IMPACT OF PRE-SCHOOL EDUCATION ON CONCEPT FORMATION OF TRIBAL CHILDREN

BY

VIJAYALAKSHMI, K.

A Dissertation Submitted to the University of Madras
in Partial Fulfilment of the Requirements for the
Degree of Master of Science
May 1978

A C K N O W L E D G E M E N T

The investigator expresses her deep felt gratitude to Dr (Mrs.) Jaya Muthu, M.Sc., Ph.D., Professor in Child Development, Sri Avinashilingam Home Science College for Women, Coimbatore for her valuable guidance rendered throughout the study. She is grateful to Dr (Mrs.) Rajammal P.Devadas, M.A., M.Sc., Ph.D., (Ohio State) Principal, Sri Avinashilingam Home Science College for Women, Coimbatore for her able guidance and help in conducting the study. Her special thanks are due to Selvi G. Baratha, M.Sc., B.Ed. for the kind help given.

The author conveys her sincere thanks to the tribal children and people of Marudhamalai for their kind help rendered in accomplishing this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

I INTRODUCTION

India marches on the feet of children and lives in the hands, hearts and heads of them (Davies, 1976). The children are the strength of any country, and they are the vulnerable units of a strong nation (Nagaraj, 1977 and Jayakaran, 1971). Preschool children constitute one of the important vulnerable segments of the population (Gopalan et al, 1971).

The way people are handled as children in childhood has a great impact on their later personality development. The tribal population of India is about 38 millions and out of this, the population of the age group of three to five is about 3.5 millions as remarked by Koske (1977). It is imperative that the peopblem of education and development of this large number of tribal children have to be planned seriously.

There can be no doubt that children of rural and tribal are the most neglected group among the vulnerable segments (Sajon, 1970). It is the duty of the country and society to provide minimum facilities to their needs and to protect the mental balance of this larger developing sector of the nation inorder to build a strong future (Singh et al,1977).

One of the most significant findings that has emerged from many studies is pre school education with integrated programme to meet the physical, emotional, intellectual and social needs of the children (Indian Council for Child Welfare, 1976).

Concepts are the essential modus operandi of the higher mental process, of problem solving or reasoning (Thompson, 1969). During the formative years, children need to develop skill, understandings, perception and concepts that encourage confidence in one's ability to shape as well as share, to create as well as adapt to changing conditions (Fereh, 1977). Pre school education with a carefully planned variety of experiences provides opportunities for these young children to develop linguistic, as well as perceptual and conceptual skills (Read, 1967).

Concepts serve as crucial links between the environment and individual. Pre school children are capable of forming concepts about all things they see in their immediate environment (Marker and Risinger, 1977). When concepts are inadequate, they have an adverse effect upon the child's interpretation of things as rightly pointed out by Frank (1963) and Skinner (1974). A study conducted by

Padmini (1972) with selected pre schoolers attending and not attending preschools revealed that, there was a significant difference in the concepts of these children. Data on similar research is scarce. Hence this study has been geared towards finding out the impact of preschool education on the conceptional skills of tribal children with a hope to make recommendations to the nation and the society to provide necessary facilities to all these neglected and disadvantaged tribal children and create conditions which will enable them to enjoy the basic facilities and make the most of it.

II REVIEW OF LITERATURE

Since the study is concerned with the significance of preschool education on the conceptual skills of tribal children, the related literature is reviewed under the following headings.

A. Significance of pre school years

B. Importance of pre school education

C. Definition of concepts

D. Importance of concepts

E. Concept formation in pre school children

F. Programmes for tribal children

A. Significance of Pre School Years:

The first five years of a child's life are its most formative years. The child's experiences therefore during this critical phase will largely determine its later development (Muralidaran (1969), Sundaram (1973) and Shah, 1976).

Nagaraj (1977) opines that the impressions one gains, the experiences one goes through, the credits and debits of human interaction in this formative age is very important. Swaminathan (1970) indicates that childhood has a vast territory and beginning of all aspects of human growth and development. Character formed at this age have a profound

effect on the future life, " as the twig is bent so is the tree inclined" (Shamsuddin, 1971).

The entire span from childhood to old age is influenced by the experiences of the pre school age. This is the period when the foundations are laid for the future growth and development and these are most plastic and impressionable years in individual's life (Devadas 1964, Khosla 1966, Verma 1972 and Chandrawami et al 1973).

First four or five years in an individual's life is the period of most rapid growth in physical and mental characteristics and of greater susceptibility to environmental influences.(Reed 1967, Dayal 1970 and Verma 1972). Since Narmada (1972) and Muralidaran (1973) say pre school age is one of the important periods in one's life, today the attention of the whole world is focussed on this tender age.

In this present century which is called the century of the child (Gandhi, 1971 and Aranha, 1969), the development of a state depends on the health and vitality of its children below the age of six. (Rao and Chandrasekaran, 1977). If the world is to be changed, it is with the child's mind

that a beginning must be made. He is the building material that will fashion the structure of the society.

B. Importance of Pre School Education:

Education is an essential need of the pre school child, since that could help him to develop knowledge, judgement, moral and social values and enable him to play his role in society as a youth and adult (Namavathy, 1973).

According to the Indian Council for Child Welfare ~~Welfare~~ 1977), balwadi educates pre school children through an integrated programme for meeting the physical, mental, social and emotional needs of the children.

Pre school education helps the child to explore and know his world, to discover himself and to become acquainted with many sources from which he can learn (Shamsuddin, 1971).

Shah (1976) remarked that unless and until the citizens are trained for the citizenship, it is hard to have welfare and development of the community. Nursery schools are the schools which can take the responsibility of preparing well disciplined citizens in future. It is an organisation for the organised care and education of a child from two to five years of age, that aims at providing

wholesome environment for the child when this is most imperative and also builds sound health and habits, unfolds mental powers, develops sociability and lays a foundation for bright future developing his latent capacity.

Wadhwa (1978) exhorts that pre school education is a designed process to promote integrated and harmonious development within the culture of a person, as much as his endowments allow. A sapling's roots have to be watered properly so that it flowers and yields healthy fruit. Mathur and Kumar (1976) stated that pre school education will develop in the child desirable attitudes, values and behaviour patterns and aim at providing environmental stimulation.

To Ramji and Goyal (1972), pre school is an institution which supplement the home and provide children with necessary experiences and companionship.

In Green and Woods (1969) point of view, pre school education is the best possible environment for the optimal development of children. To Jill and Kent (1970) pre school education makes children more confident socially and helps them to acquire emotional control. According to Premalatha (1967), Lewis (1970) and Taylor et al (1974), helping the children to develop self-reliance is one of the foremost objectives of the preschool education programme.

Sethi (1977) strongly views that preparing a child for the first grade in terms of mere academic preparation is a top priority, of all the objectives of pre school education. Rao (1978) also stresses that experience the child undergoes in early years cumulatively build up the attitude, positive or negative, towards learning.

C. Definition of Concepts

The varied definitions on concept are presented here:

Sperling (1970) and Bean (1974) review concepts as generalised notions or image that need not necessarily be based on any actual experience. Marx (1970), Kagan (1971) and Kagan et al (1972) view concepts as a partition of stimuli into categories based on a rule applied to specified stimulus attributes.

To Smith et al (1967), concepts are understandings, knowledge or formulated thoughts that provide a background for future learnings. Murphy (1964) and Melton (1964) describe concept as a symbol that stands for a specific quality possessed in common by a number of stimuli. Concepts are formed in response to need and in the light of experience (Kuja, 1955). Cognitive development depends on the formation of specific, definite and conscious concepts.

D. Importance of Concepts

Concepts are tremendously important in the psychological behaviour of men. They provide basis for the language abstractions of man and also the essential modus operandi of the higher mental processes of problem solving or reasoning (Gepal, 1964 and Thompson, 1969). Hurlock (1972) points out that concepts are important because they determine what one knows and believes and to a large extent, what one does.

Concepts reduce the complexity of the environment, helps to provide for direction, prediction and planning for any activity, reduces the necessity of relearning and permits ordering and relating classes of objects and events such as cause and effect (David, 1960 and Freeman, 1976).

E. Concept Formation in Pre School Children

The concepts of children develop from concrete to abstract, vague to clear and simple to complex. Jain and Kapoor (1974) has summarised the following stages in the formation of concepts.

1. Sensory Exploration

A child tries to know about the various objects in his immediate neighbourhood with the help of sensory exploration.

2. Motor Manipulation:

To the knowledge gained by his senses, a child adds the knowledge gained by his motor organs.

3. Asking Questions:

A child of six years asks too many questions so that he may add to the knowledge and his experience or judge them.

4. Reading:

The child comes to know the meanings of different things through study and forms a clearer and more beautiful picture of the concepts he has previously learnt.

5. Reasoning:

It enables child to see relationship whereby he is in a position to find out more meanings of various concepts.

6. Training:

In order to observe the objects well, the child's attention has to be concentrated on them.

Mangal (1977) states that the concepts of the child in the beginning are characterised by vagueness, indefiniteness and inadequacy. To Ausubel and Sullivan(1970) and Edwards (1969) concept formation consists essentially of a process of abstracting of a class of objects (or) events.

Boas (1974) views the ability to form concepts is generally learned and developed by the child as it grows. In this process, language and development of vocabulary also play a part. Language helps to define concepts and the manipulation of the concepts in thinking process. Without this process of concept formation, thinking will not be possible at any efficient level.

