

**“Evaluation and Designing of TLM (Teaching Learning Material)  
for children with autism”**

**SUMMARY SUBMITTED  
TO**

**BABASAHEB BHIRAO AMBEDKAR UNIVERSITY  
(A CENTRAL UNIVERSITY)**

**LUCKNOW**

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## SUMMARY

Autism was first identified in 1943 by Leo Kanner, an American psychologist. Kanner noticed distinctive, common characteristics within a subgroup of children in whom other mental disorders had been diagnosed originally. Kanner recognized the inability of this subgroup to relate in the ordinary way to other people and situations, and he described this behaviour as “extreme autistic aloneness” (Kanner, 1943).

The term autism is derived from the Greek word *Autos*: means SELF. Autism is a complex neurobehavioral disorder characterized by impairment in reciprocal social interaction, impairment in communication, and the presence of repetitive and stereotypic patterns of behaviors, interests and activities. The logo of Autism is puzzle, because Puzzle indicates the mystery and complexity of Autism; Each puzzle piece indicates the child with Autism waiting to complete the picture and give it a meaning. Autism spectrum disorders (ASD) are complex neurodevelopmental disorders that include deficits in social interaction, communication, and the presence of repetitive and restricted behaviors. The symptoms are generally present before the age of 3 years and may be accompanied by impairment in cognitive functioning, learning, attention, and sensory processing (Coplan, 2010).

Autism Spectrum Disorder (ASD), sometimes referred to as “autism”, is “a chronic disorder whose symptoms include failure to develop normal social relations with other people, impaired development of communicative ability, lack of imaginative ability, and repetitive, stereotyped movements” (Carlson, 2007 ).

Individuals with autism disorder have markedly different social and emotional actions and reactions than non-autistic individuals. For example, many autistic children do not seem to care whether or not they get attention from their parents. ASD also has an affect on IQ. While 30% of individuals with autism have an average or gifted IQ, 70% are considered mentally retarded (Sarason&Sarason, 2002,).

The present study was planned on the basis of following objectives:

- To identify children with Autism in Lucknow city.
- To explore Teaching Learning Material used by various institutes having children with Autism.
- To design low cost Teaching Learning Material for children with Autism.
- To check the acceptance of developed low cost Teaching Learning Material by children and teacher.
- To study the impact of developed low cost Teaching Learning Material on children with Autism

Chapter 1 dealt with the introduction part. It includes the brief information about Autism, definitions of autism, various types of autism disorder, some eminent people with autism, characteristics of autism, myths and facts related to Autism disorder, symptoms of autism, causes of autism, diagnosis of autism, assessment methods of autism, rationale, objectives of research, limitations of the study and hypothesis.

Chapter 2 dealt with the review and literature of the study. Prior researches and studies related to the topic were studied to assess research gaps. Different views and researches of authors about the study were divided in various sections:

- Researches related to Autism
- Researches related to the TLM used for Autistic children
- Researches related to study the impact of TLM on Autistic Children

Chapter 3 dealt with the materials and methods as required to conduct the study. The study encompassed 100 respondents and data was collected from different NGOs for Lucknow. The NGOs selected in Lucknow were Subh Lakshya, Navdeep, Parvarish, Jinglebell, Samarpan, Pyssum, Chetna, Asha cantt school and Touch and care. Standardized scale (ISAA) along with checklist, observation sheet and experiment table

were used to collect data. Statistical Analysis was done through descriptive statistics in the form of frequency, percentage, mean, SD and relational statistics in the form of ANOVA, paired t test and chi square.

Chapter4 dealt with the results and discussion of the study. The collected data was presented in tabular and graphical form and the results were discussed extensively.

### **Major Findings of the Research:**

- More than half of the respondents were between the age group of 5-8 years of the respondents were between the age group of 9-12 years.
- More than 90.0 % of respondents were boys while other 10% respondents were girls.
- More than 55.0 % of the respondents had mild autism, 43.0 % of the respondents had moderate autism and very few 2.0 % had severe autism.
- More than half (55.5%) of the boys and 50.0% of girls had mild autism, 42.2% of the boys and 50% of girls had moderate autism and very few 2.0% of boys had severe autism. None of the girls were having severe autism. More than half of the respondents (60.3%) in the age group of 5-8 year and 47.6% of respondents in the age group of 9-12 year had mild autism. Less than half ( 36.2%) of the respondents of age group 5-8 year and 52.3% respondents of age group 9-12 year had moderate autism. Very few 3.4% respondents in age group of 5-8 year had severe autism.
- Regarding levels of Autism in mild category, 53.0 percent respondents were having mild autism and their scores varied from 70-106 in which 20.0 percent respondents scored between 70-82, while 12.0 percent respondents scored between 83-94 and 21.0 percent respondent scored between 95-106. Regarding level of Autism in moderate category, 45.0 percent respondents were having moderate level autism and their scores varied from 107-153 in which 20.0 percent respondents scored between 107-122, while 22.0 percent respondents scored between 123-138 and 30.0 percent respondents scored between 139-153. Very few

