

## Intervention on the Theory of Mind Through ICT Based Social Stories Self- Instructional Module - Teacher's Perspective

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### Abstract:

Children having Autism with Intellectual disabilities have deficits in development and extreme overt behavior, along with marked social deficits are considered a prominent trait of this combination of multiple disabilities. Using ICT based social story intervention could have a stronger impact versus the conventional methods of social training. Video modeling is regarded as a novel ICT based medium for the purpose of demonstrating behavioral patterns. It can be an appropriate form of providing such positive behavioral support. Present study throws light on exploring sustainable models like video modeling as an ICT based options for sustaining learning patterns. The study was probed into the feasibility and effectiveness of video modeling as a prospective medium of social stories intervention for the children with Multiple Disabilities in special school setup. Data was generated through a questionnaire from 50 trained special educators of Delhi- NCR region who were selected through non-probability purposive sampling procedure. Both qualitative and quantitative data analysis was done on the basis of research questions. The findings were that- (a) 74% participants used Social story intervention; (b) 89% participants accepted video-modeling as a viable option; and (c) 71% participants feel that provision of procurement of video modeling has to be sought. The t-score shows no significant difference on the responses on the basis of gender and years of experience.

**Keywords:** ICT, Social Stories, multiple disabilities, Self-instructional module

### I. INTRODUCTION

Autism is a pervasive disorder that is etiologically and clinically heterogeneous. Children with Autism can be similar in many ways, displaying deficits in some areas (impairment in communication, social interaction and imagination). Acquisition of theory of mind does not take place overnight. The early steps in its developments are evident in the second and third year of a child's life. Socialisation has been broadly defined as judgment of general competence within society (Gresham 1986). According to Frith 2012, the marked characteristics that contribute to the deficit in socialization to lack of the theory of mind; that is the ability to represent the mental states of others in order to understand and interpret their behavior, also referred to as "mentalizing" or "mind-reading". Premack and Woodruff (1978) stated that theories of mind pertained to the children's ability to contribute mental states to own and other persons as a system of inference, allowing a child to explain behavior using mental capacities. It is viewed as a "theory", as these are mental processes and difficult to be quantified and observed directly. Most researches have spoken firmly on specific deficits that drive dysfunctions in social scenarios in Children with Autism Spectrum Disorder. One of the most prominent theory being the "mind-blindness" or the lack of theory of mind being the inability to estimate the mental representation of other person's mind. Other research suggested this as the 'strategic social behavior' which says the child recognized the caregiver as the source of nurturing and his well-being but affiliates social behavior where sentimental bonding and progress of the social relationship are missing. The child may

perfectly understand the social situation but lack the actual skills to apply their understanding. As a strategy for long term intervention towards independent functioning in social scenario to be possible, repeated exposure of social behavior has to be integral part of the child's activities. There are varieties of interventions available for the children with ASD to assist and promote social interactions skills. Some of them include face-to-face interaction, augmentative and alternative communications aids, video-modeling and mobile technologies like I-Pads etc. Face to face interaction specifically refers to the reciprocal imitation training where the child with Autism is taught to imitate appropriate social responses.

One such effective method is use of Social Stories that accurately describes a situation, skill or a concept in visual representation and instructions. Research has over the period has identified social stories as a medium of instruction for Children with Autism to reduce inappropriate behaviors, anxiety, and improve social participation. As the child with Autism had a deficit to develop social skills naturally leading to unrecognized and misinterpreted social communication. Children under the intervention are allowed to work as their own agents and were more successful, i.e. the child reads his own stories instead of a caregiver doing it for them. These social stories when devised and presented through video-modeling impact better to engage the child in the intervention, the visual illustrations act as a better tool than written text alone, the simultaneous comprehension of the child can be checked and most importantly it is found to be

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more effective for children with lower intelligence as comorbidity. Nikopoulos and Keenan (2003) define video modeling "as the occurrence of behaviour by an observer that is similar to the behaviour shown by a model on a videotape." Kokina and Kern (2010) in their meta-analysis on the efficacy of video modeling found it of much use in the intervention therapies for children who have socio-communicative deficits; Genc (2010) found that visual support have been used as social skills intervention. Odom et al (2003) stated that vidomodeling is done by observing the individuals enacting the social scenario and often take it as a model to function in similar situations. In this paper, the researcher wants to emphasis the efficacy of videomodeling in socio-communication intervention and eventually improving the child's theory of mind. Charlop-Christy, Le and Freeman (2000) highlight that since the videomodeling is the portrayal of individual's target behavior, it contains the observation of the video record and illustrated the behavior in more clear terms. It can assist in repeated exposure and can be performed by anyone who participates in the recording (Nikopolous and Kenan, 2006). Mirenda (2003) in her study suggested that video modeling increases the child's use of social language in several play activities with their peers, particularly with natural and undefined verbalizations. Video feedback ensured a consistency in the improvement of social language. Additional studies show that many children with autism find watching videotapes to be reinforcing and very motivating (Banda et al., 2010).

## II. KEY TERMS

- **ICT:** Information and communication technology which may be used as a visual and auditory aid for intervention, in this study the use of video social stories is implied
- **Social Stories:** The customized stories from the individuals social incidences consisting pictorial / visual representation and short instructions used for children with Autism to give social skills training.
- **Multiple Disabilities:** It is referred as the combination of two or more disabilities, present study refers to children with Autism and Intellectual disabilities.
- **Self Instructional Module:** Teaching aids used for the children with Autism which requires less therapist intervention, as the self explanatory tool helps them in engaging as per the child's capacity.