Conceptual process involves both the differentiation of impressions which are originally diffuse and the integration of impressions which are originally detailed. (Murrell, 1968, Marx 1970 and Osser 1970). According to research findings (Sigel 1953 and 1961) abstracting size attributes is a more difficult process than abstracting such attributes as colour (or) from because the size of an object is apprehended only when it is compared with another object. Children at 3 to 5 years of age begin to acquire this ability to compare and thus to abstract and conceptualize the size attribute of objects. Research findings show that the salience of various concepts is related to age during the pre school years. Children between 3½ and 6½ years of age were given a collection of toys. The children found it easier to systamatic choices in how to group use colour, size and form, the younger children using colour and size more than form, the older ones using form more easily than colour and size (Smart and Smart, 1971).

To find out when children begin to grasp concepts, Welch (1940) gathered data from about 80 children aged between 21 and 72 months. He found that the age of 21 to 26 months, a group of children manifested an average of little more than one first order abstract concept. The trend of development with increasing age was linear with an average of about six concepts at age 34 to 39 months, an average of about 14 concepts at 53 to 58 months, and 20 concepts at 65 to 72 months. Second order concept made their first appearance in a few children at three years of age. By five years of age all knew at least one second order concept, such as apples are fruits and potatoes are vegetables (Watson, 1965).

Piaget has done pioneering work on concept formation of children. According to him, conceptual development takes place at four stages. The senseri moter stage is the first stage, lasting from birth to approximately 18 months. The child is fully occupied about his own physical powers and limitations. The child's thinking powers are limited to his ability to bring into relationship the objects which are immediately present to his senses.

The second stage of pre-operation starts from 18 months and ends in 7 years. During this period the child develops the ability to think. Another key development of this stage is the

foundation of the concepts of conservation and reversibility. The child is able to conceptualize more and on the basis of elaborate concepts, thoughts and images become more complex. With the emergence of perception of similarity, the child is able to group objects together into classes.

The third stage of concrete operations starts from seven years and ends in eleven years. The thought process of the child during this period are concrete in the sense that they deal only with objects that can be handled or imagined in concrete from and not with more abstract materials. (Malami, 1968 and Maynard, 1970).

As White (1969) has declared conceptualisation which is a a continuous process takes place in accordance with one's own intellectual ability and the frame work is subject to continuous change as new experiences provide new insight. He affirms that the three, four and five year olds acquire hundreds of concepts.

a. Concept of Colour:

In a study of 2292 drawings made by children between approximately four to eight years of age, Hurlock and Thompson (1934) found a steady increase in the ability to perceive and use colour correctly. Hunt (1959) found that primary colours are preferred over others at all ages from 3 through 10 and that colour preferences do not very with sex.

b. Concept of Weight:

Weight is dependent upon the sense of the objects and upon the weight of the material of which object is made (Breckenridge and Vincent, 1965). By the age of five years the child is able to tell the differences between three and fifteen grams of weight when they are of same size (Hurlock, 1972).

Smedslund (1961) worked with two groups of children. Children who initially were unable to conserve were shown by means of a balance scale that two objects weighed the same even after the shape of one had been changed. After some instruction these children could grasp that objects presented continued to weigh the same when the shape of one of them had been altered.

C. Concept of time:

Young children have no idea of the duration of time. Most four or five year olds know the day of the week and by the age of six they know the month, season and year (Hurlock, 1972). Ambron (1975) speaks that concept of time is difficult for the pre school child, having had little past that he can remember, he has only a scanty basis for conceptualising notions of past, present and future.

d. Concept of Right and Wrong:

The young child judges right or wrong in terms of the consequences of his own acts. He merely learns how to act without knowledge why he does so (Durkin, 1959).

Eventhough he does not understand why certain acts are good and others bad, the child knows that some acts are labelled 'good' and some 'bad'. From this information he lays the foundation for moral concepts that will guide his behaviour as he grows old (Bebroff, 1960 and Bechu, 1963).

e. Concept of Space:

In the beginning of life, the concept of space, distance and depth is vague and not proper but improvement can be done in it with the help of language, experience and training (Jain and Kapoor, 1974).

Hurlock (1972) believes that a four year old child can judge short distances accurately. During the period of pre-operational thought, space is still egocentric related to child's body, his movements and perceptions (Smart and Smart, 197 By the age of four years, perception of short distances is similar to that of an adult. Long distances because they are unrelated to his body are still difficult to judge accurately (Estes, 1961 and Smith, 1967).

f. Concept of Number:

According to Jain and Kapoor (1974), a child grasps up the figures by the time he is of two or three years. Gradually, he comes to have experience of different kinds of things at home and at school, learns the concept of number easily and fortifies it.

A study of the conceptual process by which number is understood by children 4 to 6 years of age indicates that at each stage of the development of number concept, the ideas of quality and order are fundamental in characterising the stage. The essential characteristic of the number concept is not abstraction of numerical cues. (Breckenridge and Vincent, 1965).

g. Concept of Life and Death:

Piaget recognises two successive stages in the animistic concepts of young children. In the first stage, when children are between 4 to 6 years everything that is any way active is regarded as conscious even though it may be stationary. In the second stage, which occurs between the ages of 6 and 7 years, consciousness is attributed only to things that can move.

h. Concept of Volume:

Ambron (1975) and Gilbert (1969) quoted Piaget's quantity test. He showed his subjects water poured into two

differently shaped containers and asked them to estimate which contained the larger amount. In the first stage of concept development, the shape of the containers markedly affected the responses of the subjects.

1. Concept of Size:

In the child's conception of geometry, Piaget and Others (1960) identified five stages in learning to build a block tower from a model. In the earliest stage, the subject simply estimated the number of blocks needed. In the second stage, the child uses himself (a stick) to estimate the height of the tower. In the third stage, he is able to use a stick longer than the height of the model. In the fourth and fifth stage the subject uses a smaller stick than the model (Ambrom, 1975).

3. Concept of money:

Money becomes meaningful to a child only when he has an opportunity to use it. By five years of age, however they begin to understand that money had to do with buying, though they do not understand that specific coins must be used for buying different things (Hurlock, 1972).

Factors Influencing Concept Formation:

Hurlock (1972) and Mussel (1965) attribute significance to the following factors.

a. Sense organ

b. Intelligence

c. Opportunity for Learning

d. Motivation and Stimulation

e. Maturation

f. Age

g. Socio economic status of the parents and their education.

h. Language

F. Programmes for Tribal Children:

The scheduled castes and tribes constitute 22 per cent of India's total population. Children of the age group of 3 to 5 is about 3.5 millions. (Singh, 1976). Within slum communities and tribes, children are placed at special risk because of the absence of parents from the home, either at work or seeking employment. Day care along with health protection, home improvement, water supply, sanitation and education would be important services to be organised (UNICEF, 1976).

Tribal children are devoid of any intellectually stimulating conditions. In order to prevent the disinterest of schooling for tribal children, there is a necessity of a preschool educational programme (Rath, 1976 and Srivastava 1972).

To develop scheduled tribes socially, educationally and economically on par with the rest of the country, special financial allocation have been made in the five year plans to supplement the benefits which the tribes are expected to derive from the general development programmes. At present special attention is being given at the central and state level to establish and implement welfare programmes for children in tribal areas.

XII EXPERIMENTAL PROCEDURE

This study aimed at strengthening the balwadi and assessing its impact on the concept formation of children in a tribal area involved the following steps:

1. Selection of the balwadi
2. Selection of the method
3. Conducting the study

1. Selection of the Balwadi:

Marudamalai is a hilly area located 12 kilometers away from Coimbatore city. A tribal balwadi which had been already organised was taken up for assessing its effects on the local children, who were attending the balwadi. The children who had had balwadi attendance continuously were only fifteen in number. An equal number of children of the same age and sex from the same locality who did not have pre school attendance constituted the control group.

2. Selection of the Measures:

The tools in this study included.

a. Interview schedule

b. Concept formation test.

a. Interview schedule:

Interview schedule was selected to get to know the back-ground information of the children from their parents. The details such as the number of children, their age, period of pre school attendance, income, occupation of the parents and family structure were collected from the parents of the chosen children.

b. Concept Formation tests:

Based on Piaget's experiments, Padmini (1972) formulated a test on concept formation. This tests included test items to test concepts such as texture, weight, number, money, colour, height, size and shape, thickness and volume, space, right and wrong, god time, cause and effect and life and death.

The number of test items are three in the test of texture, colour, height, size and shape, thickness, volume, space, right and wrong, god, cause and effect and four in the test of weight, number, money, time, life and death.

Each right answer gets one point and maximum total come to 50 for each of the child tested. The details of the test items, materials needed and instructions given to the children are given in Appendix A. Figures 1-3 illustrate the test materials used.

