A COMPARATIVE STUDY OF THE MENTAL ABILITIES OF URBAN AND RURAL PRE-SCHOOL CHILDREN

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I INTRODUCTION

The children of today are the citizens of tomorrow. For a developing country like ours, the responsibility rests rather heavily on the shoulders of these children who have to pave the way for a better future and make the nation stand hand in hand with other well developed countries. As the pre-school years are the most formative years, the foundation for a bright future should be laid at this very stage.

The Swedish poet and author Ellenkey, prophesied that 'Our century would be the century of the child". "If you would like to know a man, look to his childhood" maintains, Chittenden (1967) for, the importance of childhood experiences in determining adult behaviour has long been recognised.

On 27th August 1974, in the 27th year of its independence, India adopted a momentous decision - "The resolution on National policy for children" - which recognises the children as the nation's supremely important asset and declares that the government should take over the responsibility for their nurture and solicitude.

Even if a country has limited resources, it cannot afford to overlook the question of early childhood care as it gradually affects the quality of its people. Early childhood care is an investment and not a luxury. (Meera Mahadevan, 1975).

The most important element in human society is the human resource. Protecting today's children, developing their abilities and guiding their character are society's most vital tasks. (Chandramani, 1973). Optimum progress and prosperity of a nation are closely related to the optimum growth and development of its children (Ramji, 1972).

The concept of a child as an individual member of the society is a new idea of the 20th century and this idea and the 'Discovery of the child' has given us a new challenge in the field of child welfare and education . (Bhai, 1969).

Devadas (1964) claims that the preschool years are the most formative years of human life, becuase on them rests the entire span from childhood to old age.

Radha Krishnan(1962) stresses that the prosperity or poverty, strength or weaknesses of our nation depends on the care with which the future citizens of India are brought up. The most, important years of child's development are preschool years (3-6).

The pre-school age is the most significant and impressionable period in an individual's life. A child who has the potentialities for development has to be nurtured with utmost care and attention so that he can have adequate achievement in his successive phases of development. He can enter the adult life, physically fit, memtally alert and socially adjusted. (Sarojini, 1973).

The child is a learner. He is curious. He observes. He asks questions. He investigates. It is a period where tremendous amount of basic information is being acquired (Rajalakshmi and Uma, 1973).

The age between 3 to 6 is a very crucial one in the life of a human being because the capacity to seen and observe and the training of the senses belong to this period. It is the age of discovering the world, which if neglected, cannot be made up later when other demands are made in the child. (Rao, 1969).

Pre-school age marks an important period in mental development, because 50 per cent of mental growth is completed by the time the child is 4 years old. In other words, child's brain reaches 75 per cent of its adult weight by the end of the second year; by age of 6 it increases to 90 per cent of its adult weight (Sharma, 1974).

Since the dawn of this century, the importance of intelligence has been well recognised by psychologists, who have made great efforts to define the term 'Intelligence".

To quote a few:

Webster's New International Dictionary defines Intelligence as "the capacity for knowledge and understanding especially as applied to the handling of novel situations; the power of meeting a novel situation successfully by adjusting one's behaviour to the total situation".

"Comprehension, invention, direction and censorship: Intelligence lies in these four words". (Alfred Binet, 1958).

Throndike (1927) says: "We may define intellect in general as power of good responses from the point of view of truth or fact". Terman (1968) says: "An individual is intelligent in proportion to his ability to carry on abstract thinking".

Garison and Kingston (1964) state that intelligence is an aggregate of highly specific abilities.

Mental ability is the ability to interpret or understand everyday situation and to profit by experience in adjusting to new situations or problems. (Brisbane and Ricker, 1965).

Bhatia (1965) describes mental ability as a set of foundational abilities which include attending, perceiving, observing, using language or problem solving.

"The term 'mental ability' could mean no more nor less than development of ability to think", to use the words of Educational policies commission. "The use of plural term 'mental abilities' suggests that several separate abilities are involved (Watson, 1966).

Thurstone (1946) and Merry and Merry (1950) view intelligence as a number of primary mental abilities and independent factors which different people possess in varying degrees. The primary mental abilities are - Verbal Ability, Perceptual Ability, Numerical Ability, Word Fluency, Memory, Spatial Relations and Reasoning. Moreover, these abilities are nearly or completely separate and distinct functions of the mind.

In India, children below six, constitute a population of 115 million out of which, 94 million live in rural areas and 21 million in urban areas. These children constitute 17 per cent of the total population of India. About 15 million children are being added to the pre-school population every year. (Mira, 1972).

Having regard to their number and serious consequences, if their problems are neglected, the care of the pre-school child has become a matter of urgent necessity.

Hence, the aim of this study is to find out,

1. Whether there is a significant difference between the mental abilities of urban and rural pre-school children.

2. Whether the differenee between the specific mental abilities between urban and mural children is significant.

3. Whether there is significant difference between the mental abilities of 4 years and 5 years children.

4. Whether there is sex difference in mental abilities.

II REVIEW OF LITERATURE

The literature of the study can be reviewed in the following manner.

1. Definition of Intelligence
2. Factors influencing Intelligence
3. Constancy of the I.Q.
4. Assessment of Intelligence
5. Importance of Intelligence tests

1. Definition of Intelligence:

Psychologists do not always seem to agree with one another on what Intelligence is. No one set of words is universally accepted to define this concept, rather, a number of definitions have been advanced: Among the more common of these are the following:

The ability to profit by experience
The ability to adjust to one's environment
The ability to solve problems
The ability to perceive relationships
The ability to think abstractly
The ability to learn (Kolesnik, 1970).

There are as many definitions of Intelligence as there are schools of psychology, and much ink has been spent in attempts to reconcile them.

An operational definition:

"The ability to learn, to perceive, to appraise and adjust to the novelty in a situation and to make an adaptive response". (Wall, 1973).

