

All of them are fairly agile and do not have any physical challenges. The group is toilet trained, can follow verbal instructions and respond to routine activities of daily living like personal hygiene, identifying and carrying their personal belongings and independently eating their meals. They even respond to tasks like spreading a banner, bringing their work table and even cleaning up with a mop cloth, except for two of the children who need assistance in most these activities. The other more recurring and common issues of the group are attention and inability to comprehend and follow group dynamics and group instructions. They respond only when the communication is clearly directed to them on a one on one basis. All the children engage in self stimulating/soothing sensory behaviours. The group has immense potential for higher levels of cognition but is currently very limited due to lack of attention and sensory behaviours.

Also, due to the lack of means for an appropriate communication, the children engage in injurious behaviours like pinching and biting others or biting the back of their own hands, crying and throwing things when frustrated or in unease.

Demographics of the group:

AGE	5 to 15 years
GENDER	4 males , 1 female
BACKGROUND	All are from comfortable middle class homes, except one who is from lower middle class home
OTHER RELEVANT INFORMATION	 The children's mother tongue is either Kannada, Tamil or Telugu All of them have a good receptive language They follow better when spoken to in their mother tongue but also follow English single word instructions fairly well

3.2 LOGISTICS

Location: Snehadhara Foundation, J P Nagar, Bangalore

Settings: The room is 10" X 6", drinking water is available, toilet is located on the next floor, and a wash basin is available outside the class.

Start date: 02 Jun 2014 **End Date**: 28 Aug 2014

Duration: One on one session, 14 half hour sessions with each client (Total 5 clients x = 14 = 72 half hour sessions in 3 months)

Client	Schedule		No. of sessions & date*		
	Day	Time	June (5)	July (5)	August (4)
Karthik	Every Monday & Friday	11.50am 12.20pm & 10.30am -11am	02,09,16,23,27	04,07,14,21,28,	04,11,18,25
Krishna	Every Tuesday & Monday	11.50am -12.20pm & 10.30am -11am	02,03,10,17,24	01,08,15,21,22	05,12,19,26
Naina	Every Wednesday & Tuesday	11.50am -12.20pm & 10.30am -11am	04,10,11,18,25	02,08,09,16,23	06,13,20,27
Ohas	Every Thursday & Wednesday	11.50am -12.20pm & 10.30am -11am	04,05,12,19,26	03,08,10,17,24	07,14,21,28
Sanjeev	Every Friday & Thursday	11.50am -12.20pm & 10.30 - 11am	05,06,13,20,27	04,10,11,18,25	01,22,21,28

* Was subject to rescheduling as per the attendance of the child

3.3 DATA SOURCES & DATA COLLECTION PROTOCOLS

The data collection protocols of Observations Formats, Behaviour Rating Scales for Children with Special Needs (CWSN) created by World Centre for Creating Learning Foundation (WCCLF), Parent Feedback, Stimulated Tasks and ABT Tools will be used to track the changes in group.

Data collection Formats: (Appendix A)

The data collection formats will be used to assess the progress of the identified TGs for the study group/client.

- 1. Appendix A1: WCCLF Behaviour Rating Scale for CWSN
- 2. Appendix A2: Observation chart for Oro Motor & Vocalization
- 3. **Appendix A3**: Observation chart Attention & Cognition, Speech & Language (Receptive & Expressive)
- 4. Appendix A4: Parent questionnaire for Speech & Language

Data Collection Format	Name of the child	Frequency	Date of Administration
A1 Behaviour Rating Scale	For all the 5 children	Twice – Pre & Post Action Research	First week of June & Last week of August
A2 Observation Chart	For all the 5 children	Thrice – Once every 5 sessions	First week of June, Second week of July, Last week of August
A3 Observation Chart	For all the 5 children	Thrice – Once every 5 sessions	First week of June, Second week of July, Last week of August
A4 Parent Questionnaire	For all the 5 children	Twice – Pre & Post Action Research	First week of June & First week of September

Simulated Tasks: (Appendix B)

In the absence of appropriate or simple standardized tests for the TGs identified for the study group, the following minimal Stimulated Tasks were created to assess progress in TGs like Attention, Cognition, Vocalization and Narrative Capability.

Data Collection Format	Name of the child	Frequency	Date of Administration
B Stimulated Tasks	For all the 5 children	Twice – Pre & Post Action Research	First week of June & Last week of August

ABT Assessment Tools: (Appendix C)

- 1. **Appendix C1** Observation format for drumming
- 2. Appendix C2 Session Record Sheet (SRS) Summary
- 3. Comparisons of Drawings and Paintings
- 4. Drawings before and after a drums circle
- 5. Video Documentation

ABT Assessment Tool	Name of the Child	Frequency	Date of administration
Observation format for drumming	For all 5 children	Twice – Pre & Post	Second week of June and Third week of August
Comparisons of drawings & paintings	For all 5 children	Twice – Pre & Post Action Research	Second week of June and First week of September
Video Documentation	For all 5 children	Five session recordings per child	Twice a week in June, July, August

3.4 METHODS USED

The ABT sessions were planned keeping the TDs and TGs identified for each client in focus. 15 simple one on one session plans were created with activities incorporating various artistic skills that the children would be able to attempt as well as be a challenge to them. The same session plans were used for all the five children allowing for small variations and improvisations depending on the participative abilities of the child. Vocalization was integrated even into sessions of visual arts, games & exercises. (Refer to Appendix C2 for SRS summary).

Each child had their own artistic preferences. Karthik enjoyed the session with hand puppets, movement and imitation, Krishna was engrossed with marble art and play with coloured dough, Naina loved blowing and painting activities. Ohas enjoyed play, exercises, painting and blowing activities while Sanjeev was at his participative best while drumming.

Observations, session leads were recorded on the Post Session Notes of the SRS for qualitative analysis. Separate sessions were conducted to record the observations for formats A2, A3 and simulated tasks (B). ABT tools like Drumming and Comparison of drawings and paintings were a part of the project sessions. Video recordings were done by the facilitator as well as by colleagues from the centre.

SECTION 4: RESULTS (OUTCOME)

4.1 RESULTS SUMMARY (RS)

It is observed that there is an overall shift towards greater capabilities across other domains in each of the children along with the TGs identified for the study. This trend is consistently visible across the various tools of evaluation i.e., data collected through observation formats, stimulated tasks and using ABT Tools (**Refer graph RSI, RSII, RSIII respectively**). There was no control group for this study.

- The focus of the study was to improve Attention and Vocalization and the line graph **RS I** clearly indicates the shifts in the clients through the three month period.
- The overall shift across domains though very small is still significant. (refer graph RS I, dark blue line A1 WCCLF Behaviour rating scale and RS VII)
- It is observed that vocalization is not codependent on oromotor abilities. Karthik and Naina are verbal but have limited oromotor skills; this primarily impairs their clarity of speech. Krishna has better oromotor functionality but is non verbal. Ohas has good oromotor and vocalization abilities; but is yet not ready to use these abilities for articulation and communication. Sanjeev has extremely limited oromotor abilities and is non verbal. (Refer graphs RS IV(a) Oromotor, RS IV(b) Vocalization)
- Greater abilities in vocalization significantly impact learning- cognition and language. Ohas comes as an exception when co-relating vocalization and cognition in this study. This is because he does not clearly demonstrate his abilities for accurate scoring during a session or during formal observation sessions. It has been observed during random informal times and also from the parents feedback that he can read, identify pictures, alphabets and sing songs. (Refer graphs RS V(a) Attention, RS V(b) Cognition, RS V(c) Speech & Language)
- Parents' scores were higher than the ABT practitioner before the project but the post project scores are almost similar with an upward shift. (**Refer graphs RS I and RS VI**). The facilitators' rating for the non verbal children is higher than the parents'.
- The upward shift seen in the simulated tasks graph (**RS II**) is due to improved attention and more appropriate responses through gesture and sounds.
- Drumming helped to improve attention and motor abilities in the children (**RSIII**).

- ABT one on one session's has been the most effective approach for the children who score very low on attention. With improved attention and physical alertness they are more ready for group sessions.(Refer graph RS VII- WCCLF Rating scale - Group shifts)
- A shift that is not tangible and hence not represented by a graph is the sense of <u>connection and feeling</u> established with the children through the unencumbered process of ABT. It is in this space all the possibilities unfold, though ever very small but forever significant. The children are happier, more receptive, spontaneous, and reciprocal. This acknowledgement from the children is immensely joyful.