respondent 2.0 percent were having severe autism and their score obtained were more than 153.

- Regarding level of autism in mild category across gender more than half (53.3percent) boys and 50.0 percent girls were having mild level Autism and scores varied from 70-106 , in which 22.2% only boys score between 70-82, while 12.2%boys and 10.0% girls score between 83-94 and 18.8%boys and 40.0% girls score between 95-106. Regarding level of autism in moderate category across gender 33.3percent boys and 50.0percent girls were having moderate level Autism scores varied from 107-153, in which 18.8% boys and 30.0% girls score between 107-122, while 22.2%boys and 20.0% girls score between 123-138 and only 3.3%boy's score between 139-153. Regarding level of autism in severe category across gender very few 2.2percent only boys had severe level autism score varied from more than 153. None of the girls were found in this category.
- Regarding level of autism in mild category across age more than 56.8 percent respondents of age groups 5-8years and 47.6percent respondents of age group 9-12years were having mild level autism scores varied from 70-106 , in which (24.1% ) respondents of age 5-8 years and (14.2%) of age 9-12 year score between 70-82, while (12.0% ) respondents of age 5-8 year and (11.9%) of respondents age 9-12 year score between 83-94 also (20.6%) respondents of age 5-8 year and (21.4%) respondents age of 9-12 year scores between 95-106. Regarding level of autism in moderate category across age more than 68.9percent respondents of age group 5-8 years and were 52.3percent respondents of age group 9-12 years were having moderate level autism scores varied from 107-153, in which (29.3%) respondents of age 5-8 year and (26.1%) respondents of age 9-12 year score between 107-122, while (34.4%) respondents of age of 5-8 year and (23.8 % ) respondents of age 9-12 year score between 123-138 and (5.1%) respondents age of 5-8 year and (1.3%) respondents age 9-12 year score between 139-153. Regarding level of autism in severe category across age very few 3.4percent respondents of only age group 5-8 years were having severe autism.

- Mean scores of different parameter ranged from 27.36 - 11.31, where, social relationship and reciprocity category had highest score (27.36) while cognitive category had lowest score (11.31).
- The mean scores on different parameter showed that respondents of age group 9-12 years scored more than respondents of age group 5-8 years in all categories except emotional responsiveness, where 5-8 years respondents scored more.
- Regarding availability of TLM, it was concluded that most of the TLM mentioned in observation sheet were available in all the NGO's.
- Regarding category of autism pre and post intervention evaluation, 55.0percent of the respondents had mild autism before intervention, while after intervention 60.0percent of the respondent came in category of mild autism whereas (45.0percent) respondents had moderate autism before intervention and after post intervention there were 40.0percent respondents.
- Regarding category of autism, pre and post intervention evaluation across gender, (50.0%) of the boys and few (5.0%) girls had mild autism before intervention and after intervention more than half (55.0%) of the boys and few (5.0%) of girls had mild autism, While (40.0%) of boys and (5.0%) of girls had moderate autism before intervention, after intervention (35.0%) of boy and (5.0%) of girls belonged to moderate category of autism.
- Regarding category of autism, pre and post intervention evaluation across age (37.5%) of respondents of age 5-8 year and (17.5%) respondents of age 9-12 year had mild autism before intervention and after intervention (40.0%) respondents of age 5-8 year and (20.0%) respondents of age 9-12 year had mild autism, While (27.5%) respondents of age 5-8 year and (17.5%) of respondents of age 9-12 year had moderate autism before intervention, after intervention (25.0%) respondent of age 5-8 year and (15.0%) respondents of age 9-12 year belonged to moderate category of autism.
- Regarding level of autism in mild category pre and post intervention evaluation, (5.0%) of respondents had Mild level of autism score between 70-82, further (2.5%) of respondents score between 83-94 and (17.5%) of respondents score

between 95-106 also had mild level of autism before intervention. After intervention (17.0%) of respondents had Mild level of autism score between 70-82, (27.5%) of respondents scores between 83-94, whereas (17.5%) respondents score between 95-106 also had mild level of autism after intervention.