According to Binet (1958), Intelligence involves three characteristic Qualities of one's behaviour:

a. The tendency to take and maintain a definite direction

b. The capacity to make adaptions for the purpose of obtaining a desired goal and

c. The power of auto-criticism.

Baller and Charles (1961) say: "By Intelligence we usually mean a person's ability to learn, to adapt, to solve new problems. It is not an entity in itself, but simply a way of behaving".

Ballard (1962) says that, the various definitions of Intelligence may be grouped into the following 3 categories:

1. Intelligence is that general ability of an individual which helps him in very mental process.

2. Intelligence is the sum total of two, three or more different abilities.

3. Intelligence is the essence of all special abilities.

Goddard (1968) defied intelligence as "the degree of availability of one's experiences for the solution of immediate problems and the anticipation of future ones".

Sorenson & Malm (1963) view that, "Intelligence refers to brightness, the ability to think, the ability to learn, the ability to give accurate answers and the ability to succeed at one's tasks and duties".

According to Stern (1930) "Intelligence is a general capacity of an individual consciously to adjust his thinking to new requirements. It is a general mental adaptability to new problems and conditions of life".

Wechsler (1958) believes that "Intelligence involves not only symbols, abstraction and concepts but also the ability to deal with situations and problems where concrete objects are involved".

Wickens & Meyer (1965) define intelligence as "a verbal ability which includes such skills as perceiving relationship, dealing with material and learning and retaining concepts".

Psychologists accept the following definition of Intelligence - "Intelligence is a general mental ability. It takes various for while in action".

Factors influencing Intelligence:

Many factors influence intelligence. They are: Heredity and environment, maternal nutrition, birth injuries, nutrition of the child, socio-economic status, parent's education, occupation, cultural background, place of residence, parity etc.

Heredity and Environment:

Until approximately 20 years ago, the question of whether heredity or environment was more significant in producing individual differences in mental abilities was a moot one.

One of the most widely discussed questions in educational psychology has had to do with the relative effects of heredity and environment on mental ability.

Research studies going back at least as far as 1869, when Francis Galton published his Heredity Genius, have demonstrated that a child's degree of mental ability is related to that of his parents. But in and of themselves, findings of this type do not distinguish between the effects

of heredity and environment. In order to ascertain the relative effects of heredity and environment on mental ability, studies have been made on identical twins and adopted children.

Newman and his associates studied 19 sets of identical twins who for one reason or another were reared apart from one another. They compared them not only with each other but also with 50 pairs of fraternal twins and 50 pairs of identical twins raised together. They found that the average difference in I.Q. between the identical twins raised apart from one another, slightly above 8 points; between fraternal twins, nearly 10 points.

One member of a pair of identical twins was brought up in a backward community where she received only 2 years of formal schooling. Her sister from whom she was separated at 18 months of age, was given college education. At the age of 35, the college graduate was found to exceed her sister by 24 I.Q. points. He concludes that it is the influence of superior educational and social environment.

Iowa researchers studied about 150 illegitimate children who were placed in good foster homes before they were six months of age. There is evidence that most of these

children were born to parents who were below average in Intelligence. The I·Q of 80 of the fathers were found to average about 93. It is assured that, if these children had been reared by their true parents, children would have grown up to resemble them in general mental ability. By age 13, however, the average I·Q of the 100 children who were followed up that long was about 117. In general, the level of performance of these foster children approximated that of natural children of parents in favourable environmental situations.

Place of Residence:

Rural children in the United States attain lower average I·Q than urban children has been confirmed in numerous reports. Shepard (1942) has shown that rural children, inferior to urbans on verbal tests and on tests involving speed of performance, were definitely superior in mechanical assembly and in error scores in spatial relation tests. Environmental demands and practices must be assumed to have some part in determining such differences.

Socio economic status:

I·Q scores differe according to socio economic status, with scores decreasing as status decreases. Early studies, Havighurst and Janke (1955) showed the average I·Q of white collar children to be 112, compared with 98 for the lowest occupational group.

A more recent study by Bayley and Schaefer (1964) also revealed positive correlations of scores with such socio-economic factors as family income, father's education, mother's education, father's occupation and composite social rating. Such socio economic differences, however do not affect scores up to 16 months. (Bayley, 1965).

It is undoubtedly true that part of the social class difference in intelligence represents genetic influences (Lindsey, Loehlin, Manosevits and Thiessen, 1971). It is also clear that certain aspects of the lower-class environment are detrimental to optimal intellectual development. Willerman, Broman and Fildler (1970) reported that infants who were retarded at 8 months were 7 times more likely to obtain I.Qs below 80 at 4 years if they come from lower social class families than if they came from high social class homes.

Father's Education:

Bayley and Schaefer (1964) have shown that boys' I.Q scores show highest correlation with father's occupation and girls with both parents' education.

In the study conducted by conrad and Jones (1954) when the Army Alpha test was used for both parents and

off spring, the parent-daughter correlation is 0.57, the parent-son correlation is 0.4 on Stanford - Binet, the parent-daughter correlation is 0.48, the parent- son correlation is 0.51.

Nutrition:

Nutritional deficit, if it occurs during the critical period of development, has serious impact on later intellectual development. Due to malnutrition, the damage done to the brain during the pre-school years is most irreversible and permanent. (Rao,(1970), Rose, (1970), Banner (1969).

The study done by Stoch and Smith (1963), with chronically malnourished children illustrates clearly that malnutrition during childhood, between the ages of 1-5 years, when the brain growth is restricts mental development.

Malnutrition, has been proved through extensive studies that it affects the mental development and intelligence also, especially in the case of children, because childhood is the period of rapid physical and mental growth and development (Devadas, 1966).

Cavioto (1970) and Hegsted (1969) found out the effects in malnourished children and say that their lanugage ability, learning ability, motivation, eye-hand co-ordination are also retarded.