FIGURE 1

PARENT EDUCATION CLASS

FIGURE 2

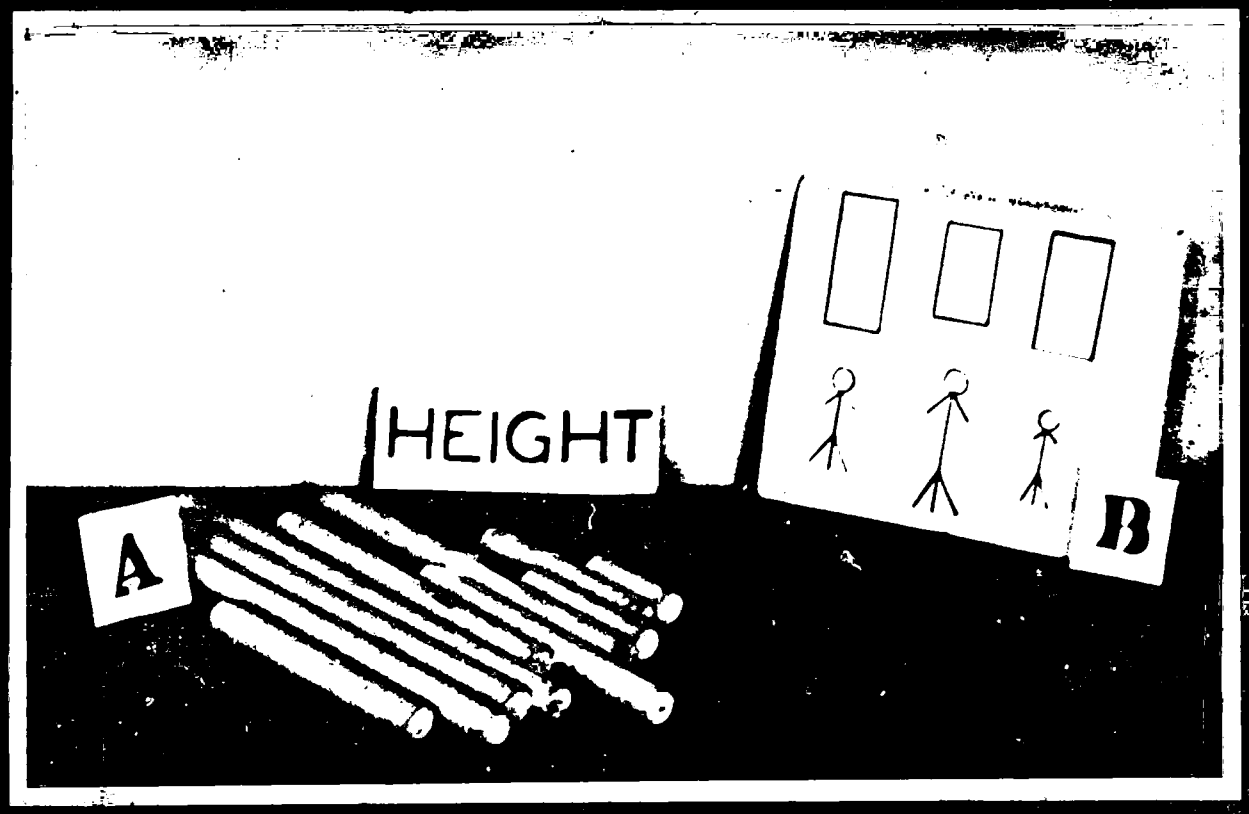


FIGURE 3

FIGURE 4

FIGURE 5

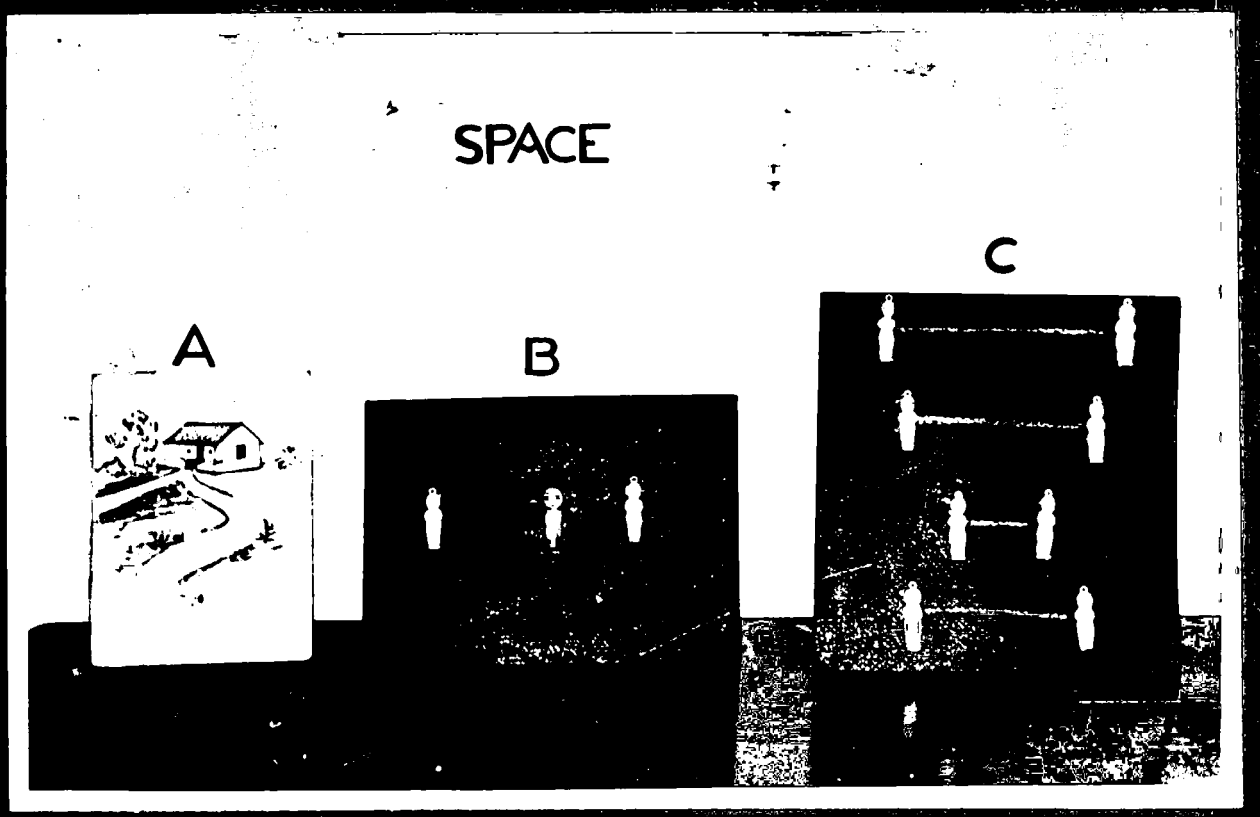


FIGURE 6

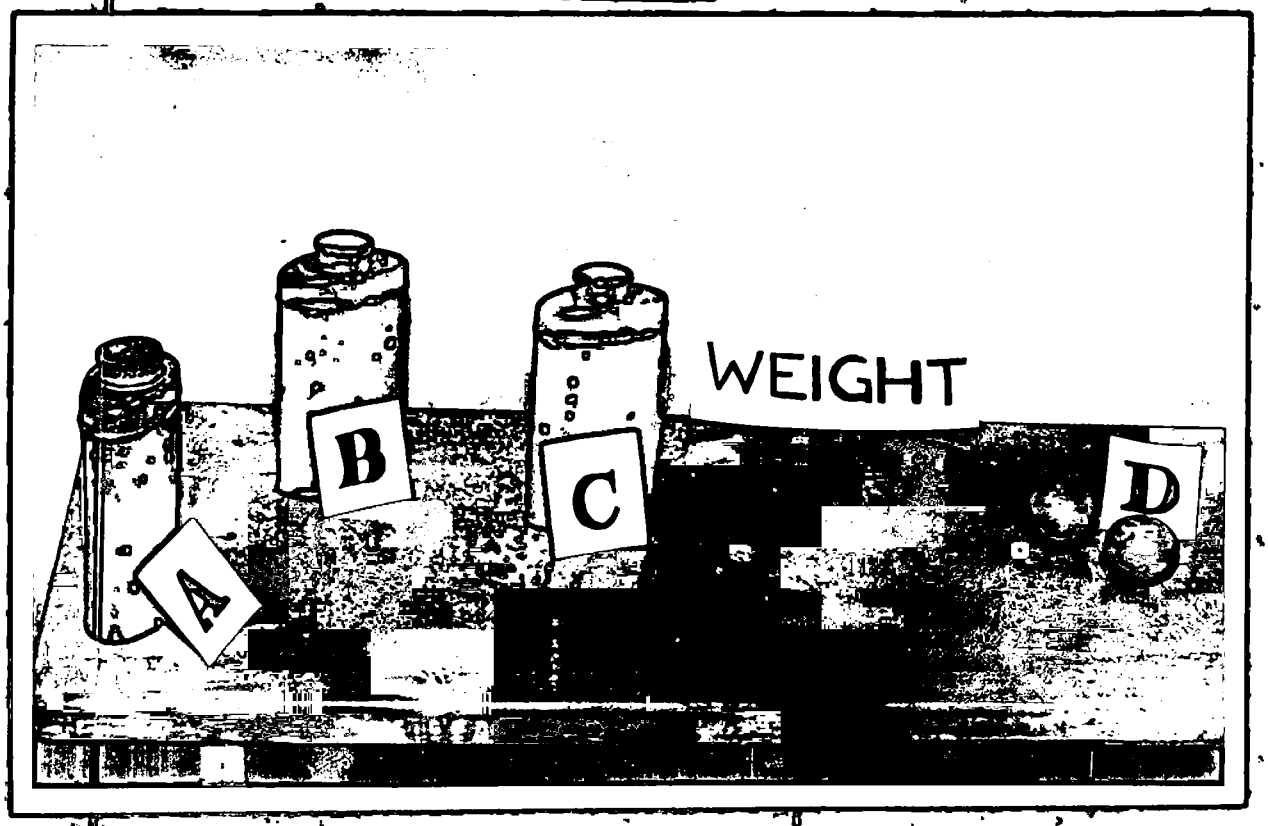


FIGURE 7

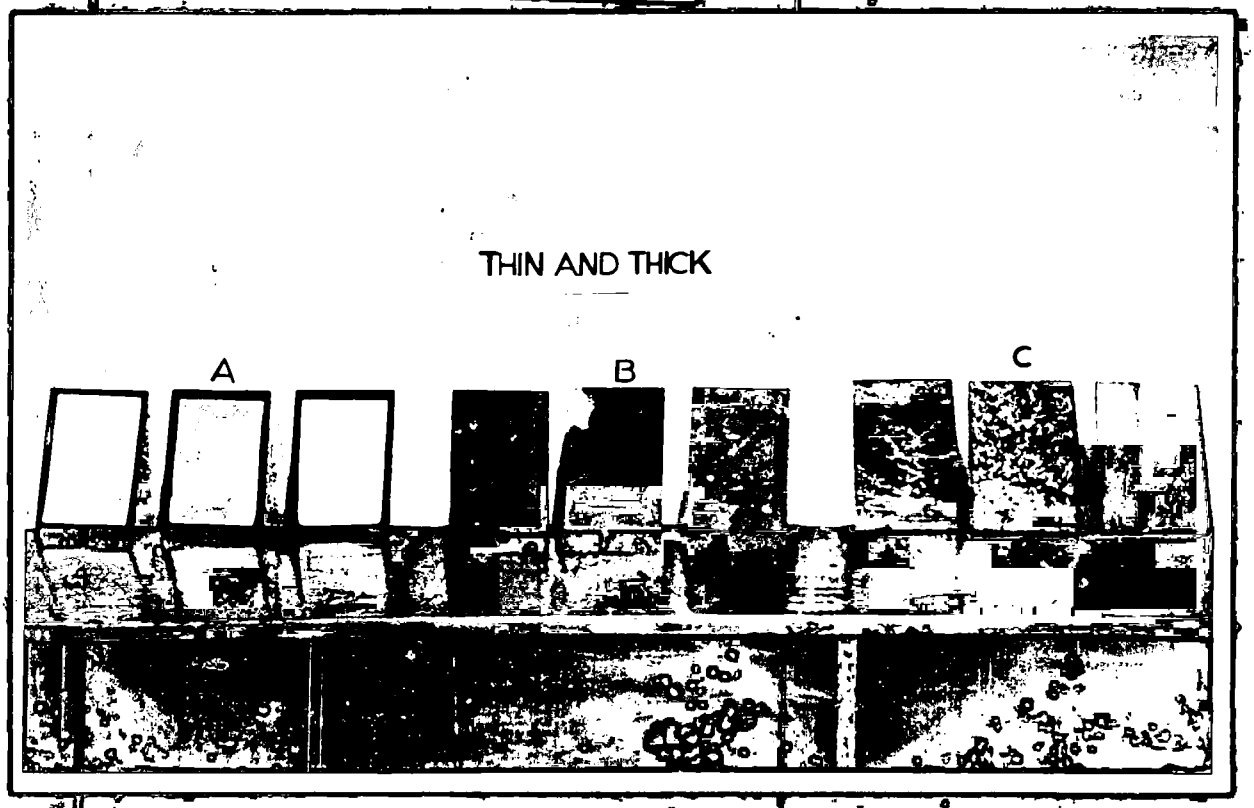


FIGURE 8

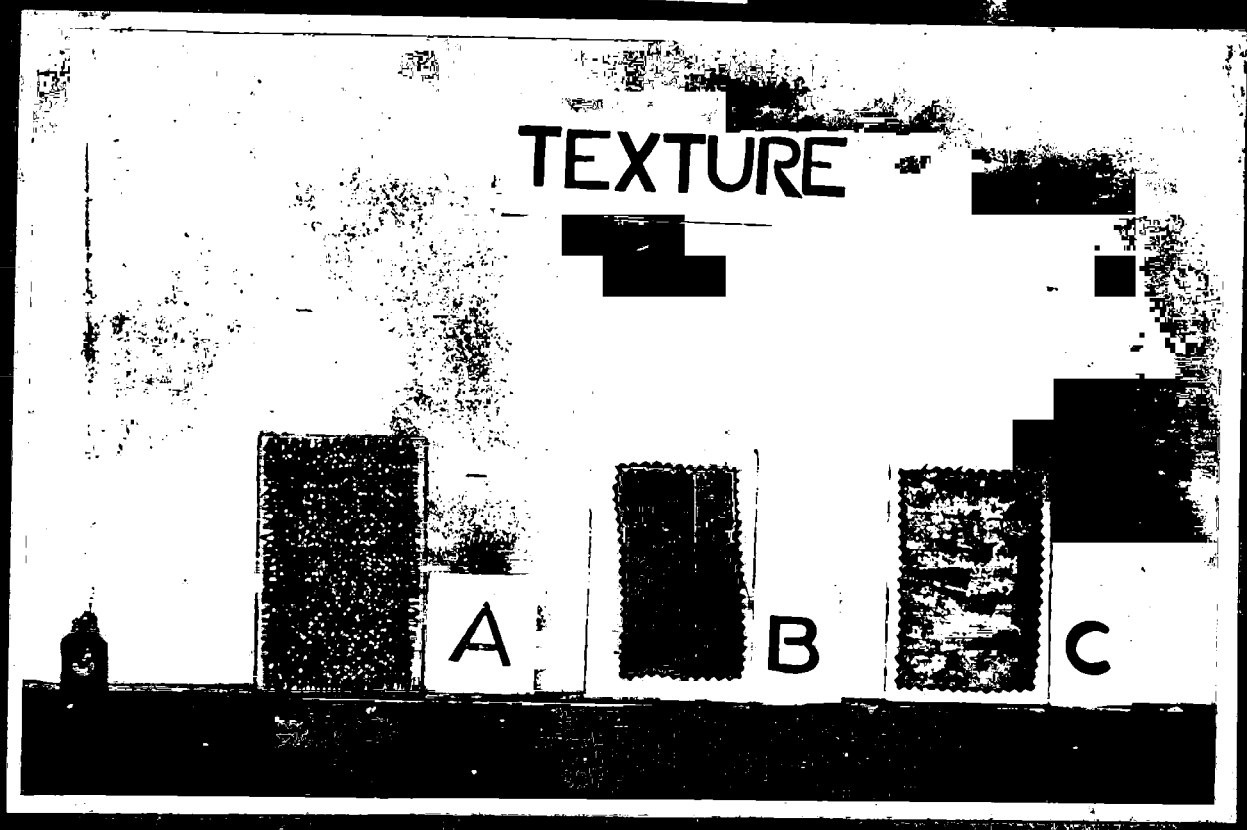


FIGURE 9

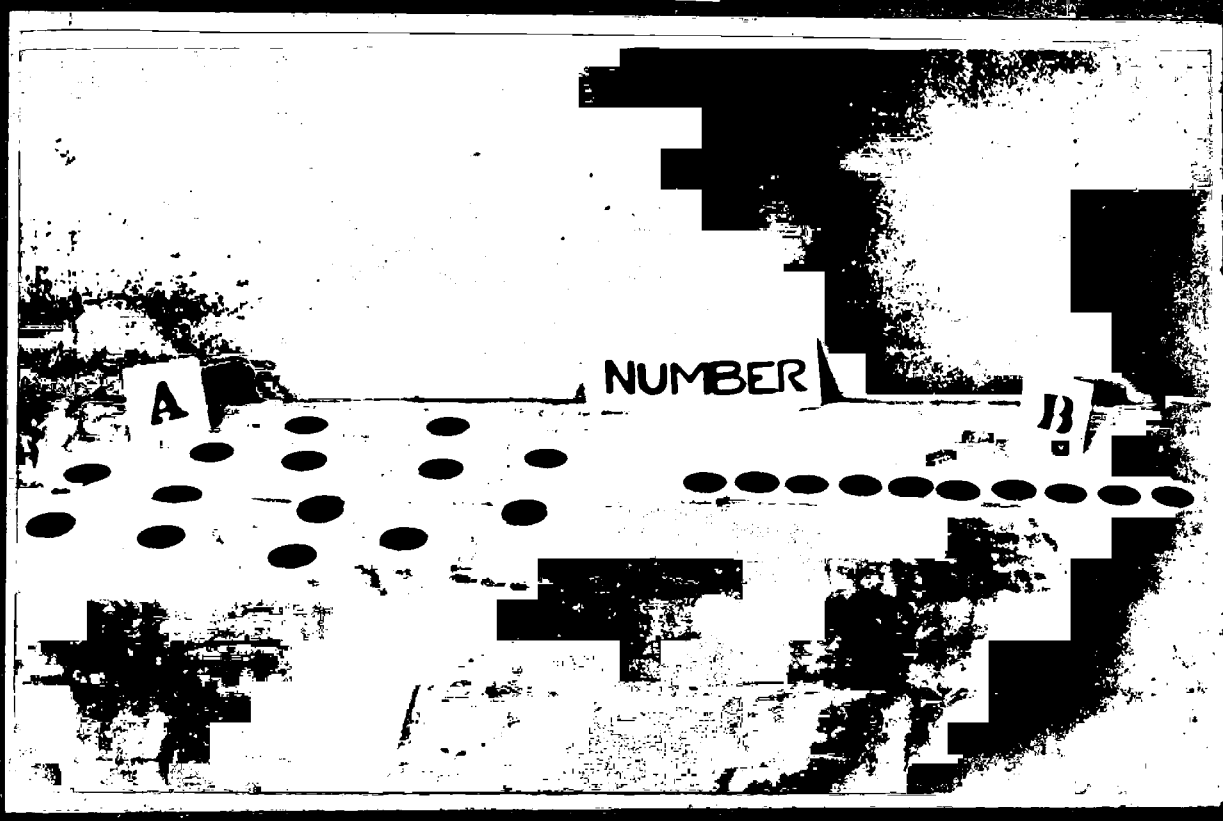
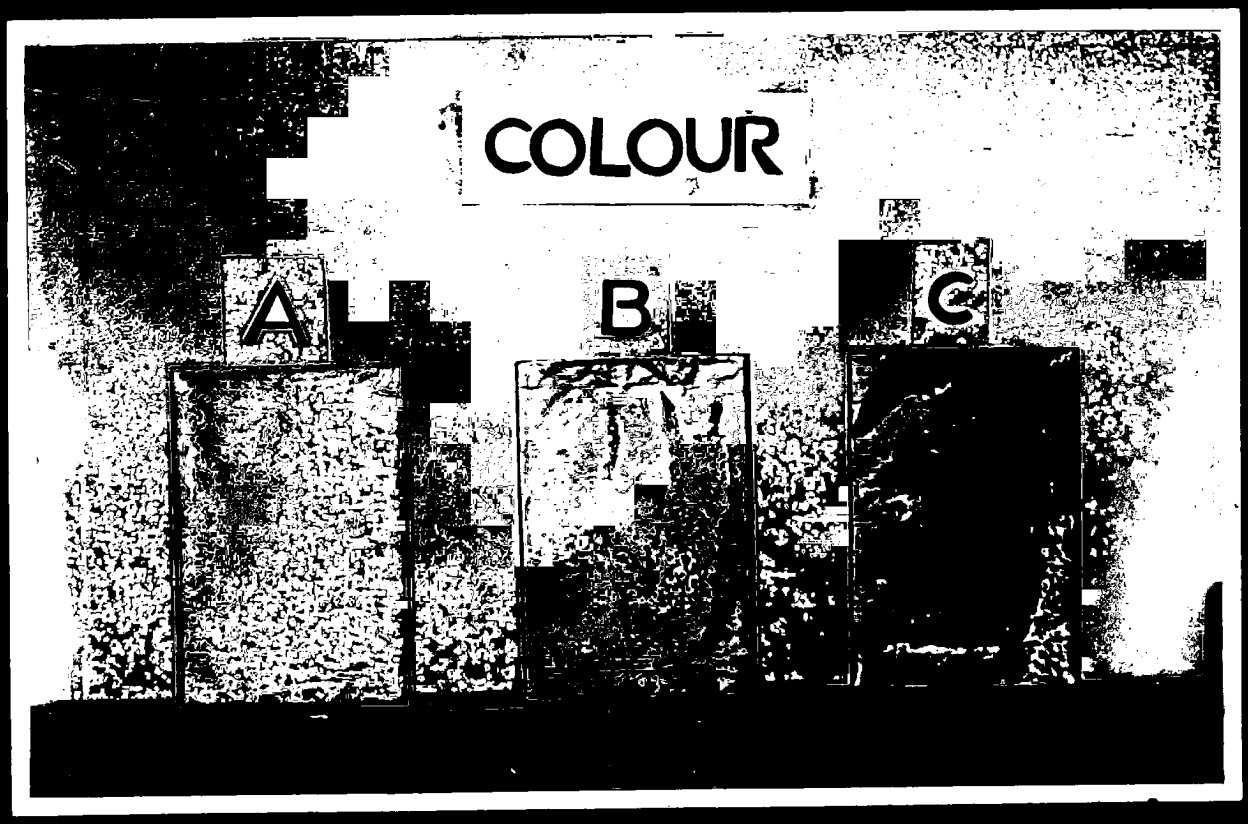


FIGURE 10



Conducting the study:

This study involved two important aspects such as strengthening the balwadi and assessing its impact.

I. Strengthening the Balwadi:

Since the balwadi did not have a trained teacher, a local girl who had passed 8th std, was selected from the tribal hill to conduct the balwadi. One month training was given to her at Sri Avinashilingam Home Science College for Women in organising and administering a pre-school.

The scheme of training included the following topics:

1. Aims and objectives of a pre-school
2. Physical set up of the pre-school, selection, arrangement and care of the indoor and outdoor play equipment.
3. Audio visual aids for children.
4. Preparation of indigenous toys.
5. Daily activities in a pre-school, planning programme for a pre-school.
   a. Planning and conducting creative activities.
   b. Planning and conducting story telling sessions.
   c. Planning and conducting music session.
   d. Planning and conducting science experiences.
   e. Planning and conducting field trips.
   f. Planning and conducting dramatisation
   g. Planning and conducting games.

h. Readiness programme for children

i. Planning and conducting celebrations and functions and national festival.

j. Planning and conducting parents meetings and parent education classes.

k. Behaviour problems in children.

l. Disciplining children

m. Importance of feeding programme and nutrition education.

n. Planning and preparing menus for the children

o. Serving the meal to children

p. Kitchen equipment and materials needed for feeding programme, care and their maintenance.

q. Study of records essential in a pre-school and their maintenance.

r. Desirable personal and managerial qualities of a preschool children.

s. Cleanliness of school, material and their maintenance.

t. Population education.

Since the balwadi had very few items of equipment, the following low cost equipment were obtained/prepared andgiven to the children.