- Regarding level of autism in moderate category pre and post intervention evaluation, (35.0%) respondents score between 107-122, while (32.5%) respondents score between 123-138 and very few (7.5%) of respondents score between 139-153 before intervention. After intervention (35.0%) respondents score between 107-122, while (2.5%) respondents score between 123-138 had moderate level of autism after intervention.
- Regarding level of autism in mild category pre and post intervention evaluation across gender, increase in the number of respondents (boys) after intervention in the mild autism category, in the pre intervention 5.0percent boys scored 70-82 but post intervention the percentage of boys 17.5percent, similarly pre intervention 2.5percentage boys scored 83-94 but post intervention, the percentage was 25.0percent. There was decrease in the percentage of respondents in mild autism category where the 15.0 percent boys scored between 95-106 pre intervention but only 15.0 respondents were found in this category post intervention. Similarly 2.5percent girls scored between 83-94 and 95-106 respectively post intervention in mild autism category.
- Regarding level of autism in moderate category pre and post intervention evaluation across gender there was decrease in the percentage of respondents in the moderate autism category also, pre intervention 30.0percents boys scored 123-138, but post intervention the percentage was 2.5percents through the no. of respondents (boys) remain same scored 107-122. Post intervention also while no boys scored between 139-153 post intervention. While only 5.0percent girls scored between 107-122 post intervention.
- Regarding level of autism in mild category pre and post intervention evaluation across age, (2.5% ) respondents with both age group 5-8 years and 9-12 year belonged to Mild level of autism score between 70-82, while (2.5%) respondents of age 5-8 year score between 83-94, (10.0%) respondents of age 5-8 year ,

(7.5%) respondents age of 9-12 year with the score of 95-106 before intervention. After intervention (10.0%) respondents age 5-8 years, (7.5%) respondents age of 9-12 year had Mild level of autism score between 70-82, further (22.5% ) respondents of age 5-8 year and (5.0%) respondents of age 9-12 year score between 83-94 while (10.0%) respondents age of 5-8 year and (3.5%) respondents age of 9-12 year scores between 95-106.

- Regarding level of autism in moderate category pre and post intervention evaluation across age, (20.0%) respondents of age 5-8 year, (15.0%) respondents of age 9-12 year score between 107-122, while (22.5%) respondents of age 5-8 year and (10.0%) respondents age of 9-12 year score between 123-138 and only (7.5%) respondents age of 5-8 year had moderate level of autism before intervention. After intervention (20.0%) respondents of age 5-8 year and (15%) of age 9-12 year score between 107-122, (2.5%) respondents only age group 5-8 year score between 123-138.
- Mean scores of different parameter pre intervention ranged from higher to low( 27.15-11.35) social relationship and reciprocity category had higher score 27.15 while cognitive category had lowest score 11.35 ,even all the parameters like emotional responsiveness mean score 13.52, Speech Language and Communication mean score 21.65, Behaviour pattern has 18.45and sensory aspect had 14.45 mean score. Mean score of different parameter of post intervention ranged from higher to low (23.40-11.97)social relationship and reciprocity category had higher score 23.40 while sensory aspects category had lowest score 11.50 ,even all the parameters like emotional responsiveness mean score 20.30, Speech Language and Communication mean score 20.30, Behaviour pattern has 20.30 and cognitive component had 11.97 mean score.
- Mean scores of different parameter pre intervention across gender, boys ranged from higher to low( 26.86-11.30) and girls (29.75-11.75) boys in social relationship and reciprocity category had higher score 27.15 and girls 29.75, while cognitive category had lowest score 11.30 of boys and 11.75 of girls. Even all the parameter like emotional responsiveness mean score of boys 13.19 and 16.50 of girls, Speech Language and Communication mean score of boys 21.75

and girls 20.75, Behaviour pattern mean score of boys 18.25 and girls 20.25, sensory aspect boys had 14.27 mean score and girls 16.00. Mean score of different parameter of post intervention ranged from higher to low (23.40-11.97) social relationship and reciprocity category boys had higher score 23.16 and girls 25.50, while cognitive category boys had lowest score 11.8 and girls had lowest score 10.5 in sensory aspect, even all the parameters like emotional responsiveness, Speech Language and Communication and Behaviour pattern boys mean score was 20.41 and girls had 19.25 mean score, sensory aspect mean score of boys was 11.61, cognitive component girl had mean score 12.7.

