

RESEARCH ARTICLE :

Comparative study of cognitive development of ICDS and non-ICDS children (3-6 years)

■ MADHUMATI KULKARNI

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SUMMARY : The present research has been conducted with the objectives of comparing the cognitive development of ICDS and non-ICDS children (3-6 years) to find out the mean age at which the cognitive abilities viz. verbal, identification, recognition, comparison / discrimination, achievement/ performance, thinking, memory and perceptual abilities- auditory discriminations, olfactory discrimination and taste discrimination develop and also to study the role of non-formal pre-school education in the cognitive development of children. 60 ICDS children were selected from Nanded district, Marathwada region, Maharashtra State, using purposive sampling technique. For data collection Cognitive Development Scale was used. Results of the study revealed that cognitive abilities are increasing with an increase in the age of children and there is a significant difference in the ICDS and non-ICDS children. The overall cognitive ability of children from 3 to 6 years has increased with age and these abilities were already developed to some extent between 3-3 ½ years. Non-formal pre-school education component of ICDS has played a vital role in enhancing the cognitive abilities of children. As results are more inclined towards ICDS children.

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KEY WORDS :

Cognitive development, Cognitive abilities, ICDS

BACKGROUND AND OBJECTIVES

Early childhood a process of psycho amalgamation enables a child to enlarge his repertoire of behaviour and get his needs and capacities fused with ideas and values of the culture and society to which he belongs. Cognitive stages in the development of a child comprises his ability to think, involves the registration of sensory events, efficient recovery from memory, the ability to manipulate images, symbols and concepts in thinking, reasoning, and problem solving Cognitive processes develop in an orderly

sequence viz. sensor, motor, preoperational cognitive and formal operational stage. The present study is focussed on preoperational children (3-6 year). The appropriate care children receive while they are young or the manner in which their needs are met has a remarkable impact on their intelligence, personality and social interaction well into adulthood. Such situation certainly exemplifies to promote early childhood development. Children who are underprivileged continue to face greater deprivation and neglect. But integrated child Development Service (ICDS)

Author for correspondence :

MADHUMATI KULKARNI
Agricultural Technology
Information Center,
Vasantrao Naik
Marathwada
Krishi Vidyapeeth,
PARBHANI (M.S.) INDIA

scheme with its opportunities for early childhood development seeks to reduce both socio-economic and gender inequalities through a package of services including supplementary nutrition, immunization, referral services, health check-up and non-formal pre-school education, as these services are meant for children below 6 years. Non-formal pre-school education of ICDS scheme provides stimulating experience to children which facilitate optimal cognitive development and brings about an improvement in various inter related dimensions of child development such as social, emotional, and cognitive development (Mahajan, 1989). But Sharma (1987) found that mere exposure to preschool education is not enough to result in positive development of aspects discussed above.

The various cognitive abilities studied in the present research are as under:

Verbal ability:

This is the ability to communicate with others.

Identifications ability:

This includes a feeling of familiarity with the objects.

Recognition ability:

This is to know about the object and also involves recall.

Comparison/Discrimination ability:

It revolves around classification, categorization and seriation.

Achievement/Performance ability:

It attempts to classify and match group of different shapes and sizes.

Thinking ability:

It involves the problem solving ability

Memory ability:

It means to recall the story or any incident with the help of clues or situation

Perceptual ability:

It means what we interpret after sensing. It includes;

- *Auditory discrimination:* This means to identify the different sounds.

- *Olfactory discrimination:* This is the identification of smell of different things.

- *Taste discrimination:* It means to identify different taste of food such as salty, sweet and sour.

RESOURCES AND METHODS

The sample for the present study consisted of 120 children (3-6 year), 60 from ICDS and 60 from non-ICDS areas of Nanded district, Maharashtra state using purposive sampling technique sample was elected using purposive sampling technique. After selecting the sample, children were categorized into different age groups and 10 children from each group were selected for study.

For data collection cognitive Development scale devised by Jaiswal *et al.* (1988) was used to study the cognitive abilities *viz.*, verbal, recognition, identification, compare-son/discrimination, achievement/performance, thinking, memory and perceptual abilities *i.e.* auditory, olfactory and taste discrimination. While scale was administered on children, observations were also done simultaneously.

The data collected was coded and tabulated according to the exhaustive categories in the Performa and were then subjected to statistical analysis. *i.e.* Mean, Standard Deviation and t-test.

OBSERVATIONS AND ANALYSIS

The responses observed are discussed as under.

Verbal ability:

Non-ICDS children in the age group of 5-5 ½ years were unable to answer some of the questions falling under the category of verbal ability *viz.*, ‘Where do you post letter? But ICDS children gave all the answers. Results are also supported by the findings of Khosla and Kataria (1989) who found a significant difference between ICDS and non- ICDS children in language ability like object vocabulary, listening and cognitive abilities like object vocabulary, which was possible due to greater exposure at the Anganwadi centres. NIPCCD (1997) revealed that a large majority of children could do rote learning and only one third of the total number of children was able to identify and label two of the primary colours. Cognitive and manipulative competencies require regular input. As all the children were not able to perform the selected tasks.