Severe malnourishment during infancy has a depressing effect on I.Q scores. (Stoch and Sunythe, 1963). Colored children in South Africa, severely malnourished in infancy, when tasted, proves to be significantly below an adequately nourished group at seven years of age.

The NIN of Hyderabad, by employing specially developed battery of tests suitable for Indian children, tested the mental performance of a series of children who had once suffered from serious malnutrition and had been successfully cured. Their performance was compared with that of a group of children who had not suffered from the disease. These normal children were matched for a number of variables like age, sex, socio economic status, educational level of parents and schooling which are all known to influence mental performance. It was found that the performance of children who had earlier suffered from severe malnutrition was clearly inferior to that of children who had not gone through an episode of severe malnutrition.

Environmental impoverishment during infancy and early childhood can have a depressing effect in I.Q scores. (Goldfarb, 1945; Skeels, 1948). Children in orphanages for example, where little individual care and stimulation are provided, show a deficit in concept and language development as well as in affective areas.

Sex:

A number of investigations have shown very small differences in the average test scores of boys and girls, who seem to be equal in general intelligence. When a large number of boys and girls are tested, it is found that girls have a higher average for items in language, social relationships and memory. Boys have a higher average for items involving spatial relationships, number and mechanical relationships. Although girls mature physically and socially much more rapidly than boys, their intellectual ability seems to develop at the same pace. (Thompson, 1969).

Many studies have shown that girls, particularly in the early school years, excel boys in verbal tests of Intelligence. In the later school years, the boys have been found, on the whole, to excel the girls. Most studies have not shown much of significant differences between the average performance of girls and boys. (Boax, 1964).

3. Constancey of IQ.

Bradway, Thompson and Cravens (1958) conducted a study on children originally tested between the ages of 2 and 5½ as part of the Standford-Binet standardisation sample. Initial IQ's correlated 0.65 with 10 year retests and 0.59 with 25 year rests.

According to Bloom (1964), repeated tests of the same children over time show that, contrary to the notion that I.Q is constant, IQ is quite variable early in life. It becomes relatively stable in children after 4 or 5 years, although there are individual children whose IQs fluctuate widely.

In a longitudinal study of 140 children conducted at Fels Research Institute by Sontag, Baker and Nelson (1958), Stanford Binet scores obtained at 3 and 4 years of age correlated 0.83. The correlation with the 3 years tests decreased as the interval between retests increased, but by age 12 it was still as high as 0.46.

Honzick (1954) found that about 85 per cent of the children who were studied during their school years varied 10 or more I Q points between the ages of 6 and 18. During same period about 58 per cent varied by 15 or more points; about 35 per cent by 20 or more points and 9 per cent by 30 or more. A few varied by as much as 50 points.

According to the findings of Berkely growth study, which was conducted at the university of California, test-retest correlations of mental ability scores are greater, when the tests given are closer. For example,

the correlations between tests given at age 4 and 18 is 0.62, while that between tests given at age 14 or 15 age 18 is 0.96.

Kagan (1962) found that such personality variables as competitiveness, curiosity and the feeling of a need to achieve, were related to gains in Intelligence.

4. Assessment of Intelligence:

The attempt to measure intelligence has entailed more continuous, long term intensive effort than any other project in psychological measurement. For centuries men have puzzled over the enormous differences in sheer intellectual capacity that separate a socrate from an ordinary citizen, an idiot from a normal child. (Tyler, 1969).

Some of the Intelligence Tests standardised for pre-school children are as follows:

1. Alfred Binet and Simon developed a scale - Binet Simon Scale, which is an individual verbal test.

2. Pinter-Paterson Performance Scale is an individual performance test.

3. Good enough developed - Draw-a-man test, which is a group performance test.

4. Koh developed - Koh's block design test, which is an individual performance test.

5. Good enough's Minesota pre-school test is an individual, verbal and nonverbal test.

6. Terman and Merills - Revised stanford Binet is an individual verbal test.

7. Gessel's developmental Schedule is an individual test, having both verbal and non verbal items.

Apart from these, there are:

1. California Test of Mental Maturity 1963 Revision (CTMM)

2. Henmon - Nebon Tests of Mental Ability - Revised Edition

3. Huhlman - Anderson Intelligence Tests - 7th edition.

4. Lorge - Throndike Intelligence Tests

5. Otis - Lennon Mental Ability Tests

6. Pinter General Ability Tests - Revised

7. Merill Palmer Scale of Mental Tests

8. Wechsler Pre-school and Primary Scale of Intelligence.

Mental Tests in India:

1. Dr. C.H. Rice developed - Hindustani Binet performance scale

2. Dr.Kamat adapted - Binet scale for Marathi and Kanares speaking children.

3. Pramila Pathak modified the Good enough's Draw - a-man Test.

4. University of Baroda modified Nancy Bayley Test.

5. In 1965, Miss Satyavathi developed a Pre-school Test.

6. In 1967, Miss Annapoorna perfected the same Preschool Test.

7. Dr. Ramaseshan in Sri Venkateswara University constructed a pre-school test.

5. Importance of Intelligence Tests:

Of the many ways in which individuals differ from one another, none is of more significant to the teacher than differences in their intelligence or mental abilities.

Teachers as well as psychologists are ordinarily not contended to know that one pupil is bright and another dull, or that one is slightly more intelligent than another. They want and may need to know how bright, how dull, or precisely how much more intelligent one is. (Kolesnik, 1970).

Bhatia (1965) is of the opinion that, "The original purpose for which Intelligence tests were devised was to discover and identify the lower grades of intelligence, to separate retarded and backward children". Hilgard (1953) maintains that, intelligence tests are designed to measure the abilities that distinguish the bright from the dull. Because brightness, and dullness are important in school success, in vocational success and in social adjustment. Generally, the Intelligence test is one of the most important tools that psychology has developed.

