EVALUATION OF BASIC SKILLS THROUGH FLASH CARD TEACHING AND THINKING STRATEGIES FOR AUTISTIC CHILDREN

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Abstract: *One of the fastest growing disability categories, autism spectrum disorder is a neurological developmental disability that affects social interaction, communication, and behavior. To meet the needs of this growing population, special and general education teachers need to know the many characteristics of children with autism spectrum disorder, the extreme diversity among these children, and strategies to work effectively with them. The present research is carried out on 20 subjects (autistic children). Each child were assessed on their basic skills like language, reading & writing, number & time, domestic & social work, business & money with the help of BASIC (MR). Similarly their thinking strategies were also assessed with the help of Thinking Strategy Test it includes memory, concept development, reasoning, problem solving. It was followed by 6 months training of respective teaching strategies and again the behavior assessment was done with the help of BASIC (MR) and Thinking Strategy Test. It reveals impact of different teaching strategies.*

Keywords: *autism, children, teaching strategies*

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INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neuro-developmental disorder affecting communication, socialization, thought and behavior and includes individuals with wide range of functional abilities, and the problems may vary from being very severe to being very mild.

Americans with Disabilities Act (1990) defines "Autism as a developmental disability significantly affecting verbal and non verbal communication and social interaction, generally evident before age 3 that adversely affects a child's educational performance. Other characteristics often associated with autism are: engagement in repetitive activities and stereo type movements, resistance to environmental change, or changes in daily routines and unusual responses to sensory experiences. The term does not apply if a child's educational performance is adversely affected primarily because the child has a serious emotional disturbance."

It is generally accepted that autism is not a single entity but a series of behaviors with multiple causes and neurological mechanisms. One of the most important causes is genetic transmission. Other identified causes are: infectious diseases, nervous system difficulties, metabolic disorders, & structural abnormalities.

Lonna Wing and her colleagues conducted Population studies at the Medical Research Council's Social Psychiatry Unit in London which reveal that the core features of autism: i.e. Impairment in communication imagination and socialization form a distinct triad. The study also brought out clearly the close link between autism and mental retardation.

86% of 44 children in the IQ range of 0-19 showed the social impairments of autism. The study covered 35000 children under the age of 15 years. It is estimated that approximately 70% of the individuals with autism have an additional diagnosis of mental retardation. Compared with mentally retarded people individuals with autism have more intellectual strengths which can be above average in many areas and wider disparity between skills and deficits. Gross motor skills of children with autisms tend to be stronger as well. Mentally retarded children have better social and communication skills with regards to their overall development.

Little research has been conducted by Grinker et al. (2012) on behavioural characteristics of children with ASD from diverse cultures within the US or from countries outside of the US or

Europe, with little reliable information yet reported from developing countries. We describe the process used to engage diverse communities in ASD research in two community-based research projects—an epidemiological investigation of 7-12 year olds in South Korea and the Early Autism Project, an ASD detection program for 18-36 month old Zulu-speaking children in South Africa. Despite the differences in wealth between these communities, ASD is under-diagnosed in both settings, generally not reported in clinical or educational records. Moreover, in both countries there is low availability of services. In both cases, local knowledge helped researchers to address both ethnographic as well as practical problems. Researchers identified the ways in which these communities generate and negotiate the cultural meanings of developmental disorders. Researchers incorporated that knowledge as they engaged communities in a research protocol, adapted and translated screening and diagnostic tools and developed methods for screening, evaluating, and diagnosing children with ASD.

Barber et al. (2011) extended the findings of Watt et al. (2008) by investigating repetitive and stereotyped behaviors (RSB) demonstrated by children (n = 50) and typical development (TD; n = 50) matched on developmental age, gender, and parents education level. RSB were coded from videotaped Communication and Symbolic Behaviour Scales Behaviour Samples (Wetherby et al., 2002) using the Noldus Pro Observer video software. Children with ASD demonstrated significantly higher frequencies of RSB with body objects excluding categories involving banging or tapping objects or surfaces. Behaviors demonstrated by both groups indicated overlapping RSB profiles at this age. These findings highlight the significance of RSB in the early identification and support the need for future research to further determine ASD-specific RSB.

Wetherby, et al. (2007) has reported a study examined social communication profiles from behavior samples videotaped between 18 and 24 months of age in three groups of children: 50 with autism spectrum disorders (ASD), 23 with developmental delays (DD), and 50 with typical development (TD). The ASD group scored significantly lower than the DD group on 5 social communication measures and the TD group on all 14 measures, indicating distinct profiles late in the second year. Understanding was the strongest predictor of developmental level and behavior regulation and inventory of gestures were the strongest predictors of autism symptoms at 3 years of age. The predictive relations suggest five

pivotal skills late in the second year that have a cascading effect on outcomes of children with ASD.

In present investigation an attempt is made to find out:

- What is the pattern of thinking strategies among autistic children?
- What is the nature of level of basic skills among autistic children?
- Evaluation of flash card teaching strategies used for the development of academic skills among autistic children?

HYPOTHESIS

1. Application of teaching strategies will help to bring behavioral change and make the autistic children more social and expressive.
2. Thinking strategies of autistic child's will also change after the application of various teaching strategies.

