



Assessment of Slum Children's Cognitive Skills

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Abstract: Cognitive development of young children has always been a matter of concern, especially for the disadvantaged groups in India. Providing attention to the fact of cognitive stagnation due to the consequence of a poor environment, there is a dire need to stimulate the cognitive development of these groups. The thrust of the present paper is also the study of cognitive skills of slum children age group 4-6 years, and enhancing these skills through stimulation programs. Six cognitive skills namely conceptual skills, information, comprehension, visual perception, memory and object vocabulary were identified for the purpose of investigation. Paper also includes the analysis of the pre-test and post-test conditions. The study showed positive improvement in the cognitive skills of slum children after implementation of stimulation programs.

IndexTerms - Cognitive Development, stimulation, Slum children, cognitive skills.

I. INTRODUCTION

Young children are not only growing physically during early childhood, they are also growing mentally. Children of this age continue to advance their skills through observing and interacting with the world around them. They try to learn how to process, store, elaborate and use information. Cognition in its real meaning refers to the higher processes involved in understanding and dealing with the world around us. Cognitive development is interactively linked to the development of emotions, language and physical growth. Cognition is also referred to as a covert mental process; encompassing processes such as thinking, remembering, perceiving, planning, choosing, fantasizing and even dreaming. Simply it can be defined as an activity of knowing: mental process through which knowledge is acquired and problems are solved. Several eminent theories have documented their perspective on cognitive development of young children. Jean Piaget (1896-1980) pioneered in charting the major stages of cognitive development so it is important to place Piaget and his method in historical perspective on cognitive development. Piaget believed that from ages 2-5 years, children have very limited ability to understand the concepts and relationships. He suggested that reasoning in all kinds of cognitive domains (moral reasoning, physical reasoning, and logical reasoning) progressed through a series of universal stages that transcended culture and context. For Piaget, children progressed through levels of knowing or of mental organization (Smith 2002). He viewed child as an active organism who constantly and actively interacts with his environment, hence forth; he divided the cognitive development into four different stages Sensorimotor (0- 2yrs), Preoperational (2-7yrs), Concrete operational (7-11 yrs) and Formal operational (11yrs and older), hypothesizing that children's cognitive processes develop in an orderly sequence. He considered preschoolers in the preoperational stage that stretches from approximately 2-7 years of age.

There are various factors which affect the cognitive development of the child. Ecological context, socio-cultural settings and economic factors are some macro level factors. Age of children has also been found to affect cognitive development. Bhatia (1990) concluded in his study that overall cognitive abilities increase rapidly up to 4 years. After 4 years of age a slight decrease was observed in 4-4.5 years of age and then increase in the cognitive ability was gradual and steady. There are multiple ways to foster cognitive development during the preschool years such as reading books, asking the child to read the symbols (pictures and illustrations) in picture books, drawing, paper cutting etc. The child cannot be developed, but it is possible to create necessary preconditions for the child's development. The home and school environment play an important role in cognitive development. In India, most children do not receive the required stimulation in slum areas due to acute problems of poverty and literacy. Their parents can contribute only to a limited extent to the child's socio-emotional or cognitive development. The most important positive factors in the environment of children from 2-6 years of age are appropriate play materials and equipment, playmates, instruction and guidance, and tasks that are challenging, but not too difficult.

II. EDUCATION OF SLUM CHILDREN

The Right to Education Act 2009 was expected to bring a huge surge of enrolment in urban and rural schools. However, after more than a decade there are millions of children who are out of school in India, most live in urban slums and remote rural areas. A higher proportion of girl children (3.23%) are out of school than boys (2.77%). Girls in slums and rural areas are out of school as they are engaged in domestic work or do not go to school to take care of the younger siblings. Boys drop out of school to supplement household incomes. Lack of healthcare facilities, absence of toilets in schools, and lack of proper

nutrition also leads to an increase in drop-out rates. Focusing on Girl Child and Women Education The cycle of illiteracy will continue if proper steps are not taken in time to reduce drop-out rates, increase enrolment and encourage girl child education and slum children's education. Mother is a child's first teacher. When mothers remain uneducated, they cannot fully comprehend the value of education for

their children. Children of educated mothers have better access to education, proper nutrition, and timely healthcare needs like timely immunization against various diseases.

The biggest challenges that slum children face in getting the education at elementary level relates to unsanitary living conditions, linguistic issues, unfavorable domestic conditions, poor health, surrounding environmental conditions, poor education background of parents and environment that prevails in the schools that the slum children attend. Families living in the slum earn meager wages with no additional health benefits. In such a situation priority given to education often takes a back seat as all the resources get allocated to fulfilling the necessities, indispensable for survival. Study by Debi in 2001 suggested that higher the rate of birth, higher is the rate of drop out from the school.

Unfortunately, due to the lack of resources and education of parents, early education of slum children is not proper and their skill development remains poor. Most of the time of the people living in slums is eaten away by activities that are time consuming and mundane in nature. Often both parents work in the unorganized sector for very low wages under high uncertainty. There is no weightage given to early childhood basic motor and cognitive skill development of children. The age of enrolment in school is higher in slums (UNESCO, 2010) leading to loss of early childhood golden years. The expenditure on education is not taken as a priority in a slum household as a result of which there is no enrolment of children in preschool.