Out door play equipment

1. Cups

2. Spade

3. Seive

4. Bucket

5. Bamboo containers

6. Coconut shells

7. Cycle tyres

Indoor Equipment:

1. Peg Board

2. Push toys

3. Coloured building blocks

4. Threading board

5. Interfixing tubes

6. Counting Boards

7. Form board

8. Balls

9. P.V.C. tubes in various sizes

10. Rattlers made out of wood apple shell, coconut shell, powder tins, nescafe tins, gull mohar seed, incense stick container and drums made out of old tins.

Home visits and imparting health and nutrition education through parents meetings were other major activities accomplished by the investigator (Figure 1').

Conducting the Study

The investigator created a rapport by visiting the houses of children selected for the study. While the children attending the tribal balwadi were approached in their schools, the non-school going children were approached at their homes. Each child was individually called to a place that is protected from other influences and helped to sit comfortably. After establishing rapport and making sure of the childs attention to the test stimulus, the investigator administered the tests one by one giving instructions in Tamil. Testing for all the children was accomplished by the investigator letting the child perform the tests at his own phase not setting any limits of time.

IV RESULTS AND DISCUSSION

The results of this study on the "Impact of Pre-school Education on Concept Formation of Tribal Children" are discussed under the following headings.

1. Family background of the selected children
2. Concept formation of the selected children

I. Family Background of the Selected Children:

The distribution of the families of the selected 40 children are given in Table I.

TABLE I

BACKGROUND INFORMATION OF THE SELECTED CHILDREN

Details	Balwadi children		Non balwadi children	
	Number	Percentage	Number	Percentage
Family structure				
Nuclear	20	100	20	100
Joint	--	--	--	--
Family Size				
Large	8	40	17	85
Small	12	60	3	15

Ninety fathers and hundred mothers of non-balwadi children were illiterates against 75 fathers and 50 mothers of children attending the balwadi. It is interesting to note that 50 percent of mothers had primary education against 25 percent of fathers of balwadi children.

Occupational Status of the parents	Balwadi children		Non balwadi children	
	Number	Percentage	Number	Percentage
Coolí	16	80	14	70
Agricultural labourer	2	10	4	20