## III. RESEARCH QUESTIONS

1. Are social stories intervention used in special schools for teaching social skills to children having Autism with Intellectual disabilities?
2. Is video-modeling a practical option as a module for social stories for teaching social skills to children having Autism with Intellectual disabilities?
3. What measures are to be taken to ensure video-modeling module is available as a tool for social stories in daily intervention?

## IV. OBJECTIVES

The objective of the study were as follows-

1. To find the level of knowledge on social stories intervention strategy for teaching social communication children with Autism and Intellectual Disabilities.
2. To find the opinion of special teachers on employing videomodeling as an intervention for social stories intervention strategy for teaching social communication children with Autism and Intellectual Disabilities.
3. To assess the accessibility of the videomodeling strategies in special school set up.

## V. HYPOTHESIS

- There is no significant difference in the opinion of using in the video modeling based social story intervention for social skills of male and female special educators.
- There is no significant difference in the scores on the opinion of using video modeling based social story intervention for social skills of the less experienced and more experienced special educators.

## VI. METHOD

The present study tries to see the opinion of the professionals on the efficacy of video-modeling in socio-communication intervention and eventually improving the child's theory of mind. The descriptive survey method has been used in this study to obtain the information of video-modeling in socio-communication intervention as a survey aims at collecting detailed description of existing phenomenon with positive intent of employing the data to justify present condition and practices to make intelligent, plan for future.

## VII. SAMPLE

For the study 40 special educators (both male and female) working in schools of Delhi-NCR were selected. The participants comprised from 25 to 35 years of age with experience from 2 years to upto 5 years in the field. The participants were selected through a purposive sampling procedure.

## VIII. TOOL

The questionnaire contained 20 items described under 3 domains –social stories (basic knowledge); Video modeling as a module (evidence based practice at special schools); access to video models (economic and administrative decisions in using videomodeling as a tool).

## IX. ANALYSIS OF DATA

For the statistical treatment of the data obtained Mean (M), Standard deviation (S.D.) and t-test were used. The statistical treatments of the parametric tests were used on the assumption that the scores on attitude related inclusive education were expected to be normally distributed over the whole population.

The proposed null hypothesis was tested by the students't-Test. The significance of difference was tested at the 0.05 and 0.01 level of significance using students' t- test. And the hypothesis were accepted as if the calculated t value is less

than tabulated 't' value i.e.  $t_{tab} > t_{cal}$ . The data was analyzed both quantitatively and qualitatively to support the research study

**TABLE: 1** (Mean, Standard Deviations and 't' values of gender based comparison)

S#	Gender	N	Mean	SD	't'	df	Level of significance
1.	Female	28	26.07143	3.980774	0.691115	38	Significant at .01 & .05 Levels
2.	Male	12	26.66667	4.396969			

\*Table value (at the Df 38) = 2.03

### Interpretation

Table 1 reveals that the mean difference between male and female teacher significant at 0.05 and 0.01 level as  $t_{tab} < t_{cal}$ . Thus our null hypothesis is accepted.

## X. RESULTS & DISCUSSION

The findings of the questionnaire indicate that the professionals feel the need of using ICT in the intervention process for children with Autism Spectrum disorder with Intellectual disabilities. The results showed that 74% participants were users of Social story intervention in their sessions to model good behaviors and address challenging behaviors in class. Giving answer to the first research question off social stories intervention is used in special schools for teaching social skills to children having Autism with Intellectual disabilities. This is however used in the form of scrap books or photo album with instructions. A few have tried to use it through a computer or laptop and even computer tablets for easier maintenance and reusability.

From the participants 89% of them felt that video-modeling is a more efficient medium to engage the child in the session where the repetition of the target behavior made the session more successful. On the question of video-modeling being a practical option as a module for social stories for teaching social skills to children having Autism with Intellectual disabilities, teachers have emphasized that ICT based social stories will be more effective for children with Autism Spectrum Disorder as it will provide predictability to expected response, assist children to remember experiences, adds visual imaging of how the social experiences is portrayed and allows repeated practices and makes mimicking effective. It is attractive and flexible to be viewed at the convenience and has all the merits of an Audio-Visual aid. To the research question of measures to be taken to ensure video-modeling module is available as a tool for social stories in daily intervention 71% participants voiced the need for provision of procurement of video modeling at the school or the child's personal level if not at the school or institution level. Several recent studies on content customization for children with ASD explore the possibility to setup user-tuned content in order to address the children's interests. Most important and interesting observation was that the teacher's felt it did justice to the therapist in terms of time saving and allowing the interventionist to focus on newer goals, the child gets the option of multi-prompting and at times understanding different consequences to different responses.

And most predictably videomodeling allows faster presentation of stimulus which engages the child through an effective session.

## XI. CONCLUSION

Through the study it can be gathered that special educators working in the Delhi-NCR feel that social skills are the most relevant for sessions and training on socio-communication areas of children having Autism & Intellectual disabilities. It also emphasized the implications of the disability reduces as now that the training on Social skills could be best imparted through use of Video modeling module of social stories. Since the impact of Video modeling module is in its ability to reduce intervention time on social skill training, it seems like an economic option to be made available to each child. It will have higher impact on the comprehension of social behavior by the Children who receive intervention. The focus being on the School management to understand the need and to make provisions that video modeling module could be made available for daily class room intervention. It was also highlighted that parents of children having Autism & Intellectual disabilities would be willing to use and procure video-modeling module for social skill training for their daily communication and socializations. The challenge is to develop a culture fair videomodeling module of social stories true to the age level needs, with the right accessible technology and devised for the wider range of the population that have less provisions of intervention and services where this medium of training would be a necessity than an alternative.

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