RS I





RS III























RS VI





RS VII

The graph **RS VII** indicates the average score of all the five clients in each of the domains obtained using the WCCLF Behaviour Rating Scale (CWSN). The graph shows a negative dip in the domains of cognition and narrative capability post action research project.

As the pre project rating was based on the observations made during the 15 pilot group sessions, many of the aspects were rated erroneously high. During the 3 month project the abilities of the children were observed more closely and the post project scores were recorded more accurately. Similarly narrative capability was erroneously rated high for Karthik based on his apparent speech abilities. This caused the dip in the group average; otherwise the rest of the clients have made positive progress in this domain. *Hence the dip is due to the error in data collection and not due to ABT intervention protocols.*

4.2 <u>RESULTS DETAILED</u>

4.2.1a KARTHIK R DIXIT

Male, DOB: 06 MAY 1998, 15 Years 11 months (as on 01 May' 14)

Family Background

Karthik was diagnosed with ASD at the age 3 years. He is from a middle class family and lives with his parents and sister who is 21 years old.

Academic & Rehab Background

He has undergone "Early Intervention programme" at Spastic Society for nearly 2 years under Dr. Nalini Menon (from the age of 4 to 6 years). As reading did not happen, "sight words" were introduced and also "PECS" was tried mainly to improve communication. He has speech and can use "functional words" (Kannada & English) to ask for things with a little prompting. From 2006 till March 2013 attended Rehab Programme at Shristi Special Academy. He enrolled in Snehadhara Foundation on 21 March 2013.

Medical Background

Karthik was administered many medications for aggressive behaviour and lately for seizures. All of the medicines have now been stopped due to adverse effects.

Child's strengths:

- Keen observer. Imitates simple body movements, sequential and fine motor movements, but the range of movement is limited.
- Sharp listener & learns quickly and hums songs and enjoys doing the same.
- Can match colour cards, sort, identify "What comes after..." puzzles, assemble nuts and bolts to a board, identify letters, and match sight words with prompts.

Areas that need focus:

- Reading/ writing as parents aspire him to write the OBE A level.
- Short term obsession with objects; he wouldn't easily part with them. Continuously fiddles and breaks them.
- Speech is not clear and loud. Uses speech only on prompting.

- When anxious or agitated cries and throws things high up in the air, breaks objects in the vicinity. Constantly fiddles with the stitches in the T-shirt and tears it.
- Loud or incoherent sounds disturb him immensely.

Creation:

Main focus for Karthik would be to assist him in articulating his needs, choices and discomforts. {NARRATIVE CAPABILITY (*TG- Basic Vocabulary, Simple Sentences*)} The second area of focus will be develop sustained ATTENTION and work on COGNITION (*TG - Symbol Recognition & Memory for Information/Instruction*) in line of preparation for OBE –A level exam.

The intent for Karthik is to help him feel comfortable and accepted. Improve use of speech & clarity to enhance meaningful communication.

4.2.1b Inferences and Domain comparisons

Karthik has improved on his imitation skills. He pays attention and maintains good eye contact but only for short spans. He likes to engage with other children. He enjoys Krishna boxing on his tummy and asks for more through gestures when Krishna stops. He takes the responsibility of making Naina move to another location.

The pre project ratings for cognition and narrative capability were erroneously rated on the higher side due to his language abilities. While closely working with him during the project revealed that he only repeats what is said and has no true cognition of the aspect. Though Karthik engages with artistic media; he is very repetitive (drawing in swirling circles, simple beat on the drums, humming the same song) and it is would to useful to focus on extending his abilities in music towards greater expression.

Karthik's vocalization has improved and he is able to repeat every word said. Speech is still not very clear and spontaneous. This is reflected in his lower oromotor scores.

With improved attention and vocalization he has shown marked positive shifts in cognition and language.







4.2.1c Comparison of drawings and paintings –Karthik











4.2.2a KRISHNA E

Male, DOB: 14 SEP 2006, 7 Years 7 months (as on 01 May' 14)

Family Background

Krishna lives with his parents and sister Hasini who is 5 years old. Father is an electrician and mother is a housewife. He loves to play with his sister and is usually non aggressive towards her.

Academic & Rehab Background

He was identified as having 'Autism' at the age of 2 at CMC, Vellore to check for any speech and hearing impairment. At about 7-8 he began to lose speech and stopped responding when his name was called, though he would respond to other sounds very well. From 2009 to Dec 2012 he underwent regular speech therapy at "All India Institute of Speech & Hearing" Mysore. From Dec 2012 onward he is with Snehadhara Foundation.

Medical Background

He has not been on any medications except for Ayurvedic and Homeo medicines occasionally.

Child's strengths:

- He is a very cheerful and jolly boy and his presence brings a smile on every one's face.
- Would not pay attention to any structured activity but when left to his own he would explore play material like puzzles and books.
- Understands communication, though non verbal he responds appropriately with gestures and sounds. Very good at imitation and physically very active and agile.

Areas that need focus:

• He tends to pinch when he is not understood or when stopped from his self simulating interests (play with ropes, threads, dupattas, and sticks) or when hungry.

Creation:

Main focus for Krishna would be NARRATIVE CAPABILITY (*TG- Vocalization*, *Basic Vocabulary*), and the second area of focus would be to improve ATTENTION & COGNITION (*TG - Symbol Recognition & Memory for Information/Instruction*)

The intent for Krishna is to channelize his abundant energies into creative forms of verbal expression/ communication and expand his learning and exploration.

4.2.2b Inferences and Domain comparisons

Krishna is physically very alert, walks and runs fast. His weight limits his flexibility as he is unable to bend; stretch his legs straight while sitting. He is very afraid to jump off heights and from lower heights steps down rather than jump.

His group interaction is limited to holding hands of his peers and at times boxing on Karthik's tummy. He enjoys artistic media like paints, ropes, ribbons, paper, sand, clay mainly for sensory needs rather than for expression. He is able to clearly express himself through sounds and gestures.

He displays almost normal oromotor abilities and he is able to vocalize a few vowels and consonants. He at times tries to repeat words only on prompting but is able to sound only one syllable like bye, pa, ba.

His attention and sitting tolerance have improved leading to similar shifts in cognition and language. He maintains excellent eye contact while doing the activities.









4.2.2c Comparison of drawings and paintings - Krishna

4.2.3a NAINA RODRIGUES

Female, DOB: 20 JAN 1999, 15 Years 3 months (as on 01 May' 14)

Family Background

Naina is the only child in the family and her parents are very aware and work in the social development field. Naina's uncle and extended family live in Bangalore.

Academic & Rehab Background

Naina has a diagnosis of Mental Retardation. Before joining Snehadhara Foundation in 2012, she was in a special school called FAME in Bangalore.

Medical Background

Naina has chronic Eczema which developed at the age of 6 months. She takes homeopathy for her skin and other developmental problems.

Special Care Instructions (if any):

She tends to get sleepy/dull and completely unresponsive when not interested. Has difficulty in concentrating on an activity. Eczema causes her to itch and seasonally aggravates. At times she tends to get hyperactive or over excited, though seemingly playful she would get destructive like pulling at the collars, spitting, and pulling hair. During these phases it is difficult to distract her.

Child's strengths:

- She comes alive with music. She would sing and become animated.
- She can identify and say alphabets, numbers, colours, shapes, fruits and vegetables.
- She enjoys working with paints and colours.
- Keeps repeating a few phrases and imitates words heard from facilitators or caregivers (but mostly out of context).

Areas to work upon:

• Lacks energy, interest, attention and is heavily prompt dependent. Her responses are very slow due to drowsiness or she just becomes frozen while doing an activity. Creation:

Main focus for Naina would be BODY (*Physical Alertness*), improved ATTENTION & NARRATIVE CAPABILITY (*TG- Basic Vocabulary, Simple Sentences*). Secondly, as her agility and alertness improve we can work on COGNITION (*TG - Symbol Recognition& Memory for Information/Instruction*). It would be interesting to see if music/rhythm/ melody can improve her attention and help her in her speech, rather than being an obsessive distraction.

<u>The intent for Naina is to enhance her alertness to her surroundings.</u> <u>Improve her physical agility and responses. Work on her ability of speech to</u> <u>enhance meaningful communication.</u>

4.2.3b Inferences and Domain comparisons

Naina has truly surprised us by the intensity of her participation as we moved through the project. Though she takes a while to respond, the energy, the consistency and continuity of her alert presence in the sessions has been amazing.