Skilled jobs	2	10	2	10

Educational Status of the parents	Balwadi children				Non balwadi children			
	Father		Mother		Father		Mother	
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Illiterate	15	75	10	50	18	90	20	100
Primary	5	25	10	50	2	10	--	--

Fifty five percent of the parents of balwadi attending children had small families consisting of two to five family members, against 15 percent of the parents of children who did not attend balwadi.

As for the occupational status of the heads of the families it is found that 80 percent and 70 percent were coolies, 10 percent and 20 per cent were agricultural labourers in the families of balwadi and non balwadi children respectively. The remaining had occupations that demanded skilled labour.

2. Concept of Height:

The scores obtained by the samples for the concept of height (tall and short) are presented in Table II.

TABLE II

CONCEPT OF HEIGHT

Max. Scores	Scores obtained by Balwadi children		Scores obtained by Non balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	10	50
2	7	35	5	25
3	13	65	5	25
Mean	2.65		1.25	
Standard Division	0.4894		1.3328	
	't' value 4.41**			

** Significant at 1 per cent level

In the tests of concept of height, children of balwadi attending secured higher scores than their counterparts who were not attending the balwadi.

B. Concept of Shape and Size:

Table III presents the children's scores in both groups regarding the concept of shape and size.

TABLE XXI

CONCEPT OF SIZE AND SHAPE

Max scores: 3	Scores obtained by			
	Balwadi children		Non balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	13	65
2	3	15	7	35
3	17	85	--	--
Mean	2.85		0.70	
Standard Deviation	0.3662		0.9787	

't' value 9.20 **

** Signficant at 1 per cent level

Terman and Merill have reported that the five year olds perceive well the largest, smallest and middle sized. In this study, the scores for the concept of shape and size, point out that, the balwadi attending children have more clear perceptiom of the size and shape of objects. None of the children not attending the balwadi scored the maximum marks. This may be due to the fact that they did not have any stimuli to learn the concept of size and shape that could have been possible to the children attending pre-school.

C. Concept of Money:

The scores of the selected children for the concept of money are deicted in the Table IV.