Recent studies have shown that there is a strong correlation between income of the family of the child and readiness of the child to start school (Reardon 2011), readiness is characterized by the basic activities that a four-year-old child can do like counting numerals till 10, making basic art, using imagination to associate shapes with names. Also, some studies have suggested that it is not just cognitive skills that children from poor background suffer from, but also there are behavioral issues along with inability to concentrate on school (Duncan and Magnuson, 2011), this shows that a child from deprived background lag in cognitive skill development that creates (obstacle) in the future learning process.

To give impetus to a child's cognitive development stimulation program are designed. These programs are designed to get the child involved in activities such that their curiosity in their surroundings is aroused and they get a chance to sharpen their minds. All the activities of the stimulation program are designed around developing skill in math, science, logical reasoning i.e., the entire gamut of cognitive skill set.

III. METHOD

The study was conducted 'Spreading smile school' from Gurugram was selected as the locale of the study. The school is run by Shri Shri Gyan Kendra Ngo. The school was selected for study because of ease of accessibility for the researcher. Convenience sampling technique was used in this study. It is a form of non-probability sampling. In this sampling researcher chose those children who were easily available and willing to participate. Slum children attending Shri Shri Gyan kendra (spreading smile school) in Gurugram between the age group of 4-6 years were selected. Approximately 150 children were the sample.

IV. TOOL USED IN THE STUDY

Hema Pandey's cognitive development test for preschoolers (PCDTP) – This test was used to assess cognitive skills in slum children. This test is meant to assess the following cognitive skills: -

1. Conceptual skills
 2. Information
 3. Comprehension
 4. Visual perception
 5. Memory
 6. Object vocabulary
- This test was conducted in both pre-test and post-test phases.

V. RESULTS

S. No.	Cognitive Skills		Mean±SD	t value	p value
1.	Conceptual skills	Pre	12.02±3.22	-31.71	0.00*
		Post	24.71±1.62		
2.	Information	Pre	2.74±1.83	-17.33	0.00*
		Post	7.22±1.87		
3.	Comprehension	Pre	3.64±1.87	-15.30	0.00*
		Post	6.65±0.97		
4.	Visual perception	Pre	4.37±1.80	-7.60	0.00*
		Post	6.24±1.51		
5.	Memory	Pre	7.23±2.04	-4.19	0.00*
		Post	8.48±1.97		
6.	Object vocabulary	Pre	3.76±1.91	-2.87	0.00*
		Post	4.56±1.79		

Above table displays the mean, SD, t value, and p value of pre and post-test of the young slum children related to (cognitive skills) conceptual skills, information, comprehension, visual perception, memory and object vocabulary.

Information: Data pertaining to information skills show that the slum children's pretest mean score was 2.74 and SD was 1.83, but the post-test mean score was 7.22 and SD was 1.87. When the paired t-test was used to compare the mean scores of the before and after intervention condition, the t value was (-17.33; $p < 0.05$), which was significant at the 0.05 level. As a result, it can be said that information skills were significantly improved after intervention.

Comprehension: Data related to comprehension skills revealed that the young children's pre-test mean score was 3.64 and SD was 1.87, but the post-test mean score was 6.65 and SD was 0.97. When the paired t-test was used to compare the mean scores of the before and post-test, the t value was (-15.30; $p < 0.05$), which was found to be significant at the 0.05 level. So the results show improvement in comprehension skills after application of the intervention.

Visual perception: Data pertaining to the use of visual perception revealed that the pre test mean score of slum children was 4.37 and SD was 1.80, but the post-test mean score was 6.24 and SD was 1.51. When the paired t-test was used to compare the mean scores of the before and post-test, the t value was (-7.60; $p < 0.05$), which was significant at the 0.05 level. It was then established that the use of visual perception significantly improved in post-test situation.

Memory: Data related to the memory skills showed that pre-test mean score was 7.23 and SD was 2.04 of young slum children whereas post-test mean score was 8.48 and SD was 1.97. When paired t-test was applied to compare the mean scores of pre and post-test it was found that the t value was (-4.19; $p < 0.05$) which was significantly at 0.05 level. Thus, it was elucidated that use of memory skills differs significantly in pre and post-test conditions.

Object Vocabulary: Data allied to object vocabulary exhibits that pretest mean score was 3.76 and SD was 1.91 of the slum children whereas post-test mean scores was 4.56 and SD was 1.79. When paired t-test was applied to compare the mean scores of pre and post-test it was found that the t value was (-2.87; $p < 0.05$) which was significant at 0.05 level. Therefore, it can be explained that the use of object vocabulary skills differs significantly in pre and post-test conditions.

VI. CONCLUSION:

It is obvious from the result of the analysis done that cognitive skills had improved in children through the stimulation program. Results showed differences in pre and post-test scores of several cognitive skills such as conceptual skills, information, comprehension, visual perception, memory and object vocabulary. Intervention program had a significant effect on the cognitive abilities of ages 4-6 years. It is evident through the study conducted by researcher that intervention improves the cognitive skills among children. Researcher aimed to provide cognitive stimulation to young children (4-6 years) living in slums in Gurugram city, India. 150 children were taken as a sample who were pre-tested on cognitive performances.