She has shown significant improvement in physical alertness and agility. She is able to express her needs more clearly using a few words like, paint, brush, sit, write, pencil, etc. in appropriate contexts. Her expressive ability using artistic media is still very repetitive and limited. She continues to enjoy music, singing and dance and responds to instructions better with singing or when spoken in a rhythm. She enjoys drumming when given a fast rhythmic beat. She also vocalizes the rhythm when excited.

Though she is challenged with oromotor abilities she is able to repeat words, identify and label pictures, numbers and alphabets. Her attention and response time has significantly improved.







4.2.3c Comparison of drawings and paintings - Naina









4.2.4a OHAS GANESH

Male, DOB: 13 OCT 2008, 05 Years 6 months (as on 01 May' 14)

Family Background

Ohas's father (B sc) works as a Manager in a private limited company and mother (M Com) is a housewife.

Academic & Rehab Background

2011-12: One year at Roots Montessori School, Jayanagar, Bangalore. August 2011- March 2012: Was given Occupational and Speech Therapy. April 2012 – present: Magic Puddles/ Snehadhara Foundation (stopped all therapies)

Medical Background

Complications during birth, did not cry after he was born. He was in NICU for 4 hours due to lack of oxygen. At 2 years of age he had Febrile seizures (convulsions due to high fever) after which he had a regression.

Special Care Instructions (if any):

- When he gets excited, he does not realize that he may fall or hit himself against a wall or object. He tends to throw himself all around. He needs to be under constant watch.
- While on road, he tends to run towards the road not realizing the danger of moving traffic. His hands need to be held at all times.

Child's strengths:

- Good ear for music and picks up songs and sings the complete song perfectly unnoticed.
- Able to repeat/say words at his own pleasure.
- Good with gadgets; understands technology in a very short time
- Understands all alphabets, shapes, fruits and vegetables
- Loves to play with sand, colours, paint and lights. Likes to see, feel, touch and explore intensely.

Areas to work upon:

- Lack of communication through use of words. Prefers to be in his quite self absorbed space.
- Throws tantrums often and suddenly. He is all over the place, kicking legs in the air and biting. The triggers are still unclear. It could due to physical discomfort or sensory overload.
- Suckles right thumb and hence not free to use both hands.
- Not toilet trained yet.

Creation:

Main focus for Ohas would be in channelizing his abundant and enthusiastic energies into gentler form of expression using speech [NARRATIVE CAPABILITY (*TG- Basic Vocabulary, Simple Sentences*)]. Secondly, as he is intensely drawn to material that provide stimulus to the five senses – Smell, Touch, Taste, Sight and Sounds (but engages in his self stimulating way), this can be the means to improve ATTENTION (*sitting tolerance and posture*) and then work on COGNITION (*TG – Kinesthetic Perception*)

The intent for Ohas is to channelize his ability of speech into meaningful communication. Help him use different mediums for Self-Expression.

4.2.4b Inferences and Domain comparisons

As typical of a young child on the high end of the autistic spectrum, Ohas is a highly intelligent child, a self learner who expresses himself at his own pleasure and not in response to others.

His participation in a group session is usually very minimal but it was observed that he was more responsive in one on one sessions. He likes to engage in voice play, i.e., making different types of sounds with different intonations and speed.

It is difficult to assess his cognitive, narrative capabilities in any form of direct response from him to the facilitator's requests. Observations are made in informal ways and during out of session contexts.

He is physically very alert and his sense of balance and stability is excellent. Over the period he is attention has improved and he remains seated during the session. His engagement with other children is very minimal and his expressions through artistic media (clay, drawing) have made some progress. He has just begun to draw happy smileys' of various sizes and makes strings and cylinders with dough or clay. His oromotor and vocalization abilities are good, but this needs to translate into spontaneous and meaningful speech as he is more often happy singing and mumbling to himself.






4.2.4c Comparison of drawings and paintings - Ohas



Ohas Pre drumming

4.2.5a SANJEEV MURALI

Male, DOB: 03 OCT 2003, 10 Years 6 months (as on 01 May' 14)

Family Background

Father is working in TATA's and mother is a housewife. He has a twin sister, Sanjana. He lived with his Aunt (Father's sister) for a year (2013) as his father was posted to another city for work.

Academic & Rehab Background

He has identified as having 'Borderline Autism' at the age of 1.5 years. He underwent allopathic intervention along with various therapies. Has been following special diets for the past 4 years and has been regularly attending special school since last 5 years.

Medical Background

He underwent Ayurvedic treatment and diet in 2013. Therapies given: Speech Therapy, Occupational therapy, Play therapy, Music Therapy

Child's Strengths:

- Very fond of his sister and she equally reciprocates. Loves all sorts of music and travelling long distance in car.
- Understands commands and somehow able to communicate non-verbally all his needs.

Areas to work upon:

- Tendency to hit himself when irritated and screams incessantly. Likes to be alone and prefers a routine for everything.
- Likes to play and sooth himself by holding objects like sticks, brushes, ball, paper and constantly tapping or flapping.
- Extremely short attention span; looks up and keeps shaking his head side to side all the time while sitting as well as while sleeping.
- Fiddles with switches and throws things and pinches to draw attention and to distract from the activity.
- Inappropriate sitting posture. Does not sit cross legged. His body is extremely lethargic and does minimal body movements. Always prefers sit at the slightest possible opportunity with back support.

Creation:

Main focus for Sanjeev would be BODY (*Physical Alertness*) and improved ATTENTION (sitting tolerance and posture). Second area of focus would be Cognition and then NARRATIVE CAPABILITY (*TG-Vocalization*).

The intent for Sanjeev is to find interesting means to engage him sufficiently that address his self stimulation/ self soothing behaviours. He needs a lot of physical work to improve his strength, muscle tone and agility and encourage communication (non verbal).

4.2.5b Inferences and Domain comparisons

Sanjeev has come a long way from being a constantly agitated non cooperative child demanding sensory distractions to being calm, responsive and engages happily more often.

His body agility and alertness has improved significantly, as he now able to lift his feet off the ground and jump and willingly participates and enjoys physical routines.

Though his attention is still very low and he keeps shaking his head, his other self stimulating behaviours have reduced. Reduced stimulatory behaviours has improved his focus, consequently marginal shifts are seen in cognition. His group interaction is limited to holding hands of his peers in the group. Maintaining eye contact with the activity is extremely limited.

His oromotor abilities and vocalization are negligible. A significant observation was that he responded to saying "a" on the facilitator's request. This is normally the sound he makes when crying.

The major strength of Sanjeev is his receptive language abilities. He quickly responds to instructions of daily activities. He is familiar about the objects in his daily environment.

Drumming is an activity he engages voluntarily and gets impatient to start. It is observed that he is able to use both hands alternatively without any variations.







4.2.5c Comparison of drawings and paintings - Sanjeev











4.2d Differential Assessment and Triangulation of evaluation tools

Different evaluation tools used to the collect data were compared and studied to assess the impact on the focused domains of the clients and other outcomes.





Referring **RS V(c)** on page 18; the results obtained through observation format indicate improved speech and language (receptive and expressive) in all the clients. Naina and Ohas's parents have indicated progress greater than that assessed by the ABT practitioner (**refer graph RS VI, page 18**). Here is note shared by Ohas's parents on 02nd September 2014.

"Ohas's communication has improved over last couple of months. He is more responsive to our verbal communication and gestures. He is attempting to write few alphabets. He is aware of alphabets and numbers. The predominant mode of communication is still gestures. He responds more often when his name is called. He has become more affectionate towards his mother and tries to manipulate himself out of a situation. He responds to both English and Hindi. He is still not able to express himself when he is in pain or discomfort and usually has a meltdown. He sings Hindi songs & rhymes more often." As Krishna and Sanjeev are both non verbal, their parents have indicated status quo and no progress respectively. From the facilitators assessment they have significantly improved their communication through gestures and sounds and their crankiness has reduced immensely.

Karthik's parents have indicated a slight decline in his speech abilities, contrary to the practitioner's assessment. This is because Karthik's speech is heavily prompt dependent and he is mostly repeating or sequencing.

The results indicated in **RS V(a)**, **RS V (b) and RS V (c)**; **page 17&18** (Attention, Cognition and Speech & Language) compare well to the positive outcomes obtained through simulated tests and drumming. (Refer graph RS IX & RS X)



RS IX

The simulated tasks were created to observe the clients level of attention and the ability to offer an appropriate response. The overall upward shift across the study group is due to improved attention and more spontaneous attempts to communicate through gestures and sounds.