Kolesnik (1970) views that Tests of Mental Ability can be useful to the teacher as a means of helping her (1) understand the individual learner and guide his learning experiences. (2) Teachers parents and administrators often find Intelligence test results useful as explanation of a child's difficulty with his school work. (3) Mental Ability Test scores might also prove helpful to the teacher in understanding some of the behaviour or personality problems of her students.

Boaz (1964) points out that (1) Intelligence tests are very useful in the educational guidance of children. (2) For any programme of vocational guidance and proper vocational selection, intelligence testing is a basic necessity.

(3) For the study of personality also intelligence tests have contributed a great deal. (4) Modern intelligence tests, have also helped us to discard old ideas that girls are less intelligent than boys and that a particular race as a whole is inferior to other races in Intelligence. (5) With the help of intelligence tests we have been able to study the factors influencing intelligence. (6) When testing became highly developed, these tests and the process of their construction have sharpened and made clearer the very concept of Intelligence.

To lead a successful life, intelligence is a prime necessity. Pre-school years are the formative years, when the seeds of physical and mental growth sown by heredity, should be well protected. As environment has an equal share to play with heredity in determining one's mental abilities, care should be taken to promote ideal environmental conditions to enable the pre-school children to develop their potentialities to the fullest growth possible.

III EXPERIMENTAL PROCEDURE

The present investigation, that is, "A comparative study of the Mental Abilities of the urban and rural pre-school children", is discussed under the following heads:

1. Selection of the Area
2. Selection of the sample
3. Selection of the Material
4. Administration of the Test
5. Scoring and Evaluation

1. Selection of the Area:

In order to compare the mental abilities of urban and rural children, Coimbatore town and villages around Coimbatore were selected as the area of investigation. Samples were selected from, Sri Avinashilingam Home Science College Nursery and elementary schools, Holy Family Nursery School, Christ Nursery School, Vivekananda Nursery School and Air Force Administrative College Nursery Schools at Coimbatore and Agraharasamakulam, Kotaipalayam and Thottipalayam villages situated 23 km. apart from Coimbatore. The above places were selected since the sample required was available there in.

2. Selection of the sample:

The sample includes 400 children between the age group 4 and 6.

50 boys and 50 girls of 4 years urban,

50 boys and 50 girls of 4 years rural,

55 boys and 45 girls of 5 years urban,

50 boys and 50 girls of 5 years rural.

Care was taken to select only Tamil-knowing children, since the test was to be administered in Tamil.

3. Selection of the Material:

To test the mental abilities of the subjects, a test on Mental Abilities (Based on Thurstone's Primary Mental Abilities) constructed by Hemalatha Natesan * was administered.

The test includes six sub-tests to measure the six factors of mental abilities namely - Verbal Ability, Comprehension, Information, Memory, Spatial Relations and Reasoning.

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* Research Scholar, under the guidance of Dr.Rajammal P.Devadas, M.A., M.Sc., Ph.D. (Ohio), Principal, Sri Avinashilingam Home Science College, Coimbatore. Material under standardisation, 1975, unpublished.

The sub-tests are as follows:

I. Verbal Ability

1. Identifying objects by name
2. Picture vocabulary
3. Identifying objects by use

II. Information

III. Comprehension

1. Verbal comprehension
2. Following Directions

IV. Memory

1. Memory for digits
2. Memory for words
3. Memory for story
4. Memory for answering questions of a story
5. Memory for object removed

V. Spatial Relations

1. Visual perception
2. Matching quantities
3. Mutilated pictures

VI. Reasoning

1. Verbal Reasoning
2. Judging weights and sizes

Of the above sub-tests, 5 are verbal and one is nonverbal. (Spatial Relations). Before each sub-test instructions are given orally in Tamil, and the responses of the subjects are also in Tamil. (The details of the test are given in the Appendix).

This test is an individual test and as such only one child can be tested at a time. Anastasi (1968) also stresses that "At the pre-school ages individual testing is required in order to establish and maintain rapport, as well as to administer oral and performance type of items for such children".

"Historically, the individual test was the first of its kind to be developed and today they are considered to be more valuable and accurate measures. ~~Since they are considered to be more valuable and accurate measures.~~ Since they are expensive and time consuming, they are used where the most precise possible estimate of mental ability is desired (Kolesnik, 1970).

This test is a power test and there is no time limit, It consumes about 20 minutes to test one child.

Pilot study was conducted on 10 rural and 10 urban children, and was found that the test could be administered on them.

4. Administration of the Test:

To begin with, the investigator established rapport with the children by frequent visits to their homes and schools. The children were made to feel free to move with the investigator. After the establishment of rapport, each child was called individually. They were seated comfortably. Clear instructions were given in simple language before each sub-test.

If the subjects showed disinterest or was distracted, the test was stopped for the time being and continued later. The responses of the subjects were recorded in the answer sheet without the knowledge of the subjects.

5. Scoring and Evaluation:

Each sub-test has different subdivisions which consists of a number of items. For each correct answer one mark was given. The maximum score possible is 124, the minimum being 0. The total raw scores of the subjects were analysed statistically.

IV RESULTS AND DISCUSSION

A study was conducted to find out the mental abilities of urban and rural pre-school children. The result obtained is as follows:

TABLE - I

MENTAL ABILITIES SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M, AND CR

Age in years	Residence	N	Mean	S.D.	SE_M	CR	Significance level
4	Urban	100	79.7	16.0	2.1	14.3	.01
	Rural	100	49.0	14.0			
5	Urban	100	84.4	17.1	2.08	15.7	.01
	Rural	100	51.1	12.0			

SD = Standard Deviation

SE_M = Standard Error of the Mean

CR = Critical Ratio

The above table clearly shows that there is a wide difference between the means of urban and rural children, irrespective of their age. The mean difference (4 years - 30 points; 5 years - 33 points) between urban and rural

children of both the 4 years and 5 years is significant at .01 level. This indicates that, the urban pre-school children are superior in mental abilities to the rural pre-school children, as far as this study is concerned.