METHOD

Research Design

In this investigation, independent variable is the application of teaching strategies like flash card strategy where as dependent variable is the performance of autistic children. For the present research work purposive incidental sampling technique was used for the selection of subjects (autistic children).

Sample

The research is carried out on 20 subjects (autistic children). Each child were assessed on their basic skills like language, reading & writing, number & time, domestic & social work, business & money with the help of BASIC (MR). Similarly their thinking strategies were also assessed with the help of Thinking Strategy Test it includes memory, concept development, reasoning, problem solving. It was followed by 6 months training of respective teaching strategies and again the behavior assessment was done with the help of BASIC (MR) and Thinking Strategy Test. It reveals impact of different teaching strategies.

Tools

1. **BASIC-MR (**Behavioral Assessment Scales For Indian Children With Mental Retardation).
2. **Flash Card**

A flashcard or flash card is a set of cards bearing information, as words or numbers, on either or both sides, used in classroom drills or in private study. One writes a question on a card and an answer overleaf. Flashcards can bear vocabulary, historical dates, formulas or any subject matter that can be learned via a question and answer format. Flashcards are widely used as a learning drill to aid memorization by way of spaced repetition.

Visual Support strategies refer to the presentation of information in a visually structured manner. These strategies are effective in helping children with autism understand what is expected of them and how to function appropriately. These strategies support the children's strongest processing area- visual. The visual cues help the child to focus on the relevant and key information. Visual support strategies help children with autism learn better and more effectively. These strategies also minimize stress and anxiety by helping children grasp their environment. Visual support strategies in an early intervention program can include the following.

It is important to determine which   visual representation system is best understood by the child and in what contexts. Various visual systems, such as objects, photographs, realistic drawings, line drawings, and written words, can be used with assorted modes of technology, as long as the child can readily comprehend the visual representation.

Some children may need different visual representation systems in different situations. This may depend upon numerous factors, such as the skill being taught, as well as the unique characteristic of autism: attending, organization, distractibility etc.

3. **Thinking Strategy –** is measured by Swarup-Mehta Test of Thinking Strategies (2008).

RESULTS

Table:- 1 Showing Mean, SD & 't' values between pre-test and post-test scores of BASIC-MR for flash card strategy.

Areas	Groups	Mean	N	Std. Deviation	"t"
Language	Pre-test	24.20	5	8.07	3.074
	Post-test	32.00	5	11.22	
Reading & Writing	Pre-test	13.20	5	1.92	4.164
	Post-test	19.00	5	3.31	

Number & Time	Pre-test	11.00	5	4.35	3.720
	Post-test	20.60	5	6.34	
Domestic & Social work	Pre-test	15.20	5	1.78	3.464
	Post-test	21.20	5	3.89	
Business & Money	Pre-test	8.80	5	1.09	3.816
	Post-test	15.00	5	4.12	
Over all	Pre-test	72.40	5	12.87	3.823
	Post-test	107.80	5	27.38	

Table 1 indicates that on the domain of Language, group has obtained a mean of 24.2 for pre-test session where as for post-test session mean was 32.0 it highlights that significant difference is reported between both these session, 't' is 3.07 (p<.01) it reveals that now the group is able to response much more correct way after using the flash card methods. For e.g. Follow simple commands that call for action, points to pictures in a book, follow questions forms 'which' & 'why' follows left and right, able to tell their own names.

Part 2 of table 1 shows on domain of Reading group has obtained a mean of 13.2 for pre-test session where as for post-test session mean of 19.0 was found which highlights that significant difference was found for both the sessions. 't' is 4.16(p<01) it reveals that now the group is able to response much more correctly after using the flash cards. For e.g.: can match similar colour, able to recall colour names, identify the name of parents, improves reading ability like large prints from news paper, reds signs from board, is able to recognizes own name.

Part 3 of table 1 is based on numerical items, in it group has scored a mean of 11.0 for pre-test session and after the training the mean was 20.6 for the post test session which show that there is a significant difference and 't' is 3.72 (p<.01) which presents that group has shown improvement in the following factors like recall rote counting from 1-10, differentiate between more or less, can do addition of single digits, identifies and speaks math symbols, follow instructions like wait, now hurry later, discriminates between day and night.

Part 4 is the domestic factor, in this a mean of 15.2 is scored for the pre-test session and 21.2 for the post test session which shows the significant difference between the two session and 't' is equal to 3.46 (p<.01) which shows that the progress has been showed by group in keeping the things back to the right place, watering the plants, shows interest in cleaning dust from tables and chairs, folds their own clothes, helps in preparing tea or

coffee prove helpful in cutting vegetables, identify teachers by her name, introducing him/herself, shows interest in greeting others, enjoy singing and dancing with music.

Part 5 shows on domain of the pre-vocational the mean value fond for pre-test session is 8.8 and after the training of 6 months the value of post-test session is 15.0 this shows there is a significant difference and the value of 't' is 3.81 (p<0.01) which is sign of improvement in group like use of sharpener and pencil, using gum/glue to stick things, staple paper by using stapler, assembles similar objects of different sizes, applies medicine on a cut, wrapping of gifts boxes, keep money safely, purchasing with 1 Rs collecting money in their piggy bank.