The shifts in drumming were mainly in the TDs of attention and body. The children were able to play for a longer duration, make slightly larger hand movements and attempted the use of both hands. The children often responded to stop cut. Only Naina would vocalize the rhythm when highly excited. The ability to respond to variations of speed or volume was almost negligible.

The observations of the drawings made pre and post a drumming session are very interesting. The post drumming scribbles of Karthik are less intense and spacious, Krishna's drawing is lighter, Naina's is less scattered and more intense, Sanjeev's lines/strokes are more directed and less scattered, Ohas scribbles are less and lighter. The intensity and control in the post drumming drawings is in contrast to the children's usual energy states.

All the parents have shared one point in common in the comments column – "*The children are adamant in what they want. They get irritated, throw a tantrum or cry if his/her need is not met or when they need is not understood."* Hence it is urgent and important to create a safe space for the child to be understood and to help him/her understand. This can be facilitated by letting them explore expression through the artistic medium they are interested in (for e.g. effect of drumming as referred above) and thereby help them channelize communication through speech and language or gestures and sound.

SECTION 5: DISCUSSION

5.1 Limitations

The most crucial element that directly impacts the purpose and accuracy of the project is data collection. The major limitation is that the child responses are subject to many variables. It depends on the child's mood, the facilitator's creative and persuasive abilities to elicit a response, distractions in the child's environment, patience of the facilitator and the intent of the child. For e.g. a child who can open mouth wide or identify alphabet may not respond that moment.

It is noticed that the subtler shifts are more subjective than objective and these remain undocumented till the response matches a rating on the tool used. These subtler changes are often more unique to the client. So while collecting the data it was felt that the observation formats could have been further broken down to greater detail. For e.g. "Can stretch tongue out" will not just be the range of ability to stretch the tongue but could be as subtle as wanting, attempting to respond in a more challenged client.

The next impacting limitation is absenteeism. This affects the flow of conducting the sessions. All the children were absent for 3-4 days continuously at different times during the 3 month period.

As the children are enrolled full time at Snehadhara Foundation, which practices ABT, the outcomes of the study are not restricted exclusively to the 14 one on one sessions of thirty minutes each per child but must have been significantly influenced by the other interventions through the day.

The project period of three months gives a taste of the possibilities of using ABT as an intervention tool for children with special needs but results cannot be taken as the actual quantified progress. The study has to be continued for a longer period for accurate quantifiable shifts.

5.2 LEARNINGS

ABT practiced on the foundation of SEG (Subtle Energy Guide) is a holistic approach to learning, an integration of the Body, Mind and Spirit. This has opened up a wide new world of immense possibilities and potential.

As highlighted in the literary review, it is evident from the current research on brain neuro-plasticity that monotonous repetitions; forcing the child to do something for which they are not yet ready is a recipe for failure as this further only hardwires the disabilities in the child. ABT is totally an experiential learning. Children experience an art form; be it drumming, painting, dancing or singing from their present abilities. ABT then builds on smallest possible experience rather than focusing on the disabilities. Play, rhythm, movement, expression are inherent in every child and ABT taps into this inherent reservoir.

All the children in the group are musically inclined. Karthik spontaneously hums rather than talk. Naina wakes up and responds only when the instructions are sung to her. Sanjeev is inclined towards classical music and drumming. Ohas who apparently seems like he is least interested in the proceedings sings full songs in different languages. Such strengths of the child were tapped into and worked upon to enhance communication.

Another significant learning from ABT has been the complete paradigm shift in the approach of working with children with disabilities i.e. from <u>fixing to</u> <u>connecting</u>. The purpose of connecting with the child is not just about being more loving or compassionate. On the contrary, it is about providing the child with the greatest opportunity to develop real skills and a strong sense of self, to feel good, awaken their ability to learn and grow, with a genuine sense of accomplishment and pride.

The learnings specific to the study has been the observation that vocalization and speech is independent of oromotor abilities. Better vocalization in turn leads to better cognitive and language abilities. This leads us to understand that a physical handicap does not necessarily limit expression and hence artistic learning tools are the most organic and appropriate means for learning. But this thought can be further investigated.

The learnings on a personal level have been immensely profound. On a physical and emotional level experiencing arts in its most simple and elemental forms made me feel like a child again. The hardened form of self cracked and outer sugar coated personality began to melt. I have become more uninhibited and joyful. Learning and understanding the five elements

of the SEG has helped me remember and access my inner spirit and strength.

Though the children in the study were not ready for metaphors, I have learnt to see and experience the world in a whole new way through metaphors. The metaphor that I associate for my personal journey with ABT is a BAMBOO plant/grass, a symbol of strength, flexibility and collective responsibility. In a bamboo plant we can see the extraordinary in the ordinary. Bamboo has been an integral part of art, music, dance and daily life for centuries.

Albert Einstein said "We cannot solve our problem with the same level of thinking / consciousness that created them". We cannot find the answers in the known and we need to be courageous and open to the unknown for fresher and newer insights. Taking up this course and committing myself to its rigorous discipline was step into the unknown and the experience has been both exasperating and exciting. ABT is just a beginning to endless explorations.

5.3 FUTURE

There is vitality, a life force, energy, a quickening, that is translated through you into action and because there is only one of you in all time, this expression is unique.

MARTHA GRAHAM

At this moment I deeply cherish the journey so far with the kids and embrace the learnings and process wholeheartedly. I landed on this path by accident and I leave it to divine to lead me through.

I realize that there is meaning in every little thing we do if the intent is right, while the timing and the nature of outcomes is not in our hands. I do not have a clear goal or a plan for now, but I do envision a future of immense possibilities using ABT. This study has kindred my interest in using art forms as learning tools and I intend to keep studying, exploring and honing my skills in music, movement, play, drama, dance, storytelling, voice and rhythm.

I see myself continuing to work with children with special needs in both groups and in one on one setting. ABT is just not evidence based use of art forms in a therapeutic process but is a healing practice as well. I am inclined to explore some forms of energy healing/medicine along with ABT.

I hold the intent for all to "Go beyond limitation to the miraculous."

SECTION 6: APPENDIX

Appendix A1: Behaviour Rating Scale for CWSN (WCCLF)

ab

World Centre for Creative Learning Foundation RATING SCALE – CHILDREN WITH SP. NEEDS

Dear ABT Practitioner,

Given ahead is a rating scale that describes several behaviors, ways of thinking, skills & abilities. We suggest that you utilize the rating scale in the following manner:

We would like to request you to go through each item and rate the participant on a 5 point rating scale. You can collate the scores and do a simple average. Average = (Score Total) / (Number of Questions x 5).

<u>Please do not leave any item unmarked</u>. We recognize that it is often difficult to rate an individual on such specific aspects, and in such a structured manner, especially when you have so much information about them. We would still like you to organize your thoughts and mark the rating scale based on your observations.

A final column has been added just in case, you absolutely want to add a comment to clarify the rating you have given. Please read carefully and tick (</) the appropriate rating. Write the score for each therapeutic goal in the 'score' column

1. 5. No/ Code No:

2. Name of Participant being rated:

3.Name of Rater:

4.Date of Rating:

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BODY		1	2	3	4	5	Score	Com	nent
B 1	Moves in a coordinated manner	Almost	Rarely	Sometimes	Frequently	Almost			
		never				alway <i>s</i>			
B 2	B 2 Exhibits quick reaction time		Rarely	Sometimes	Frequently	Almost			
						always			
B 3	Has the fine motor skills to perform	Almost	Little	Somewhat	Quite a lot	Almost all			
	given tasks	none							
B 4	Speech is clear (not slurred)	almost	barely	somewhat	mostly clear	Almost			
	I	never	clear	clear		always			
					Total Sco	re [Body] =		Average =	
	ATTENTION	C	hoose any	one of the	sentences b	elow	Score	Com	nent
	Barely manages to Focus on task/acti	vity. hara	lly any ey	e-contact (1)					
	Sustains attention on task/activity at	hand for	r some tir	ne (2)					
A 1	Concentrates for long time on set tas	k/activit	y even wh	en there are	distractions	(3)			
	Can alternate and divide attention be	tween tw	o simultar	neous tasks/a	ctivities (4)				
	Almost always shows a stable attentio (5)	on span a	ccompanie	d with being	present in-tł	ne-moment			
				То	tal Score [At	tention] =			
GR	OUP INTERACTION DOMAIN	1	2	3	4	5	Score	Com	nent
GI 1	Shares material, ideas, solutions	Almost	Rarely	Sometimes	Frequently	Almost			
		never				alway <i>s</i>			
GI 2	Takes initiative within the group	Almost	Rarely	Sometimes	Frequently	Almost			
		never				always			
GI 3	Is sensitive to group member's needs	Almost	Rarely	Sometimes	Frequently	Almost			
	and helps them	never				always			
GI 4.a	Can wait for needs/desires to be	Almost	Rarely	Sometimes	Frequently	Almost			
	fulfilled	never		-	-	always			
GI 4.b	Can hold back on expressing views	Almost	Rarely	Sometimes	Frequently	Almost			
	when appropriate to do so	never		7.1.10		always			
				lotal Score	e [Group Inte	eraction] =		Average =	