TABLE IV

CONCEPT OF MONEY

Max scores: 4	Scores obtained by Balwadi children Number	Percentage	Non balwadi children Number	Percentage
1	--	--	--	--
2	--	--	4	20
3	2	10	6	30
4	18	90	10	50
Mean	3.90		3.30	
Standard Deviation	0.3077		0.8013	
	't' value 3.13 **			

** Significant at 1 per cent level

In the tests administered to assess the concept of money, ninety per cent of the balwadi attending children obtained maximum scores(4) against 50 per cent of their counter parts who were not attending any balwadi.

6. Concept of Volume:

Percentage scores received in the tests assessing the concept of volume are summarised in Table V.

TABLE V

CONCEPT OF VOLUME

Max scores: 3	Scores obtained by			
	Balwadi children		Non balwadi children	
	Number	Percentage	Number	percentage
1	--	--	2	10
2	--	--	6	30
3	20	100	12	60
Mean	3.00		2.50	
Standard Deviation	0.00		0.6883	
't' value 3.24**				

** Significant at 1 per cent level.

In the tests of concept of volume the children who had balwadi attendance were found to be superior to the non attending group.

e. Concept of Right and Wrong:

The total scores obtained by the selected groups of children in the tests of concept of right and wrong are in Table.VI.

TABLE VI

CONCEPT OF RIGHT AND WRONG

Max: Scores: 4	Scores obtained by			
	Balwadi children		Nonbalwadi children	
	Number	Percentage	Number	Percentag
1	--	--	12	60
2	--	--	8	40
3	2	10	--	--
4	18	90	--	--
Mean	3.90		1.40	
Standard Deviation	0.3077		0.5026	
	't' value 18.97 **			

** Significant at 1 per cent level.

The progressive increase in the scores of balwadi attending children reveal that the ability to discriminate between right and wrong is a function of the stimulating environment prevailing in the pre-schools.

f. Concept of God:

The results of the verbal tests administered to find out the concept of God are in Table VII.

TABLE VII

CONCEPT OF GOD

Max. Scores: 3	Scores obtained by			
	Balwadi children		Non balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	8	40
2	1	5	12	60
3	9	95	-	--
Mean	2.95		1.60	
Standard Deviation	0.2236		0.5026	
	't' value 10.96 **			

** Significant at 1 per cent level.

Ninety five per cent of the balwadi attending children displayed clear concept about God, scoring well, while only 60 per cent of children without pre-school attendance had scored two points.

8. Concept of Space:

Table VIII reveals the scores achieved by the children on the tests of spatial relationship.

TABLE VIII

CONCEPT OF SPACE

Max: Scores: 3	Scores obtained by			
	Balwadi children		Non balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	15	75
2	1	5	2	10
3	19	95	3	15
Mean	2.95		1.40	
Standard Deviation	0.2236		0.7539	
	't' value 8.82 **			

** Significant at 1 per cent level.

Ninety five per cent of the balwadi attending children received maximum scores while it was 15 per cent for the children who did not have pre-school attendance. It was evident that the balwadi children had clear comprehension of spatial relationship.

h. Concept of Cause and Effect.

Table IX presents the scores on the tests of cause and effect.

TABLE IX

CONCEPTS OF CAUSE AND EFFECT

Max: Scores: 3	Scores obtained by			
	Balwadi children		Non balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	15	75
2	1	5	2	10
3	19	95	3	15
Mean	2.95		1.40	
Standard Deviation	0.2236		0.7539	
	't' value 8.82**			

** Significant at 1 per cent level

It is interesting to note that the tribal children who attend the balwadi had better conceptualisation of the cause and effect relations. This may be due to the result of repeated observation in the stimulating environment offered to those who attend balwadi.

1. Concept of life and Death:

To know that concept of life and death in children of the two groups selected, they were asked to answer a few questions, the results of which are in Table X.

TABLE X

CONCEPT OF LIFE AND DEATH

Max: Scores: 4	Scores obtained			
	Balwadi children		Non balwadi children	
	Number	percentage	Number	percentage
1	--	--	6	30
2	1	5	12	60
3	3	15	2	10
4	16	80	-	--
Mean	3.75		1.80	
Standard Deviation	0.5501		0.2514	
	't' value 14.42**			

** Significant at 1 per cent level.

Eighty percent of those attending the balwadi could distinguish between animate and inanimate objects. None of the non-balwadi received maximum score in the particular test. The findings of this study is in line with that of Peck (1966) who has also reported that children with enriching environment have better conceptions of life and death.

j. Concept of Time:

The scores received by the children in relation to the concept of time are depicted in Table XI.

TABLE XI

CONCEPT OF TIME

Max score: 4	Scores obtained by			
	Balwadi children		Non-balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	4	20
2	--	--	15	75
3	3	15	1	5
4	17	85	-	--
Mean	3.85		1.85	
Standard Deviation	0.3663		0.4894	
	't' value 14.63 **			

** Significant at 1 per cent level.

The balwadi children registered high scores than their counterparts in the tests of the conventional time knowledge. This may be perhaps because the former group had an opportunity to go to the balwadi, to have the midday meals, snacks and to participate in the daily programme in time regularly. Agrawal et al (1977) and Rao (1977) are also of the opinion that the experiences and environment to which the individual is exposed during the formative period lead to the development of concepts.

k. Concept of Weight

Table XII pictures out the scores of the groups in the tests of concepts of weight.

TABLE XII

CONCEPT OF WEIGHT

Max. Scores: 4	Scores obtained by			
	Balwadi children		Non-balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	9	45
2	2	10	8	40
3	6	30	3	15
4	12	60	-	--
Mean	3.50		1.70	
Standard Deviation	0.6883		0.7327	
	't' value 8.01 **			

** Significant at 1 per cent level.

In this test, the children were asked to sort out the heavier and lighter objects. Sixty per cent of the children of balwadi attending were able to discriminate and judge correctly. Contrary to this, none of the non-attending group, could do this.

I. Concept of thickness:

Table XIII figures out the scores recorded for the concept of thickness.

TABLE XIII

CONCEPT OF THICKNESS

Max: Scores 3	Scores obtained by			
	Balwadi children		Non-balwadi children	
	Number	Percentage	Number	Percentage
1	1	5	9	49
2	8	40	7	35
3	11	55	4	20
Mean	2.30		1.75	
Standard Deviation	0.6070		0.7864	
	't' value 3.38 **			

** Significant at 1 per cent level.

Against 55 percent of balwadi attending children who displayed correct concepts of thickness and thinness among pieces of cloth, slices of wood and papers, only 20 per cent of the non-balwadi children were able to do so.

II. Concept of Texture:

The selected groups of children were given three different textured cloth pieces to feel and say how they are. The following table illustrates the results of the test on texture.

TABLE XIV

CONCEPT OF TEXTURE

Max: Score 1	Scores obtained by Balwadi children		Non-Balwadi children	
	Number	Percentage	Number	Percentage
0	2	10	17	85
1	18	90	3	15
Mean	0.90		0.15	
Standard Deviation	0.3077		0.3663	
	't' value 7.01 **			

** Significant at 1 per cent level.

It is interesting to note that 90 percent of the balwadi children had correct concept of texture against 15 percent in the other group which did not have the privilege of undergoing balwadi education.

n. Concept of Number:

Four test items were administered to assess the concept of number in the selected children. Table XV present the scores of the children in this study.

TABLE XV

CONCEPT OF NUMBER

Mean Scores: 4	Scores obtained by Balwadi children		Scores obtained by Non-balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	4	20
2	2	10	3	15
3	3	15	13	65
4	15	75	-	-
Mean	3.65		2.45	
Standard Deviation	0.6708		0.8256	
	't' value 5.04 **			

** Significant at 1 percent level.

75 percent of the balwadi children received the maximum scores against none in the other group. This may be due to the fact, that the preschool emphasised on the development of number concepts as preparation for entering first standard in schools. Hurlock (1972) and Wohlwill and Wiener (1964) also attribute the same reasons to the presence of better number concepts in pre-school children.

The scores of the children on the tests, of concepts of colour are pooled in the following table.

TABLE XVI

CONCEPT OF COLOUR

Max: Scores: 3	Scores obtained by			
	Balwadi children		Non-Balwadi children	
	Number	Percentage	Number	Percentage
1	--	--	12	60
2	--	--	8	40
3	20	100	--	--
Mean	3.00		1.40	
Standard Deviation	0.00		0.5026	
	't' value 14.24**			

** Significant at 1 percent level.

The performance of the children attending the balwadi depicted higher perception of colours in them. The poor performance of the other group might be attributed to the lack of exposure of coloured objects and stimulation to them.

Thus this study proves that preschool education to tribal children is important to develop reasoning by inducing children to understand the cause and effect relationship and inculcating in them the ability to judge situations and spatial relations, to develop science and mathematical concepts, time, ~~time~~, shape size, colour, volume and living and non-living things.

V SUMMAR AND CONCLUSION

The findings of this study on 'Impact of preschool education on the concept formation of tribal children' can be summarised below:

1. Parents of the balwadi attending children had better educational level than those of the other group.

2. Children who had balwadi attendance performed better in the tests of various concepts than their counterparts and the difference was highly significant.

3. More than ninety percent of the children attending balwadi scored maximum marks in the test of height, money and volume while only fifty percent of their counterparts who did not attend balwadi achieved it. The former group had remarkable performance in the test of colour concept too.

4. In the tests of the concept of size and shape, right and wrong, God, life and death, time and number, 80 to 95 per cent of the children with balwadi attendance secured the highest scores against none in the other group.