The above results are in line with that shown by Terman and Merrill, (1937): city children make higher scores on intelligence tests than farm children. The mean IQ for city children was 105.7 while for rural children it was 99.2. Klineberg had found the same in the year 1931. This superiority of city children result because the city environment is more stimulating.

TABLE - II

MENTAL ABILITIES SCORES OF URBAN 4 AND 5 YEARS AND RURAL 4 AND 5 YEARS CHILDREN WITH MEAN SD, SE_M AND CR

Residence	Age in years	N	Mean	S.D.	SE_M	CR	Significance level
Urban	4	100	79.7	16.0	2.3	2.0	.05
	5	100	84.4	17.1			
Rural	4	100	49.0	14.0	1.8	1.2	Not significant
	5	100	51.0	12.0			

FREQUENCY POLYGON OF MENTAL ABILITIES SCORES OF 200 URBAN 4 and 5 YEARS CHILDREN

FIGURE I

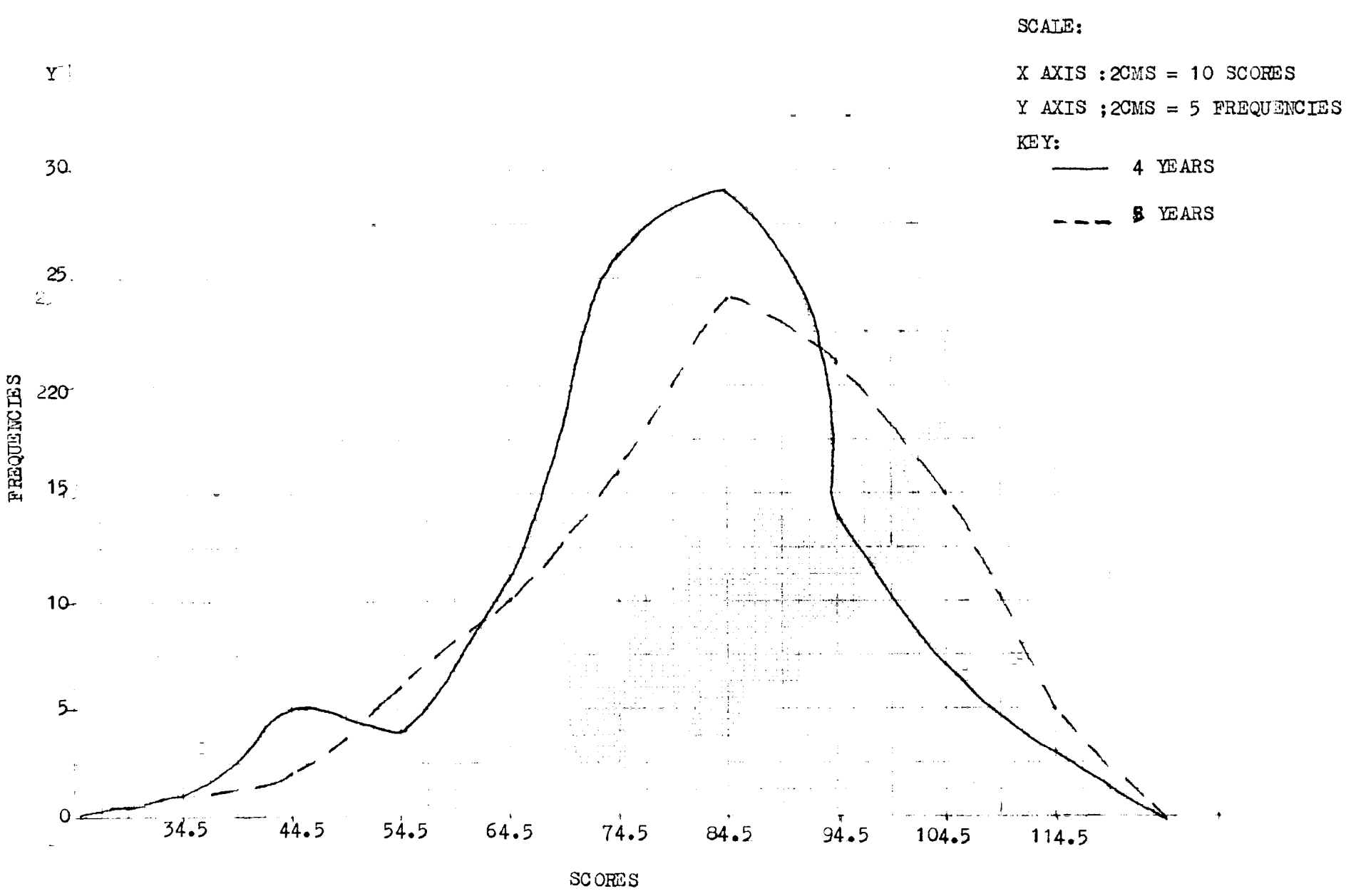
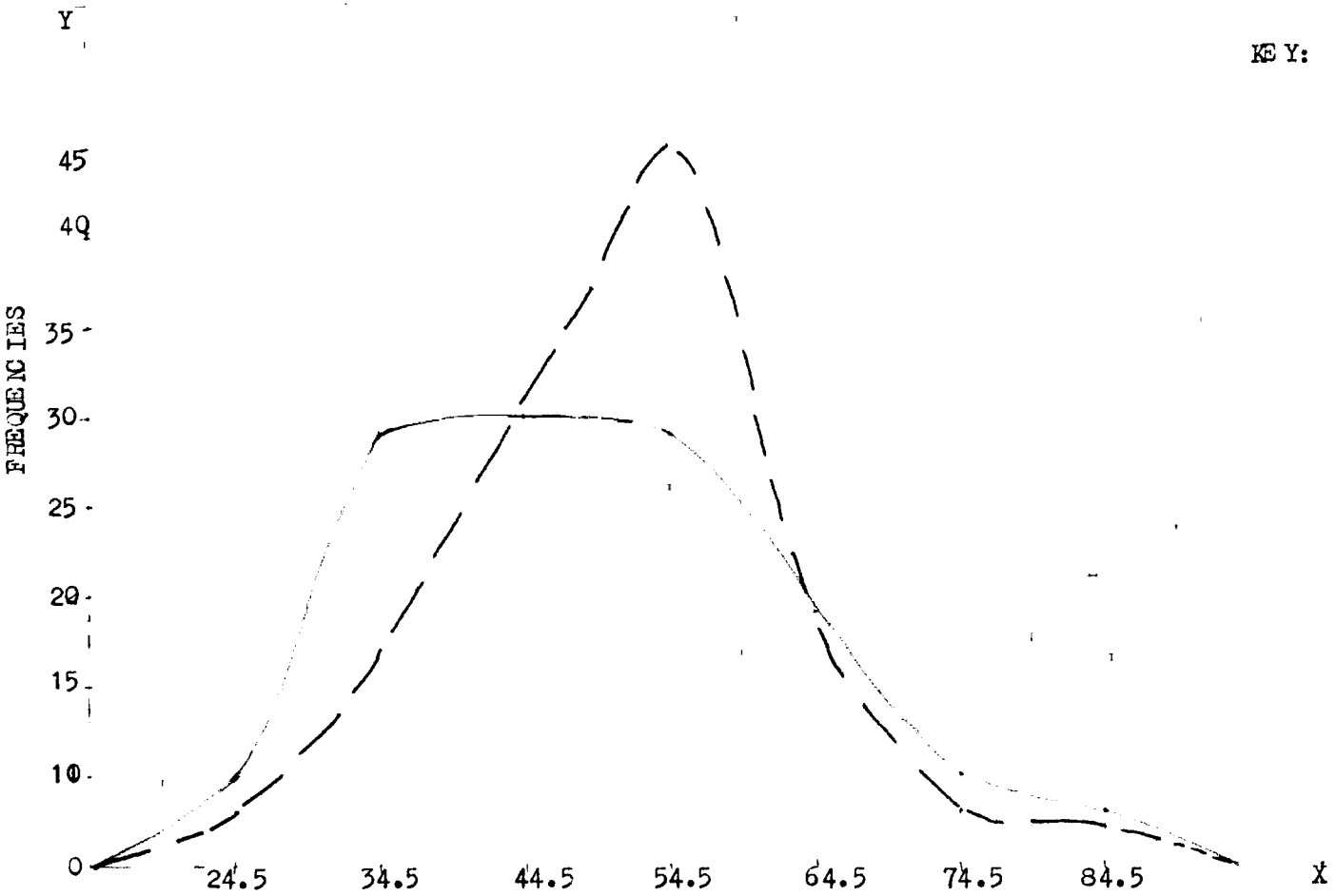