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	COGNITIVE DOMAIN	1	2	3	4	5	Score	Comment
С 1.а	Can discriminate between similar sounding speech sounds (fear/hear)	Almost never	Rarely	Sometimes	Frequently	Almost always		
C 1.b	Can repeat sound patterns which s/he hears	Almost never	Rarely	Sometimes	Frequently	almost always		
C 2.a	Can read	Almost None	Little	Somewhat	Quite a lot	Fluently		
С 2.Ь	Can Spell	almost none	Little	Somewhat	Quite a lot	almost all		
С З.а	Can repeat short phrases	Almost never	Rarely	Sometimes	Frequently	Almost always		
С 3.Ь	Can remember information or instructions, and talk about it.	Almost none	Little	Somewhat	Quite a lot	Extremel y fluent		
С 4.а	Can learn movements taught, and repeat them with eyes closed	Almost none	very few	Sometime <i>s</i>	Frequently	even most difficult moves		
C 4.b	Can discern shapes of objects, with his/her eyes closed, using touch	almost never	Rarely	Sometimes	Frequently	almost always		
C 4.c	Is good at games, sports, athletics	Almost none	Little	Somewhat	Quite a lot	Almost all		
С 5.а	Is able to understand age appropriate number concepts.	Almost none	Little	Somewhat	Quite a lot	Almost all		
С 5.Ь	is able to tell how much of something he has, how much he needs and how much is left to spare (e.g. money, distance, time)	Almost never	Rarely	Sometimes	Frequently	Almost always		
С 6.а	Can describe how to go from one place to another (age appropriate)	almost never	Rarely	Sometimes	Frequently	Almost always		
C 6.b	Is able to locate objects within surroundings	Almost never	Rarely	Sometimes	Frequently	Almost always		

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	COGNITIVE DOMAIN (Contd)	1	2	3	4	5	Score	Comment
C 6.c	Can draw a floor plan of the therapy room	Almost none	no details	some details	many detail <i>s</i>	very detailed		
С 7.а	Can understand cause-effect relationship ('why' events happen)	Almost never	Rarely	Sometimes	Frequently	Almost always		
С 7.Ь	Understands the rules of age- appropriate games*	Almost none	Little	Somewhat	Quite a lot	Almost all		*special focus on 'If - Then' relationship
C 7.c	is able to solve simple problems by weighing options, considering alternatives, comparing & choosing	Almost never	Rarely	Sometimes	Frequently	Almost always		
C 8	is fluent in using mobile phone features, computer programs and other gadgets	almost never	Rarely	Sometimes	Frequently	Almost always		
C 9.a	Can tell the 'moral/real meaning' of a story after listening to the story.	almost never	Rarely	Sometimes	Frequently	Almost always		
С 9.Ь	Can delay immediate gratification for more long-term goals.	almost never	Rarely	Sometimes	Frequently	Almost always		
C 9.c	Can make a 'goal-oriented plan' - deciding what is critical and how to start	almost never	Rarely	Sometimes	Frequently	Almost always		
C 10.a	Can pick up the 'mood/feelings' of other person by observing facial expression, body language & tone*.	Almost never	Rarely	Sometimes	Frequently	Almost always		*use mime/dramatic expressions and sounds without words.
C 10.b	Can examine an image/images* and understand the picture's story-line, thereby arrive at correct conclusion	Almost never	Rarely	Sometimes	Frequently	Almost always		*test should not contain words, only images
			Average =					

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	NARRATIVE CAPABILITY	1	2	3	4	5	Score	Com	ment
NC 1	Vocalizes vowels and consonants	Almost none	very few	half of them	most of them	Almost all			
NC 2	is able to utilize words with meaning	Almost none	very few	some words	many	Almost all			
NC 3	Is able to create short simple sentences	Almost never	Rarely	Sometimes	Frequently	Almost always			
NC 4	Gives meaningful and personal answers to open-ended questions	Almost never	Rarely	Sometimes	Frequently	Almost always			
NC 5	can narrate a story in correct sequence	Almost never	Rarely	Sometimes	Frequently	Almost always			
Total [Narrative Capability				apability]=		Average =			
EXPR	ESSIVE CAPABILITY DOMAIN						Score	Com	ment
EC 1	Can express him/herself through artistic media* - <u>Choose one answer</u>	Only imit keeps dis Improvis factory) Creates metapho	Only imitating (1) keeps displaying repetitive artistic skill (2) Improvises with group/ABT practitioner (3) Improvises on small metaphors or images (e.g. factory) (4) Creates a personal artistic expression which is rich in metaphorical meaning (5)					*Specify his, artistic medi	/her favorite um
				Total Score	(Expressive	Capability]		Average =	
	٦	FOTAL S	CORE [B	+ A + GI +	C + NC + E	c]			

Appendix A2: Observation chart for Oro Motor & Vocalization

Name of the child: _____

Date: _____

Assessment by: _____

1.	Can open mouth wide	Excellent/Good/Average/Fair/Poor/ No
2.	Can open mouth wide and make the sound "aaaa"	Excellent/Good/Average/Fair/Poor/ No
3.	Can purse lips together	Excellent/Good/Average/Fair/Poor/ No
4.	Can purse lips together and make the sound "oooo"	Excellent/Good/Average/Fair/Poor/ No
5.	Can stretch tongue out	Excellent/Good/Average/Fair/Poor/ No
6.	Can move tongue from side to side	Excellent/Good/Average/Fair/Poor/ No
7.	Can lick lower lip	Excellent/Good/Average/Fair/Poor/ No
8.	Can lick upper lip	Excellent/Good/Average/Fair/Poor/ No
9.	Can fold lips inward	Excellent/Good/Average/Fair/Poor/ No
10.	Can fold lips inward and make the	Excellent/Good/Average/Fair/Poor/ No
	sound "mmmm"	
11.	Can rumble lips	Excellent/Good/Average/Fair/Poor/ No
12.	Can rumble lips and make the sound "rrrr"	Excellent/Good/Average/Fair/Poor/ No
13.	Can stretch lips and hold a smile	Excellent/Good/Average/Fair/Poor/ No
14.	Can fill cheeks with air	Excellent/Good/Average/Fair/Poor/ No
15.	Can blow softly	Excellent/Good/Average/Fair/Poor/ No
16.	Can blow forcefully	Excellent/Good/Average/Fair/Poor/ No
17.	Can blow a whistle	Excellent/Good/Average/Fair/Poor/ No
18.	Can suck liquid through straw	Excellent/Good/Average/Fair/Poor/ No
19.	Can articulate a, e, i, o, u	Excellent/Good/Average/Fair/Poor/ No
20.	Can articulate k, g, f, v, r	Excellent/Good/Average/Fair/Poor/ No
21.	Can articulate pa, ba, ma, wa	Excellent/Good/Average/Fair/Poor/ No
22.	Can articulate la, ta, na, da	Excellent/Good/Average/Fair/Poor/ No
23.	Can articulate sh, th, zz	Excellent/Good/Average/Fair/Poor/ No
24.	Can imitate pitch variations	Excellent/Good/Average/Fair/Poor/ No
25.	Can imitate volume variations	Excellent/Good/Average/Fair/Poor/ No

Scale

0	1	2	3	4	5
No	Poor	Fair	Average	Good	Excellent

Appendix A3: Observation chart for Attention, Cognition Speech & Language (Receptive & Expressive)