- Mean scores of different parameter in pre intervention across age, which was divided in two group among 5-8 year and 9-12 years and score ranged from highest to low (28.19- 25.21 highest score) and ( 11.26 -11.50 low score). The respondents of age 5-8 year score (28.19) and (25.21) score of age 9-12 year had highest score in social relationship and reciprocity, while respondents of age 5-8 years had lowest score 11.26 in cognitive category and 11.50 score was age 9-12 year. Even all the parameter like emotional responsiveness mean score of respondents of age 5-8 year was 12.65 and respondent of age 9-12 year score was 15.14, category of Speech Language and Communication the mean score of respondents of age 5-8 years was 21.11, Behaviour pattern category respondents mean score of age 5-8 was 18.03 and Sensory aspect had mean score 14.52 of respondents age 5-8 years and 14.21 mean score was 9-12 years. After intervention the score ranged from highest to low (24.23 age between 5-8 year highest score, 21.85 age between 9-12 year) and ( 11.46 age year between 5-8 year low score, 11.57 age between 9-12 year ). The respondents of age 5-8 year score (24.23) and (21.85) score of age 9-12 year had highest score in social relationship and reciprocity, while respondents of age 5-8 years had lowest score 11.46 in sensory aspects and 11.57 score was age 9-12 year. Even all the parameter like emotional responsiveness, Speech Language and Communication, Behaviour pattern mean score of respondents of age 5-8 year was 19.80 and respondent of age 9-12 year score in same category was 21.21 and cognitive category had mean score 11.73 of age 5-8 years and 12.42 mean score was 9-12 years.

- Regarding acceptability of low cost TLM by teachers and children, it was concluded that almost all the low cost TLM were accepted by both teachers and children.
- Regarding category of autism 26.3% of the respondents had mild autism while 23.8 percent respondents had moderate autism post intervention in case group.
- Regarding category of autism across gender, more than half (45.0%) of the boys and (7.5.0%) of girls had mild autism While (42.5%) of boys and (5.0%) of girls had moderate autism post intervention in case group.
- Regarding category of autism across different age group, 32.5 percent respondents belonging to age of 5-8 years and 20.0% respondents belonging to age group of 9-12 years had mild autism while 20.0% respondents of age group 5-8 year and 27.5% respondents of age group 9-12 year had moderate autism post intervention in case group.

Results after testing of various hypotheses revealed that

- No significant difference was found in the percentage of respondents belonging to different gender in the category of Autism.
- No significant difference was found in the percentage at respondent belonging to different age groups in terms of category of Autism.
- Significant difference was seen in term of level of autism across gender.
- Significant difference was seen in term of level of autism across different age group.
- No significant differences were observed in different domains across gender.
- No significant differences were observed in different domains across different age groups.
- Highly significant differences were observed in category of autism in case group post intervention.
- Highly significant differences were seen in different domain post intervention after using the low cost TLM

## **RECOMMENDATION:**

1. Same type of research may be conducted on large sample.
2. Case study or longitudinal study may be done to see the impact of TLM's.
3. Impact of other parameters like external environment, parent child relationship, teacher child relationship etc. on the performance of autistic child may be studied.
4. More TLM's could be prepared for a single domain and their impact could be studied.

## **IMPLICATION:**

1. The results of the study may be beneficial for the teachers who are dealing children with Autism.
2. Low cost TLM could be prepared by the parents and can be used with the children having Autism at home also.
3. Domain specific TLM's mostly liked and accepted by the children with Autism could be used frequently by the teachers and parents to strengthen a particular domain.
4. The results could be used by stake holders or policy makers in framing beneficial programmes for children with special need.

## **CONCLUSION**

Results revealed that boys suffered more compared to girls from Autism. Early age group had high percentage of Autistic children.

The low cost teaching learning material was accepted by children with autism and teacher. Improvement was seen in the children post intervention in terms of category of Autism. More students were seen in mild category compared to pre intervention in case group.

As the intervention was given for 3 months only, thus, improvement was seen at micro level that is, the shift in percentage of children was seen in different levels of category from moderate to mild.

Major improvement was seen in social interaction, emotional, speech and sensory domains.

Thus, it was concluded that the use of low cost teaching learning material was liked by both children with Autism and Teachers and its use effective in terms of improvement in different level of autism and different domains.