FIGURE 2



SCALE:

X AXIS : 2 CMS = 10 SCORES

Y AXIS : 2.5 CMS = 10 FREQUENCIES

KEY:

—— 4 YEARS

– – – 5 YEARS

A glance at Table II indicates that the mean difference between 4 and 5 years urban children is significant at 0.05 level, where as the difference between rural 4 and 5 years is not significant.

TABLE - III

VERBAL ABILITIES SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M AND CR

Age in years	Residence	N	Mean	SD	SE_M	CR	Significant level
4	Urban	100	19.1	1.3	0.19	15.8	.01
	Rural	100	15.7	1.4			
5	Urban	100	19.8	4.85	0.61	16.0	.01
	Rural	100	10.2	3.75			

It is interesting to note from Table III that, there is a significant difference between the means (.01) of urban and rural pre-school children in their verbal ability, irrespective of their age.

TABLE - IV

COMPREHENSION SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M AND CR

Age in years	Residence	N	Mean	SD	SE_M	CR	Significance level
4	Urban	100	6.8	9.4	1.64	2.0	.05
	Rural	100	3.6	13.5			
5	Urban	100	6.95	0.6	0.96	25.0	.01
	Rural	100	4.4	0.77			

Table IV shows that, as far as comprehension is concerned, there is a significant difference in means between urban and rural pre-school children, and that the significance is greater for 5 years (.01), when compared to the 4 years (.05) group.

TABLE - V

INFORMATION SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M AND CR

Age in years	Residence	N	Mean	SD	SE_M	CR	Significance level
4	Urban	100	6.5	1.0	.12	25.0	.01
	Rural	100	3.35	0.6			
5	Urban	100	6.95	0.8	1.03	34.0	.01
	Rural	100	3.55	0.65			

Table V clearly shows that urban children are definitely superior to the rural children in Information whether their age is 4 or 5 years. The mean difference is significant at .01 level.

TABLE - VI

MEMORY SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M AND CR

Age in years	Residence	N	Mean	SD	SE_M	CR	Significance level
4	Urban	100	11.75	1.0	0.164	25.0	.01
	Rural	100	7.15	1.3			
5	Urban	100	13.5	1.55	1.9	28.7	.01
	Rural	100	8.05	1.1			

With regard to memory also, urban children are better than the rural children, which is indicated by Table VI.

TABLE - VII

SPATIAL RELATIONS SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M AND CR

Age in years	Residence	N	Mean	SD	SE_M	CR	Significance level
4	Urban	100	17.85	5.06	.52	14.0	.01
	Rural	100	10.95	1.35			
5	Urban	100	18.6	6.0	.62	13.0	.01
	Rural	100	10.7	1.55			

Table VII shows that urban children of both 4 and 5 years are superior to rural children in 'spatial Relations', the mean difference being significant at .01 level for both the age groups.