Name of the child: _____

Date: _____

Assessment by: _____

1.	Can imitate hand gestures	Excellent/Good/Average/Fair/Poor/ No
2.	Can imitate facial expressions	Excellent/Good/Average/Fair/Poor/ No
3.	Can sort coloured beads	Excellent/Good/Average/Fair/Poor/ No
4.	Can sort coloured bead as	Excellent/Good/Average/Fair/Poor/ No
	instructed (by naming the colour)	
5.	Can match pictures	Excellent/Good/Average/Fair/Poor/ No
6.	Can match symbols (letters &	Excellent/Good/Average/Fair/Poor/ No
	numerals)	
7.	Can pay sustained attention to task	Excellent/Good/Average/Fair/Poor/ No
8.	Can establish eye contact	Excellent/Good/Average/Fair/Poor/ No
9.	Can follow verbal instructions and	Excellent/Good/Average/Fair/Poor/ No
	responds to tasks	
10.	Can point to 10 familiar objects	Excellent/Good/Average/Fair/Poor/ No
	when named	
11.	Can point to body parts	Excellent/Good/Average/Fair/Poor/ No
12.	Communicates needs by gestures,	Excellent/Good/Average/Fair/Poor/ No
	pointing and sounds	
13.	Communicates needs by self -help	Excellent/Good/Average/Fair/Poor/ No
14.	Communicates needs verbally	Excellent/Good/Average/Fair/Poor/ No
15.	Can repeat words said	Excellent/Good/Average/Fair/Poor/ No
16.	Can label colours, shapes, letters	Excellent/Good/Average/Fair/Poor/ No
17.	Can sing songs	Excellent/Good/Average/Fair/Poor/ No
18.	Clarity of speech	Excellent/Good/Average/Fair/Poor/ No
19.	Can say words spontaneously in	Excellent/Good/Average/Fair/Poor/ No
	context	
20.	Can speak in simple sentences	Excellent/Good/Average/Fair/Poor/ No

Scale

0	1	2	3	4	5
No	Poor	Fair	Average	Good	Excellent

Appendix A4: Parent's Questionnaire Speech & Language (Receptive & Expressive)

Name of the child: _____ Date: _____

Name of the Parent: _____

Kindly answer the following questions by ticking the column that is relevant to your child.

		Never	Sometimes	Always
1	Does the child speak in sentences			
2	Does the child speak using 2-3 words			
3	Does the child speak using single words			
4	Does the child speak spontaneously			
5	Is the speech relevant to the context			
6	Is the child's speech prompt dependent			
7	Does the child only repeat what you say			
8	Is the child able to speak clearly -Volume			
9	IS the child able to speak clearly – Word clarity			
10	Does the child attempt to speak through gestures and sounds			
11	Does the child use gestures for requests			
12	Does the child use sounds for requests			
13	Has the child established a non verbal vocabulary for his daily needs			
14	Does the child attempt to repeat the			
15	Is the child more responsive to			
15	communication in mother tongue			
16	Is the child more responsive to			
17	Does the child use any aids (nicture			
- /	cards, sign language, tablet, computer or			
	any language software) for			
	communication			
18	Does the child read			
19	Does the child spell (spoken or written)			
20	Does the child attempt communication			
	with siblings or others			
21	Your Observations:			
	Please share details to elaborate on any of the above questions or to share more information about strengths and challenges with regard to communication. (please use an extra sheet if required)			

Appendix B: Simulated Tasks (Attention & Speech)

Name of the child: _____

Date: _____

Assessment by: _____

S.No	Task		Respo	onse & Ra	ting	
		0	1	2	3	4
1	Chocolate in facilitator's hand	No response	Instinctively takes it	Gestures	Gesture with sound	Uses word "give" or sentence
2	A soft toy	No response	Aimlessly fidgets	Pays attention to play	Imitates play action n sounds	Engages in interactive communicati on
3	Play with mallet	No response	Aimlessly fidgets	Hits on the ground	Imitates a pattern or rhythm	Vocalizes to rhythm
4	Flash card (picture & word)	No response	Pays attention	Correctly points to the picture	Points and vocalizes	Labels the picture
5	Greet by waving hand & say hello	No response	Waves with assistance	Waves with prompts	Waves without prompts n vocalizes	Waves and says hello

Appendix C1: Observations during Drumming Session

(Receptive & Expressive)

Name of the child:	Date:
Assessment by:	

Sometimes Never Always Hits very hard 1 2 Uses full length of arms 3 Both hands hit together Short burst of frenzy and stops 4 5 Hits with normal force Plays only one rhythm again & again 6 7 Hits very softly 8 Needs support to initiate 9 Gets disturbed by the noise Uses only one hand at a time 10 Uses alternate hands, but no 11 coordination 12 Can coordinate and play with alternate hands, but slowly, soon loses interest 13 Can coordinate and play with alternate hands 14 Is able to play loud & soft 15 Is able to play fast & slow Responds to initiate rhythm 16 17 Responds to follow rhythm Is able to play rumble 18 19 Responds to start & stop cues 20 Imitate rhythms

	APPENDIX C2 : Session Record Sheet (SRS) Summary									
Session no.	Date & Time	Therapeutic Domain	Metaphor	Communion	Creation	Closure				
1	02 Jun - Mon	Attention , NC - Vocalization, Basic Vocabulary	Statue	Walk through the space holding hands, stop/freeze and walk again. Run ,stop/freeze run	Facilitator is the leader. Ask the child to watch carefully and imitate the body movements. Ask the child to repeat and say the action verb aloud. Hold the movement for a few repetitions and then change. Start with large movements like raising arms up & down, marching, jumping, then move on to subtler movements like nod head, lifting shoulders, shaking hips, swinging arms side to side	Sit down and gently breathe in and out. Massage arms and leg. Chant a prayer.				
2	09 Jun - Mon	Body, Attention, NC - Vocalization	Beat	Warm up with handshakes and presses. Rub the drum with palm, scratch the drum with fingers	Facilitate a drumming session with basic beats and vocalization, songs	Finger massage and AUM				
3	16 Jun - Mon	Attention , Cognition, Auditory speech discrimination, NC - Simple Sentences	Here I Am	Warm up with hi- fi's and sing " Where is ThumbkinHere I am"	Introduce 4-5 objects on the table- book, ball, bat, bag, pencil. Put them in different places in the room. Ask "Where is the book?" .The child will go pick up the book and say "Here is the book". Similarly repeat for all other objects. Make it interesting by using different tones of voice. Loud, soft, whisper, gruff, nasal etc.	Collect all the objects put them together. Play with bat/ball or read as the child prefers. Close with breath work and prayer.				

4	24 Jun- Tue	Attention & Body	Little Zen Master	BI & BO. Stretch body with gentle movements of the hands through the space with mindfulness.	Create Zen paintings in coordination with breath and gentle vocalizations	Meditation with Mantra for 2 minutes.
5	30 Jun - Mon	Attention, Expressive capability, NC- Vocalization	I am	Open with Hi-Fi and begin with asking and telling each other's name. Standing and vocalizing "aaa", "oooo", "mmm".	Introduce puppet with their names in animated voice. Have a conversation with hand puppet, Jumbo the elephant and Tutli the Turtle. Introduce simple sentences like; Hi, What is your name? Thank you and Bye.	BI/ BO, OM
6	10 July- Thu	Attention, Fine Motor, Expressive capability	Swirls	Greetings, Hi Fi. Play with HI – Fi alternating hands, Open close palm and wiggle fingers	Exploring visual art with crayons, sketch pens and poster colours	Hand presses, hand rubs , shake and place on your heart, BI & BO
7	14 Jul- Mon	Body, Attention, NC- Vocalization	Puppet	Child imitates the facilitator -hand and leg shakes, Child press palms against the facilitator and together move up and down, and side to side	Stand opposite the child sing/ voice and do an action (stamp feet, rub nose, pull ears, touch head), the child copies / responds to the action and voice. Bring various simple movements and associated sounds	Relax by stretching legs and arms. BI / BO and prayer

8	22 Jul- Tue	Body, Attention, NC - Vocalization	Pace	Vocalize a sound - HA, HA, HA - fast and slow, or ZIP ZAP ZOOM - fast and slow	Walk and match the pace to the vocalization of HAHAHA or HA HA HA. Introduce claps slow and fast and match walking to the speed of the claps. Bring in a drum and see if the child can match walk/ run to the speed of the beat. Loud - Walk fast, Soft- Walk slow.	Rub palms, shake place on heart , feel the heart beat , BI / BO
9	01 Aug - Fri	Body, Attention, Self expression through arts	On the roll	Feel and roll marbles in a tray. Take one or two marbles and roll it around the edges of tray.	Give a tray with sheet paper to the child and drop a marble coated in paint into the tray. Let the child move the tray and roll the marble and watch the patterns emerge.	BI/ BO, OM
10	05 Aug - Tue	Body, Attention	Bounce	Play catch and throw or pass the ball to and fro. Then bounce the ball.	Bounce on the trampoline, roll over a gym ball, bounce on gym ball, go under and through a tunnel. Come back and bounce on the trampoline.	Stretch legs, massage. BI/BO
11	06 Aug, Wed	Body- Oro motor, Attention,	Wind	BI & BO. Vocalize HAHAHA, HOHOHO, HEHEHE normally and then with force. Blow paper pieces softly and forcefully.	Blow a whistle and then with bubble solution blow bubbles. Burst bubbles. Create bubbles with a straw in a glass.	Massage cheeks and smile, Say OM 3 times