Identification ability:

Non-ICDS children in the age group of 5 ½ -6 years were unable to identify different parts of the body and pictures of the vegetables but ICDS children gave all the answers. Sharma and Jaiswal (1996) also found that identification ability increases with the age and female scores over male at 3-3 ½ years, where after sex differences are minimized. Khosla and Kataria (1989) found that girls consistently scored higher in test of oral expression and listening comprehension while boys scored higher in action picture, object vocabulary and draw a man test.

Recognition ability:

A sharp increase in this ability was also found in both groups and results are also favouring ICDS children. A significant difference was also favouring ICDS children. A significant difference was also found in this ability between both ICDS and non- ICDS children.

Comparison/Discrimination ability:

In the present study, non-ICDS children were failed to discriminate the shape and texture of objects provide by the researcher. So the mean score shows a decreasing trend in the age group of 4 to 5 years. Khosla and Kataria (1989) found that in shape discrimination test, girls of non- ICDS group because they were exposed to such tasks at home.

Achievement/Performance ability:

Results of the present study revealed that this ability is more inclined towards ICDS children as compared to no-ICDS children. Results are also supported by the findings of Srivastava and Srivastava (1985) that ICDS has a definite impact on the problem solving ability of the children as ICDS children successfully completed

task in 4.7 minutes but non- ICDS children took 6.2 minutes. The Level of achievement in ICDS group was 12.2 and in non- ICDS group it was 7.2. NIPCCD (1997) also found that use of appropriate play and material at Anganwadis has led to facilitate cognitive development of children.

Thinking ability:

There is a significant difference in thinking ability of both the groups of 3-6 years at 10 level of significance. When toys were shown to the children, they were unable to find similarities among the toys, so a decreasing trend is found from 4-4 ½ to 5 ½ -6 years of age group, as mean scores show a fluctuating trend. Although thinking ability is increasing with the age of children but Sharma and Jaiswal (1996) revealed that thinking ability was least developed at all age levels.

Memory ability:

In this ability also a significant difference can be seen. This ability is also increasing with an increase of age and results are again inclined toward ICDS children. Dempster and Rowher (1983) in their study also investigated age differences in children's immediate and free recall memory. The findings suggested age differences in immediate recall of recency items.

Perceptual ability:

This ability is also increasing with age.

Olfactory discrimination:

A significant difference in this ability was found; moreover results are favouring ICDS children. Jaiswal *et al.* (1988) revealed that olfactory discrimination ability is not as developed as auditory discrimination ability, though itself increasing with age.

Table 1 : Overall cognitive development

| Age group years | Sample size | | Mean | | Standard deviation | | t-test |
|-----------------|---------------|--------------------|---------------|--------------------|--------------------|--------------------|--------|
| | ICDS children | Non- ICDS children | ICDS children | Non- ICDS children | ICDS children | Non- ICDS children | |
| 3-3 ½ | 10 | 10 | 82.7 | 44.7 | 12.22 | 7.05 | 1.38 |
| 3 ½ -4 | 10 | 10 | 90.5 | 47.0 | 12.91 | 7.64 | 1.39 |
| 4-4 ½ | 10 | 10 | 93.9 | 67.7 | 7.48 | 8.33 | 1.45 |
| 4 ½ -5 | 10 | 10 | 100.3 | 70.7 | 9.64 | 5.47 | 1.56 |
| 5-5 ½ | 10 | 10 | 101.8 | 77.2 | 9.08 | 7.48 | 1.41 |
| 5 ½ -6 | 10 | 10 | 109.9 | 87.6 | 8.11 | 5.9 | 1.56 |

Significant at 0.10 level

Auditory discrimination:

With the increase of age this ability is also increasing but the mean scores of non-ICDS children show a sharp increase from 3-3 ½ years and 5 ½ -6 years.

Taste discrimination:

The results revealed that ability to discriminate taste is increasing with the age of children.

The overall cognitive development is increasing with the age of children and these abilities were already developed to some extent at 3-3 ½ year (Table 1). Also a significant difference in overall cognitive development of ICDS and non- ICDS children in the age group 3-6 years at 10 level of significance was also found. All the cognitive abilities are showing a gradual increase and there is no sharp increase in these abilities with age, the development of all cognitive tasks was found to be concurrent but not uniform. Moreover the results are more inclined towards ICDS children and this is possible due to greater exposure at the Anganwadi centres. While Bhatia (1990) in his study found that cognitive abilities increase rapidly upto 4 year. After 4 year of age slight decrease was observed in 4-4 ½ years of age and then the increase in the cognitive ability was gradual and steady.

Conclusion :

All the cognitive abilities are increasing with an increase in age. But a significant difference is found in the cognitive abilities of ICDS and non-ICDS children. Cognitive abilities of ICDS Children are found to be better than non-ICDS children. As children enrolled in the Anganwadis were able to answer all the questions asked by the researcher. This is possibly due to non-formal pre-school education provided under ICDS scheme, which has played a vital role in enhancing

cognitive abilities of the children

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