5. In the tests of space, cause and effect and texture, above 90 percent of the children attending balwadi scored maximum while only 15 percent of the children without balwadi attendance had the same.

6. Though the scores of the balwadi children were higher than their counterparts regarding the concepts of weight and thickness and only a less number of balwadi children were able to reach the maximum score.

Based on these findings the following recommendations are made:

1. More balwadies in tribal areas must be established by the social Welfare Departments and financed adequately.

2. In order to improve the physical status of these poorly fed childre^n, feeding programmes should become part of tribal balwadies.

3. Balasevikas in tribal balwadies must be trained to plan out a curriculum for the perceptual, conceptual development of the children and motivate them for further schooling.

BIBLIOGRAPHY

Agraval, G., Saksena, N.K. "The Parents Role and Emotional Development of the Child". A Review in Indian Journal of personality and Human Development. Vol.1, No.1, 1977 pp. 32-34.

Ambron, S.R. Child Development. San Francisco: Holt Rinehart and Winston, 1975, pp.244,248.

Aranha J.T. 'Child Welfare Services in Bombay', in Social Welfare, Vol.XVI, No.1, 1969, p.1

Ausubel, M.D., Sullivan, E.V, Theory and problems of Child development. London: Grune and Stratton, 1970, pp.611-615

Boas, G.D. General Psychology, Madras: Ravishankar Printers, 1974, pp.363-365.

Bobroff, A. "The stages of Maturation in Socialised Thinking and in the Ego Development", in Child Development, 1960, Vol.31, pp321, 331.

Boehn, L. "The Development of Consicence of pre school children", in Journal of Social Psychology, 1963, 69, pp.355-360.

Breckenridge, E.M., Vincent, E.L., Child Development Physical and Psychological growth through adolescence. London: W.B Saunders Company, 1865, p.291.

Chandramani, M., Jayalakshmi, S.S., Anunpoorani, P. "Survey of the Status of Pre Schools in Coimbatore, in the Indian Journal of Home Science. Vol.VII, No.1, 1973, p.24.

Dayal, D. Report of the Seminar on Pre School Child-Madras, 1970. New Delhi: Indian Council of Child Welfare; 1973, p.1.

David, Russel, H. "Concepts", Encyclopedia of Education Research. New York: The Macmillan Co., 1960, pp.347-349.

Davies, T.G., "The Change of Change for Children" in Yojana. Vol.XX, 1976, p.13.

Devadas, R.P., and Khosla, K., "Low-cost Menus for School Lunch Suitable for North India, in Swasth Hind, Vol.4, No.11, 1966, p.272.

Devadas, R.P., 'Preschool Education', in Child Development. A Symposium. New Delhi: National Council of Educational Research and Training, 1964, pp 257, 262.

Durkin, D. "Children's concept of Justice. A comparison with Piagets' Data" in Child Development. 1959, 30, pp.59-67.

Edwards, D.C. General Psychology. London: The Macmillian Company: 1969, p.187.

Estes, B.W. 'Judgement of size in Relation to Geometric shape", in Child Development, 1961, pp.229-234.

Frank, G. Fundamentals of Psychology. New York: John Wiley and Sons Inc: 1963, p.329.

Freeman, F.S. Theory and Practice of Psychological Testing. New Delhi: Oxford & I.B.H. Publishing Co: 1976, pp.344-345.

Gilbert, S. "Concept formation", in Encyclopedia of Education Research. London: The Macmillan and Co: 1969, pp.196-198

Gopal, M.H, An Introduction to Research Procedure in Social Science, Bombay: Asian publishing house: 1964, p.109

Gopalan, C., Balasubramanian, S.C., Sastri, B.V.R. Rao, K.V. Diet Atlas of India. Hyderabad: National Institute of Nutrition. Indian Council of Medical Research: 1971, p.56.

Green, M.M., Woods, E.L. A Nursery School Hand book for Teachers and Parents, New Delhi: Universal Book Stall: 1969, pp.2., 11-12.

Hurlock, E.B., Thompson, J.L. "Children's Drawings and Experimental study of perception", in Child Development. 1934, pp.127-138.

Hunt, E.B., 'Order of consideration of Different Types of concepts", in Journal of Experimental Psychology. 1969, p.59.

Hurlock, E.B., Child Development. New Delhi. Mc Graw Hill Kogakusha Ltd.: 1972, p.346.

Hurlock, E.B., Developmental Psychology. New Delhi: Tata Magnav Hill Publishing co. Ltd.: 1976, pp.206, 228.

Indian Council of Child Welfare. Aspects of Sex Education. Vol. XXV, No.(2,3), 1977, pp.1,22.

ICCW News Bulletin, Balwadi - A guide Book for Balasevikas. New Delhi: Indian Council of Child Welfare, Vol.XXIV, No.5, 1976, pp.3,8,9.

Jain, J.C., Kapoor, H.K. Psychological Foundations of Education. Ludhiana: Prakash Brothers, 1974, pp.136-139.

Jeosten, A.M., Gupta, R.K. "Cognitive Development and class room practices with special reference to Montessori method", in Cognitive Development and Pre School Education, New Delhi: IAPE: 1968, p.103.

Jayakaran, S. "Let's talk about nutrition", in Home Science, Vol. 9, No.3, 1971, p.3.

Jill, Kent, p, Nursery Schools for all. London: Ward lock Educational Neill and Company Ltd: 1970, p.10.

Kagan, J. Understanding Children, New York: Harcourt Brace Co: 1971, p.86.

Kagan, J., Havemann, E. Psychology An Introduction, New York: Harcourt Brace Jovanvish Inc, 1972, p.587.

Koske, G.L, "The Adivasi Child" in Home Science Vol.15, No.9,1977, pp6.

Lewis, M.L.J, "Education for Tomorrow" in Children in the tropicos. No.66, 1970, p.34.

Malani, I., "Cognitive Development in Pre School Programme", in Cognitive Development and Pre School Education, New Delhi: IAPE: 1968, p.19.

Mangal, S.K., Educational Psychology and Statistics. Ludhiana: Prakash Brothers: 1977, pp.88-89

Marker, G.W., Risinger, C.F "Top Priority in the Family Agenda: A Global Perspective", in Education for a Changing World. No.3, 1977, p.17.

Marx, M., Learning Interaction. London: The Macmillan Co: 1970, p.120

Mathur, Y.C., Kumar, A. "Home and Environment in growth of the Child", in Swasth Hind, Vol.20, No.11, 1976, p.19.

Maynard, N.J., Child study, London: Oxford University Press, 1970, pp.72,75.

Melton, A.k., Categories of Human learning, London: Academic Press, 1964, p.226.

Muralidharan, R., "Preschool Education. What it should give" in Report of the Seminar on the Preschool Child, Madras, 1970 New Delhi: Indian Council child Welfare, 1973, p.93.

Muralidaran, R.A. Guiden Booklet for Nursery, School Teachers, Delhi: National Council of Education Research and Training: 1969, p.1.

Murphy, G., An Introduction to Psychology, Calcutta: Oxford Book Co. 1964, p.568.

Mussel, L.S., Psychology for Modern Education. Delhi: Sterling Publishers; 1968, pp.344-345.

Nagaraj, J. Child Psychiatry, Vol. X, No.2, 1977, p.1.

Nambathy, M.C., "Planning and Co.ordination of Services for the preschool Child" in Report of the seminar on the pre school Child, Madras, 1970. New Delhi: Indian Council of Child Welfare, 1973, p 241-243.

Narmada, R., "Health of the Preschool Child" Proceedings of the National Seminar of An Integrated Approach to the Preschool Child, Bangalore. IAPE, 1972, pp 84-85

Osser, H., 'Conceptual Development', Perspectives' in Child Psychology. New York: Mc Graw Hill Book Co., 1970, pp 390.

Peck, R., The development of the concept of death in selected male children. Dissertation Abstract, 1966, p.27.

Piaget, 1948 cited by Edgar, N.V., in The Psychology and thinking, New York: McGraw Hill Book Company Inc. 1952, pp.111, 121

Premalathay A.D., "Towards better mental health nursery school" in Social Welfare, Vol.XIV, No.5, 1967. p.29.

Raju, P.K., "The tribal development strategies" in Social Welfare. Vol. XXIV. No.6, 1977, pp.4.6.

Ramachandran, P. Education of the working Group on Production and supply of Educational Toys for children, in IAPE, Newsletter. No.28, 1969, p.11.

Ramji, M.T., Goyal, B.R., "Programme and activities for Balwadies" NCERT, 1972, pp.2.21

Rao S.P. Socio culturally deprived individuals. Adjust Reaction of childhood in child Psychitry 1977, Vol.X, No.1, p.8.

Rao, S., Optional Learning Environment and the Disadvantaged Child, A paper presented in the Seminar. National Council of Educational Research and Training. New Delhi: 1978, p.5.

Rath,R., "Problems of Equalisation of Educational opportunities for the Tribal children", in Indian Educational Review, Vol.XI, No.2, April, 1976, p.56.

Read. K.H., The Nursery School. New Delhi Oxford and IBH Publishing Co. 1967, p 62-81

Raju, H., Psychology for life. New York: McGraw Hill Book Company, 1953, p.189.

Rajon, R., Child Welfare in Semi Urban Conditions, in children in the Tropics. No.66-67, 1970, p.38.

Semdelund, J., "The Acquistion of conservation of substance and weight in children III Extenction of Conservation of Weight acquired normally hnd by means of emprical controls on a balance scale in Scandinavian Journal of Psychology, 1961, pp. 71, 84.