Part 6 Lastly overall evaluation is represented in the table which highlights that for all their domain. Language, Reading, Writing, Numerical, Domestic and pre- vocational significant difference is reported for the application of flash card teaching and strategy. It can be observed from the table that for pre session mean was 72.4 with the SD of 12.87 but after the application it raised to 107.8 with a SD of 27.38. It improves in the dimensions like responds to verbal or gestural commands, follows question forms, tells was of five familiar's objects, identifies and tells the colours name, copies straight time, recalls the rote counseling, tells their age in years etc.

Table:- 2 Showing Mean, SD & 't' values between pre-test and post-test scores of Thinking areas for flash card strategy.

Areas	Groups	Mean	N	Std. Deviation	"t"
Memory	Pre-test	7.40	5	1.14	5.30
	Post-test	11.00	5	1.58	
Concept Development	Pre-test	5.80	5	.836	2.75
	Post-test	8.00	5	1.58	
Reasoning	Pre-test	5.60	5	1.51	1.71
	Post-test	7.80	5	1.64	
Problem Solving	Pre-test	5.00	5	.707	3.67
	Post-test	6.80	5	.836	
Over all	Pre-test	23.60	5	4.03	4.26
	Post-test	33.60	5	3.64	

Table 2 indicates the domain of memory session and the mean of 11.0 is found for post-test session showing the significant difference between the sessions. The value of 't' is scored 5.30 (p<.01) which highlights that continuous practices improves learning and remembering

skill of the children, rehearsals are done so that child acquired the information. Teachings through various strategies are given which differs from child's nature. Child's performance is based on the items which are involved in the tests and he represents his memory aids towards the stimuli.

In part 2 for the concept development the mean for pre-test session was calculated 5.8 and for the post test session a mean of 8.0 is found indicates the difference is significant. 't' is 2.75 (p<.01) indicates that the group performance is over generalizes, reveals the strengths in the process of abstract, categorization and generalization.

In part 3 a mean of 5.6 is scored for pre-test session and 7.8 is for post-test session revealing the significant difference in the test session administered for reasoning domain. 't' is found equal to 1.71 (p>.05) reveals that group has not shown that much improvement in problem solving, he finds difficulty in recalling relevant information, he is slow in learning, thinking and child is unable to restructures contents which they have learnt.

For the sub test 4th which is based on problem showing the mean values for pre-test and post test sessions are found 5.0 and 6.8 for the session. 't' is equal to 3.67 (P<.01) highlight that the child tries to give immediate answers and solves the problem, child tries to seek freedom from tension for mental satisfaction, shares ideas to attain goals, recognizes and restructures the figural problems.

At last the analysis was done for the total of all the domains representing in table, the difference is found significant for the application of the thinking strategy. It can be seen in table that the pre-session mean was 23.6 with SD of 4.0 but after the training it is raised up to 33.6 with the SD of 3.6. It is observed that group has performed better in learning and remembering, shows their strength to attain goal seek for freedom.

In the present investigation an attempt was made to evaluate different teaching strategies like flash cards, ABA, social interaction and CAI strategies. Findings reveal that application of teaching strategies differs from child to child depend on his or her adopted basic skills. On the basis of above analyzed data it can be said that the individual with autism gains significantly independence, with more control over the time and place of social interactions.

Flash card, like in object modeling, uses predictable and repeated presentations of target behaviors; however, these behaviors are presented in picture format, thus reducing variations in model performance. Apart from this flash card strategy video modeling has

been shown to improve various skills in individuals with autism, including conversational speech, verbal responding, helping behaviors, and purchasing skills. This medium has also been claimed to increase vocabulary, emotional understanding, attribute acquisition and daily living skills.

CONCLUSION

The overall goal of educational programs for all students, including students with autism, is a life with independence and functioning within the community. Reaching this goal requires an education based on the individual needs of the child/student. Setting the individual goals for each child requires realistic assessment of present levels of ability as well as identification of learning deficits. In other words, what can the child with autism do now, what skills does the child excel in, what skills can be enhanced, and what skills does the student need to be able to seek employment and live in the community in adulthood? Are negative behaviors being addressed? What kind of program does it take to accomplish the overall goal? In general, we know that we must structure the classroom environment so the educational program is consistent and predictable for the student. Children with autism are less confused and learn better in that environment. They also learn better with information presented visually as well as verbally. Insofar as is appropriate, children with autism should have opportunities to interact with no disabled peers who can provide models of appropriate behavior, language, communication, social, and play skills.

Students with autism should also have training in community living skills and vocational skills at the earliest possible age. They need to be taught how to interact with others and be provided opportunities to develop relationships with other students. Teaching safety habits, such as crossing the street or asking for help when needed, is critical to developing independence. Learning to make simple purchases and to handle money is another example of a needed skill. All of these skills may be difficult, in varying degrees, for the student with autism to learn. However, ongoing assessment of abilities along with individualized education programs will facilitate the achievement of maximum independence for each child with autism.

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