TABLE - VIII

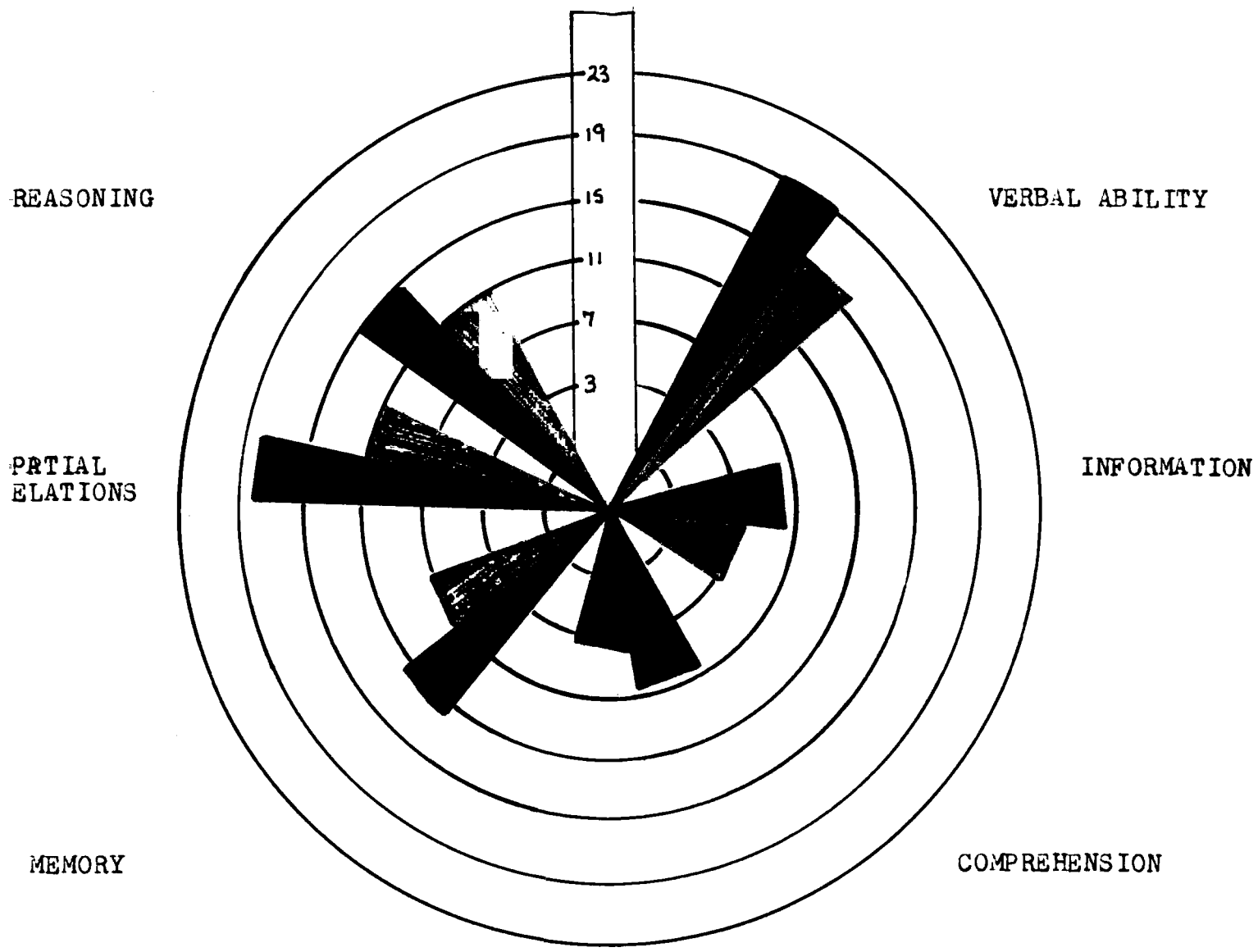
REASONING SCORES OF THE ENTIRE SAMPLE WITH MEAN, SD, SE_M AND CR

Age in years	Residence	N	Mean	SD	SE_M	CR	Significance level
4	Urban	100	14.5	1.15	.15	20.0	.01
	Rural	100	10.9	0.97			
5	Urban	100	15.45	11.0	1.9	1.3	Not significant
	Rural	100	12.9	15.5			

It is rather surprising that in 'Reasoning' the mean difference between urban and rural 4 year old children is highly significant (.01) while it is not at all significant for 5 year old urban and rural children.

FIGURE 3

DIAGRAM SHOWING THE MEAN SCORES IN THE SIX MENTAL ABILITIES OF URBAN AND RURAL 4 YEARS CHILDREN



SCALES:

1 Cm= 4 Scores

KEY:

URBAN

RURAL

TABLE - IX

MENTAL ABILITIES SCORES IN RELATION TO THE SEX OF THE CHILDREN WITH MEAN, SD, SE_M AND CR

Residence	Age in years	Sex	N	Mean	SD	SE_M	CR	Significance level
Urban	4	Boys	50	77.7	15.0	2.2	1.8	Not significant
		Girls	50	81.7	16.0			
	5	Boys	55	84.3	16.0	0	0	Not significant
		Girls	45	84.3	18.0			
Rural	4	Boys	50	60.9	16.0	1.89	0.9	Not significant
		Girls	50	59.1	11.0			
	5	Boys	50	60.3	12.0	1.62	3.0	.01
		Girls	50	55.5	11.0			

It is gratifying that there is no sex difference as far as mental abilities is concerned as found by this study and Boaz (1964) agrees with the same, But there is the exception of rural 5 year old children, where the boys have proved to be superior to girls, as indicated by Table IX.