Sethi, S.S., Academically - oriented pre-schools in The Indian Journal of Home Science. Vol. 11, No.3, 1977, pp.77.80

Shah, J.G., 'Nursery School for Beginner', in Home Science, Vol. 14, No.10, 1976, p.14.

Smith, W., Krouse, Stanley W.J.B., Atkinson, Mark M. The Education's Encyclopaedia. Englewood cliffs: Prentice Hall, 1967, p.868.

Sperling, A., Psychology - made simple. London: W.H. Allen, 1970, p 63-64.

Srivastava, S.P. "Education for the children of scheduled Tribes" in Social Welfare, Vol.XVIII, No.10, 1972, pp.67

Sundaram, N., Seminar on Social and Emotional Development of Child Welfare, New Delhi: Indian Association for preschool Education, 1973, p.1.

Swaminathan, I., 'Parents and the community in Development of Society', in Pre School Education NIE, Vol.5, No.2, 1970, p.34.

Shamsuddin "Child his growth and development" in Social Welfare. Vol.XVII, No.8, 1971, p.9.

Sigel, Irving, E. "The Attainment of Concepts in Review of Child Development Research. New York: Russel Safe foundations 1964, pp 209, 211.

Sigel, 1953, Cited by Ieland, H.S., in Child Development An Individual longitudinal approach. New York: Holt Rinehart and Winston Inc. 1967, pp.285, 291

Singh, H.N., "The twenty point programme ushers in a new Era for the poor" in Social welfare, XXIII, No.8., 1976, pp 27. 28

Singh, S.B., Nigam, A and Srivastava, J.L., "A study of the personality Pattern of the Parents and their Problem children with Internal and External Manifestation" in Child Psychiatry Vol. X, No.1, 1977, p.268-274

Skinner, C.E., Educational Psychology. New Delhi: Prentice Hall of India, 1974. pp.227-228.

Smart, M.S., Smart, R.C., Children Development and Relationships. London: The Macmillan Company, 1971, p.209.

Taylor, P.H., Reid, W.A., Holley, B.J., Gail Exon., Purpose Power and Contraint in the primary School curriculum. London: Macmillian C.I.E., 1974, p. 296.

Terman, M. Merill, 1937, Cited by Hurlock. E.B. in Child Development Mcgraw Hill Kogakusha Ltd. New Delhi. 1972 pp. 347

Thompson, G., Child Psychology. Bombay: Times of India Press, 1969, pp.318-326.

UNICEF, Health and Basic Services. South Central Asia Regional office, New Delhi: 1976, pp.146-147.

Verma, A., "Education of the Preschool Child", in Proceedings of the National Seminar on An Integrated Approach to the Preschool child, Bangalore: IAPE, 1972, pp 54-55.

Wadhwa, S., Importance of school Education" in Home Science, Vol. 16, No.1, 1978. p.17

Welch, 1940, cited by Watson, R.I., Psychology of the child. New York: Johnwiley & Sons, Inc. 1965, p.325

White, R., "Teaching, Reading in the preschool Curriculum," in Journal of Home Economics, 1969, No.9, pp.703-704.

Wohlwill, J.F., Wiener, M., "Discrimination of Form Orientation in young children", in Child Development, 1964, 35, pp.113-115

APPENDICES

APPENDIX A

QUESTIONNAIRE TO ELICIT INFORMATION ABOUT THE SOCIO-ECONOMIC BACKGROUND FOR THE SELECTED SUBJECTS

1. Name of the child

2. Ordinal Position of the child

3. Total number of children

4. Name of the Head of the family

5. Address

6. Caste Religion

7. Mother tongue

8. Details of the family

   a. Joint family b. Nuclear family

S.No.	Names	Relationship to the head of the family	Sex	Age	Occupation	Education	Income/month (or) Annum

Other sources of income/month (if any)

9. Does your child attend the pre-school?

10. If yes, what is the period of pre-school attendance in months.

APPENDIX B

DETAILS OF TESTS OF CONCEPT FORMATION

S.No.	Concept tested	Materials needed	Instruction given to the child	Scores
1	Height	Ten same coloured wooden sticks of different heights	a. I am giving you sticks of different heights. Arrange them according to their height starting from the tallest.	1
			b. In the picture I show there is a doll underneath each rectangle, look into them and point out with your finger which doll would fit in each of the rectangles	1
			c. Now let both of us stand for a minute I am sure you can say who is taller of us you (or) I	1
2.	Size and shape	Six plastic triangular blocks of same size and colour.	a. I will give you one picture puzzle sheet. Arrange the plastic blocks according to the pattern shown on the picture	1

S.No.	Concept tested	Materials needed	Instruction given to the child		Scores
		Semicircle round ball, square and triangular blocks; plus two extra blocks (rectangular) which don't have replicas	b.	Here are assorted shapes of blocks. I would place them in front of you. Separate similar block from this group of blocks which I have before and show	1
		Rectangle, semi circle, square and tow triangle blocks	c.	I have build a block tower. Build a similar block tower with the blocks given to you	1
3.	Value of money	3,5,10,25 and 50 p	a.	There are some coins in my hand. Pick out a ten paise coin and place it down	1
		5 and 25 p	b.	As I show some coins one after another, tell the value of coins	1
		5 p and 10 p	c.	Which coin would bring more sweets among the two coins I show you	1

S.No.	Concept tested	Materials needed	Instruction given to the child	Scores
4.	Volume	Water, tumbler, a. and two small buckets	Now I am going to pour some water from a tumbler in each of the two small buckets. Observe carefully and tell which bucket contains more water.	1
		Two differently shaped containers a small bucket and small vessel of water	b. Next let me take two different shaped containers watch carefully the amount of water, I am pouring into the vessels. After the water is poured, judge and tell me which vessel has more of water	1
		Two plastic clay balls of equal weight and same colour	c. Look here. There are two plastic clay balls. You can feel it and give it back. I shall make a plate out of each of ball, and place it in front of you, say whether the weight of the plates are the same (or) not	1

S.No.	Concept tested	Materials needed	Instructions given the child	Scores
4.	Right and wrong		I am sure you like to listen to stories. Now you will hear a story There are two girls namely Radha and Sudha. Both used to go to school regularly. One day they went to a neighbour's house and played there with dolls. After playing Radha replaced the doll but Sudha took one doll with her and went to her home. Who did the wrong act?	1
			a. Is breaking a toy a right (or) wrong act?	1
			b. Is it right to pinch a child who is younger to you?	1
6.	God		I will ask you some easy questions. I am sure you can answer those questions	1
			a. Whom do we pray?	
			b. Is there a God?	1
			c. Should we pray God	1

S.No.	Concept tested	Materials needed	Instructions given to the child	Scores
7.	Space	A picture of a house with two roads	a. You see a house in this picture. There are two roads that lead to this house which road do you think will take you sooner to the house	1
		Two little dolls of same size and one fat doll	b. You see three dolls in the card board, show the doll that is nearer to the fast doll	1
		Four pairs of some sized little dolls on a sheet of card board	c. Four pairs of dolls are displayed in a card-board. Look at them carefully and say which pair has more space	1
8.	Cause and Effect		Now I would ask you some questions, give me the answers you know for them	1
			a. what will happen if a mirror falls down?	
			b. What will happen if a fish is taken out of water?	
			c. What happens to ghee when kept on a hot pan?	

S.No.	Concept tested	Materials needed	Instructions given to the child	scores
9.	Life and death		I would ask you some questions to which you can answer	
			a. Does a chair walk?	1
			b. If no, why?	1
			c. Has a car life while it is driven?	1
10.	Time		a. When does the sun rise?	1
			b. When does the sun set?	
			c. When do you get up at your home?	1
			d. What day is today?	1

S.No.	Concept tested	Materials needed		Instruction given to the child	Scores
11.	Weight	Empty (50g) and partially (150g) filled powder tins of same size and colour	a.	I am showing a pair of powder tins. Take them feel and say which tin is heavier	1
		Partially and completely filled tins (250g) of same size and same colour	b.	I am going to show another pair of tins. Say which is lighter of the two	1
		Empty (50g) partially (150g) and completely filled (250g) powder tins.	c.	Here are three tins, pointout which is the heaviest among them.	1
		Same sized wooden and iron ball of same colour	d.	I am giving two balls of similar size, take it and say which is the lighter one.	1
12.	Thickness	Same sized white paper, tracing paper and chart paper	a.	Here are three sheets of papers. Find out which is the thickest	
		Three cloth pieces of same size and and with different thickness	b.	Now I am going to show three pieces of cloth. Find out which is the thinnest	

S.No.	Concept tested	Materials needed	Instructions given in the child	Score
		Three wooden pieces of same size with different thickness.	C. Similarly I have given three flat wooden pieces. Find out which has medium thickness	1
13.	Texture	Same coloured pieces of sack, nilex and velvet	I am giving you three pieces of cloth for you. Touch through one at a time, feel well and then say how they are.	3
14.	Number	14 Plastic coins of same size and colour	a. Have you seen this type of plastic coins? I would give you a few coins. From that, take out twelve coins and count the rest of them and tell me	1
		10 plastic coins	b. I have arranged some coins in a row. You take out the same number of coins and arrange it	1
			c. Say how many fingers you have in one hand	1
			d. How many ears do you have	1

S.No.	Concept tested	Materials needed	Instructions given to the child	Score
15.	Colour	Red, green and yellow varnish paper, pasted in a card board each separately	I am having three coloured papers. I will show you one by one. Tell me the colour of each.	3
Total				15