12	11 Aug, Mon	Body - Fine motor, Attention, Self expression through Art	Knead	Warm up with action song "Clap your hands Press your fingers, Rub your palmsTap the floor, Rub the floor, Rub the floor, move your palms up and down shake your hands	Give each child a few sticks of coloured dough and let them explore and work with it. Watch for ability to create objects or guide in working with the fingers.	Close with " Where is Thumbkin", BI& BO
13	18 Aug, Mon	Attention, Cognition - Symbol recognition, NC- Basis vocabulary	Structure	Show flash cards of shapes or wooden shape blocks.	On a chart paper the child applies glue and picks from a bowl shapes cut on coloured paper. Each shape is of a different colour.	Display collage, sing a song on shapes, BI/BO
14	25 Aug, Mon	Cognition, Attention, Basic vocabulary	Match	Introduce colour cards, identity and label.	Give the child a sheet of paper with squares with bright coloured borders of different colours. Give them paints to match and fill the coloured squares with same colour paint or use fingers to places dots in the squares with matching colours.	Sing and relax to the song "The world is a rainbow"
15	17 Jun, Tue	Attention , Cognition, Auditory speech discrimination, NC - Simple Sentences	My space	Warm up with vocalization (a, e, i, o, u), Show 2-3 flash cards and the child points to the objects asked for.	Place objects of daily use in an area like bat, ball, book, bag, pencil, bucket, shoes, crayons, flowers, plate, spoon etc Let the child identify and pick up the object asked for. Labeling & vocalization. Use voice variations, actions to facilitate labeling.	BI/ BO, OM

A1b: Data Sheet - Behaviour Rating scale

WCCLF - Rating Sc	ale - C	hildren	with S	pecial N	eeds						
Pre -Apr, Post- Aug											
	Ka	rthik	Kris	shna	hna Na		Ohas		Sanj	jeev	
Domain	ain Pre Post Pre		Post	Pre	Post	Pre	Post	Pre	Post		
Body	75	85	65	70	50	70	85	95	40	55	
Attention	40	40	40	40	20	40	20	40	20	20	
Group Interaction	44	44	24	24	24	28	20	20	28	28	
Cognition	49.4	31.8	31.9	26.8	35.6	30.4	42.6	40.8	33	28.6	
Narrative capability	44	24	24	28	36	40	36	36	20	20	
Expressive capability	40	40	40	40	40	40	40	20	20	40	
	48.73	44.13	37.48	38.13	34.27	41.40	40.60	41.97	26.83	31.93	
* Rating scores conver											

Appe	Appendix A2b: Observation chart for Oro Motor & Vocalization															
	Pre - 02-05 Jun 2014, Mid - 21-25 Jul, Post - 25-28 Aug	К	ARTH	IK	К	RISHN	Α	NAINA			(OHAS		SA	NJEE	V
		Pre	Mid	Pos	Pre	Mid	Pos									
1	Can open mouth wide	5	5	5	0	0	2	0	1	1	2	4	4	0	0	1
2	Can purse lips together	1	2	2	0	0	2	0	0	1	1	1	2	0	0	0
3	Can stretch tongue out	1	2	2	1	1	4	0	1	1	3	3	4	0	0	0
4	Can move tongue from side to side	1	2	2	1	1	4	0	1	1	3	3	4	0	0	0
5	Can lick lower lip	2	1	1	2	2	3	8 0	0	0	3	4	4	0	0	0
6	Can lick upper lip	0	0	0	0	0	2	0	0	0	2	3	3	0	0	0
7	Can fold lips inward	0	1	1	1	2	2	0	1	1	1	1	4	0	0	0
8	Can rumble lips	1	0	2	2	3	2	0	0	0	0	1	1	0	0	0
9	Can stretch lips and hold a smile	2	4	4	1	2	4	1	2	0	1	2	3	0	0	0
10	Can fill cheeks with air	2	2	2	3	3	4	0	0	0	2	3	3	0	0	0
11	Can blow softly	1	2	2	1	1	4	2	2	3	1	2	3	0	0	0
12	Can blow forcefully	1	2	2	0	1	2	2 1	1	1	0	4	1	0	0	0
13	Can blow a whistle	2	2	2	5	5	3	8 1	2	2	4	5	4	0	0	0
14	Can suck liquid through straw	5	5	5	0	0	4	3	2	3	3	3	5	0	0	0
	ORO MOTOR	34.29	42.86	45.71	24.29	30.00	60.00	11.43	18.57	20.00	37.14	55.71	64.29	0.00	0.00	1.43
1	Can open mouth wide and make the sound "aaaa"				0	0		2	2	2			2	0		
	Can purse lins together and make the sound "occo"	4	4	4	0	0	1	. 2	2	2	1	1	2	0	0	1
2	Can fully instant and and make the sound "0000	2	2	0	0	0	1	. 1	0	2	1	1	1	0	0	0
3	Can rold lips inward and make the sound "mmmm"	3	0	1	1	2	2	0	0	0	0	2	4	0	0	0
4		1	1	1	1	1	1	. 0	0	0	0	1	1	0	0	0
5	Can articulate a, e, i, o, u	3	3	4	1	1	2	1	2	3	0	1	3	0	0	0
0	Call articulate K, Y, I, V, F	2	2	3	0	0	1	. 1	3	3	0	1	2	0	0	0
/	Can articulate pa, ba, ma, wa	2	2	3	2	3	2	2 1	1	4	0	2	3	0	0	0
8	Can articulate la, ta, na, da	2	2	4	1	1	1	. 0	0	2	1	1	2	0	0	0
9	Can articulate sn, th, zz	1	2	3	0	1	2	2 1	2	1	0	1	1	0	0	0
10	Can imitate pitch variations	0	0	1	0	0	1	. 0	0	0	0	0	0	0	0	0
11	Lan Imitate volume variations	1	1	2	1	1	1	. 1	2	1	1	2	3	0	0	0
	VOCALIZATION	38.18	34.55	47.27	12.73	18.18	27.27	14.55	21.82	32.73	7.27	23.64	40.00	0.00	0.00	1.82

Append	opendix A3b: Observation chart for Attention, Cognition, Speech & Language (Receptive & Expressive)															
	Pre - 02-05 Jun 2014, Mid - 21-25 Jul, Post -															
	Aug 18-21	Dro	Mid	R	Bro				NAINA			OHAS	Doct	Bro	V	
	Attention	FIE	mu	PUSL	FIC	mu	FUSI	FIE	IVIIC	POSL	FIE	mu	PUSI	FIC	Miu	PUSL
1	Cap imitate hand gestures	2	2	2	2	2	4	4		2	0	4		4		
		3	3	3	3	3	4	1	1	2	0	1	1	1	2	2
2		3	4	4	4	4	4	1	1	1	0	1	2	0	1	1
3	Can pay sustained attention to task	2	2	3	2	2	2	2	2	2	0	1	1	1	1	2
4	Can establish eye contact	3	3	4	3	3	4	2	3	3	1	3	3	0	1	2
5	Can point to body parts	4	4	4	4	4	4	3	3	4	0	0	1	1	1	2
		15	16	18	16	16	18	9	10	12	1	6	8	3	6	9
	Cognition															
1	Can sort coloured beads	4	4	5	0	0	1	1	2	2	0	1	1	0	0	0
_	Can sort coloured bead as instructed (
2	by naming the colour)	0	1	1	0	0	0	1	1	1	0	0	1	0	0	0
3	Can match pictures	5	5	5	0	0	0	4	5	5	0	1	1	1	1	2
4	Can match symbols (letters & numerals)	1	3	3	0	0	0	3	3	3	0	0	0	0	0	0
5	Can follow verbal instructions and	3	4	4	3	3	4	4	4	4	1	1	2	2	3	4
	Can point to 10 familiar objects when															
6	named	2	3	4	3	3	3	3	3	4	0	0	2	3	3	4
7	Can label colours, shapes, letters	0	1	1	0	0	0	2	3	3	1	1	3	0	0	0
		15	21	23	6	6	8	18	21	22	2	4	10	6	7	10
	Speech & Language															
1	Communicates needs by gestures,				2	4	4	2	2	2	1	1	2	2		
	Communicator needs by solf holp	2	2	2	2	4	4	2	2	5	1	1	2	2	2	4
2		3	4	4	3	4	4	1	1	1	1	1	1	1	2	2
3		3	4	3	0	0	0	3	4	4	0	1	1	1	2	2
4	Can repeat words said	3	4	4	1	1	1	4	4	4	0	1	1	0	0	0
5	Can sing songs	1	2	3	0	0	0	2	2	3	1	3	2	0	0	0
6	Clarity of speech	1	1	2	1	1	1	1	1	2	2	2	3	0	0	0
7	Can say words spontaneously in context	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0
8	Can speak in simple sentences	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		14	18	19	8	10	10	14	15	19	5	9	10	4	6	8

Append	Appendix A4b: Parent's Questionnaire Speech & Language (Receptive & Expressive)													
	Pre - 11 Jun 2014, Post - 01 Sep 2014	Каг	rthik	Kris	shna	Na	ina	Oh	as	San	jeev			
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post			
1	Does the child speak in sentences	0	0	0	0	1	1	0	0	0	0			
2	Does the child speak using 2-3 words	1	1	0	0	2	1	1	1	0	0			
3	Does the child speak using single words	1	1	1	1	2	2	1	1	1	1			
4	Does the child speak spontaneously	1	1	0	0	1	2	1	1	0	0			
5	Is the speech relevant to the context	2	2	0	0	1	1	1	1	1	0			
6	Is the child's speech prompt dependent	1	2	1	1	1	1	1	1	0	0			
7	Does the child only repeat what you say	1	1	1	1	1	2	1	1	0	0			
8	Is the child able to speak clearly -Volume	1	1	0	0	1	1	2	2	0	0			
9	IS the child able to speak clearly – Word													
	clarity	1	1	0	0	1	1	1	1	0	0			
10	Does the child attempt to speak through													
	gestures and sounds	2	1	0	1	0	1	2	2	1	2			
11	Does the child use gestures for requests	2	1	1	1	0	1	2	2	1	1			
12	Does the child use sounds for requests	1	1	1	1	0	1	1	1	1	1			
13	Has the child established a non verbal									_				
	vocabulary for his daily needs	1	1	1	1	1	1	0	1	2	1			
14	Does the child attempt to repeat the			1	0	1	1	1	1		0			
10	words you speak or sounds you make	2	2	1	0	1	L	L	L L	0	0			
15	communication in mother tongue	1	2	1	0	0	0	0	1	1	2			
16	Is the child more responsive to		2		0	0	0	0						
10	communication in English	2	1	0	0	2	2	1	2	1	1			
17	Does the child use any aids (picture cards,													
	sign language, tablet, computer or any													
	language software) for communication	0	0	0	0	0	0	0	0	1	0			
18	Does the child read	0	0	0	0	0	0	1	1	0	0			
19	Does the child spell (spoken or written)	0	0	0	0	0	0	0	0	0	0			
20	Does the child attempt communication													
	with siblings or others	1	1	0	1	1	1	0	0	1	0			
		21	20	8	8	16	20	17	20	11	9			

Арр	endix B:Simula	ated Ta	sks (Atten	tion & Speech)	Pre - 15 Jun 2014, F	Post	- 20 /	Aug	2014						
S.No	Task	Response & Rating										na	Ohas		San	ieev
		0	1	2	3	4	Pre	pos	Pre	pos	Pre	pos	Pre	pos	Pre	pos
1	Chocolate in facilitator's hand	No response	Instinctively takes it	Gestures	Gesture with sound	Uses word "give" or sentence	3	3	2	3	3	3	1	2	1	. 2
2	A soft toy	No response	Aimlessly fidgets	Pays attention to play	Imitates play action n sounds	Engages in interactive communication	1	2	1	1	0	2	2	2	C	1
3	Play with mallet	No response	Aimlessly fidgets	Hits on the ground	Imitates a pattern or rhythm	Vocalizes to rhythm	2	2	2	2	2	2	1	1	1	. 1
4	Flash card (picture & word)	No response	Pays attention	Correctly points to the picture	Points and vocalizes	Labels the picture	3	3	0	1	1	4	1	1	. 0	1
5	Greet by waving hand & say hello	No response	Waves with assistance	Waves with prompts	Waves without prompts n vocalizes	Waves and says hello	3	4	2	2	2	3	0	0	2	2
							12	14	7	9	8	14	5	6	4	7
						Rating	2.4	2.8	1.4	1.8	1.6	2.8	1	1.2	0.8	1.4

Append	ix C1b: Observations du	ing	Drun	nming	Sess	sion					
	Pre - 10 Jun 2014, Post - 18 Aug										
		Kar	thik	Krish	na	Na	ina	Oh	nas	Sanj	eev
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	Hits very hard	0	1	1	1	0	0	0	0	0	0
2	Uses full length of arms	0	0	0	1	0	0	0	0	0	1
3	Both hands hit together	1	1	1	1	1	1	1	0	1	1
4	Short burst of frenzy n stops	1	1	1	1	1	1	0	0	2	1
5	Hits with normal force	1	1	1	1	0	0	0	2	1	2
6	Plays only one rhythm again										
	& again	2	2	0	2	2	2	1	2	2	2
/	Hits very softly	2	0	1	0	2	2	2	1	0	1
8	Needs support to initiate	2	2	1	1	2	2	2	2	0	1
9	Gets disturbed by the noise	1	1	0	0	0	0	0	1	0	0
10	Uses only one hand at a time	1	1	1	2	1	1	2	1	1	1
11	Uses alternate hands, but no	1	2	0	1	0	1	0	1	1	1
12	Can coordinate and play with			0				0			
	alternate hands, but slowly, soon looses interest	0	0	0	0	0	0	0	0	1	1
13	Can coordinate and play with										
	alternate hands	0	0	0	0	0	0	0	0	0	0
14	Is able to play loud & soft	0	1	0	0	0	0	1	0	1	1
15	Is able to play fast & slow	1	0	0	0	1	0	0	0	0	0
16	Responds to initiate rhythm	0	0	0	0	0	1	0	0	0	0
17	Responds to follow rhythm	0	0	0	0	0	0	0	0	0	0
18	Is able to play rumble	1	1	1	0	0	0	0	0	0	0
19	Responds to start & stop										
	cues	1	1	1	1	1	1	0	0	1	1
20	Imitate rhythms	0	0	0	0	0	0	0	0	0	0
		15	15	9	12	11	12	9	10	11	14
	Overall Percentage	37.5	37.5	22.5	30	27.5	30	22.5	25	27.5	35

ACKNOWLEDGEMENTS

I sincerely thank and express my deepest gratitude:

To the children for allowing me into their lives and for the reciprocal partnership we enjoyed of being each other's teacher and student.

To Gitanjali Sarangan for initiating, leading, guiding and supporting me through every moment of this project. I salute her for being a mentor par excellence.

To Sumathi Ramjee, my supervisor and guide for her patient, gentle guidance and critical feedback.

To Snehadhara Foundation for offering the opportunity and for providing the necessary logistics of space and materials to conduct the study.

To my dearest colleagues at Snehadhara Foundation for their love and untiring support day in and day out to make the process as effortless as possible for me.

To Ramana for his quick tutorials on the basics of data compilation, analysis and preparation of the graphs and constant encouragement.

To Sasha Braganza, my co- traveler on this amazing journey who with her serene presence and sane voice kept assuring me that I am not alone.

To my son Ahan whose understanding and cooperation in accommodating my needs of exclusive time and space is just beyond words.

To my parents for giving me such a wonderful life.

To WCCLF – Aanand, Asha, Deborah and Zubin for all the learnings and love, and for putting together this enriching programme of Arts Based Therapy in service of all humanity.

May the merit accrued from this work be shared with all sentient beings in creation, so that they achieve true freedom.

Namaste.

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SECTION 9: GLOSSARY

ABT - Arts Based Therapy – Evidence based use of art forms to accomplish individualized goals within a therapeutic relationship.

ASD – Autism Spectrum Disorder

Behaviour Rating Scale – Developed by WCCLF, it contains observable behaviours for each domain and sun-domain that can be rated pre, mid, post ABT sessions

CWSN – Children with Special Needs

MR- Mental Retardation

SEG- Subtle Energy Guide

SRS – Session Record Sheet – Developed by WCCLF is a format in which the ABT practitioner records the plan and observations for each client and group after every ABT session

TD – Therapeutic Domain

TG – Therapeutic Goal

WCCLF- World Centre for Creative Learning Foundation