HISTOGRAM OF THE MENTAL ABILITIES SCORES OF URBAN AND RURAL BOYS AND GIRLS OF 4 AND 5 YEARS AGE

FIGURE 5

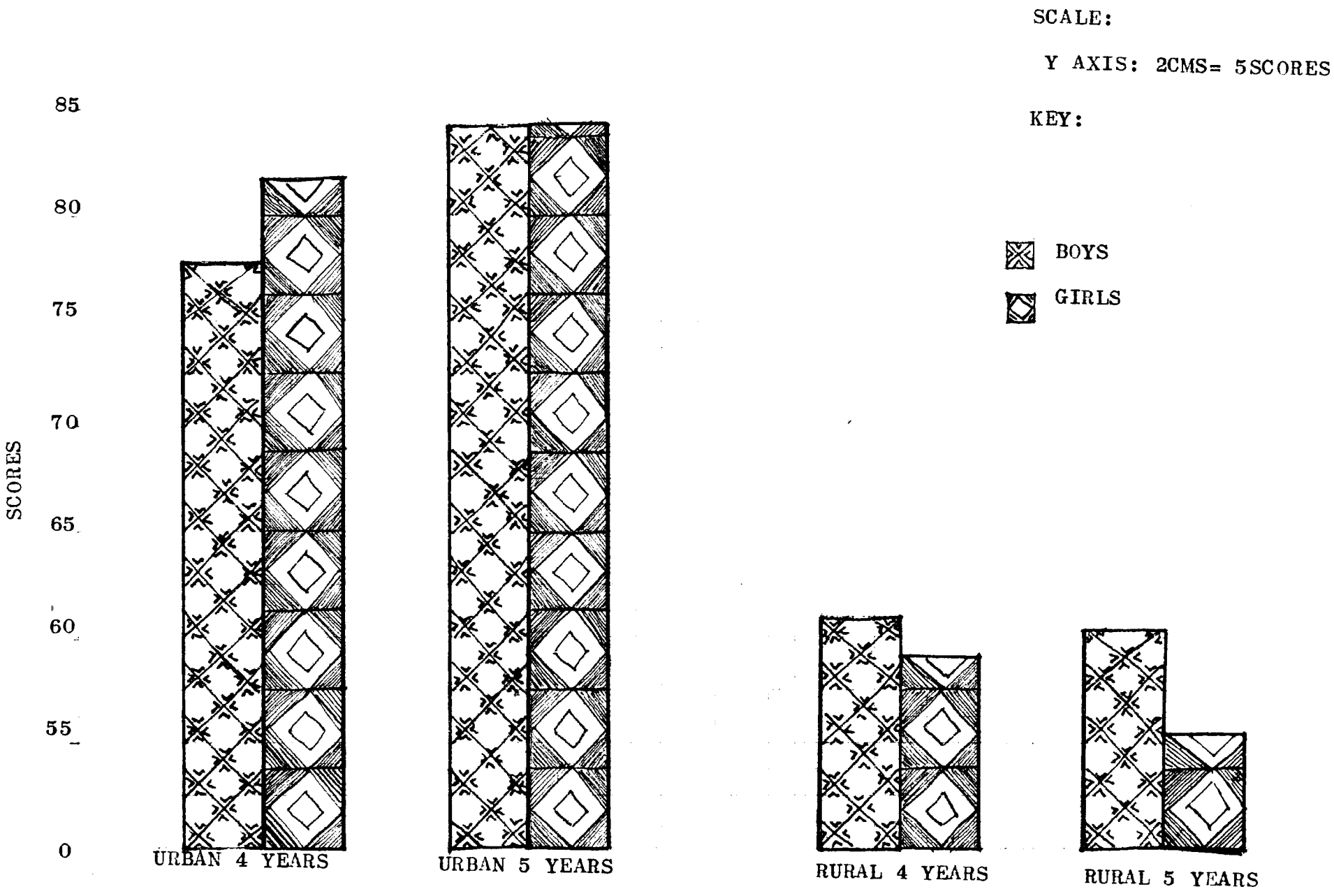


TABLE - X

MENTAL ABILITIES SCORES OF THE URBAN CHILDREN IN RELATION TO THE INCOME OF THE FATHER WITH MEAN, SD, SE_M AND CR

Age in years	Income	N	Mean	SD	SE_M	CR	Significance level
4	Low	48	74.7	15.0	2.1	4.46	.01
	Middle	52	84.5	15.0			
5	Low	55	80.1	15.0	2.1	5.48	.01
	Middle	45	91.6	15.0			

Table X shows that, greater the income of the fater, greater the mental abilities of children.

TABLE - XI

MENTAL ABILITIES SCORES OF THE URBAN CHILDREN IN RELATION TO THE EDUCATION OF THE FATHER WITH MEAN AND SD

Age in years	Educational level	N	Mean	SD
4	High School	41	71.7	14.0
	Graduate	37	84.5	11.0
	Post-Graduate	22	90.5	19.0
5	High School	40	78.5	15.0
	Graduate	28	85.9	16.0
	Post-Graduate	17	98.6	10.0

A glance at Table XI reveals that, higher the education of the father, superior the mental abilities of the children.

TABLE - XII

MENTAL ABILITIES SCORES OF THE URBAN CHILDREN IN RELATION TO THE EDUCATION OF THE FATHER WITH CR

Age in years	Educational Level	G	PG
4	H.S	7.1*	7.8*
5	H.S	3.4*	11.1*
4	G	-	2.7*
5	G	-	6.7*

H.S. - High School
G - Graduate
P.G. - Post graduate.

* Significant at 0.01

Table XII reveals that for the urban sample the difference in mean between the children of parents of different levels of education is highly significant (.01), the mean increasing with the education of the father.

TABLE - XIII

MENTAL ABILITIES SCORES OF THE RURAL CHILDREN IN RELATION TO THE EDUCATION OF THE FATHER WITH MEAN ANE SD

Age in years	Educational Level	N	Mean	SD
4	Uneducated	53	43.0	11.0
	Primary School	24	52.8	11.0
	High School	23	58.0	16.0
5	Uneducated	73	46.3	8.6
	Primary School	22	47.6	11.0
	High School	5	58.5	23.0

From Table XIII we understand that for rural samples also, the mean mental abilities scores increases with the education of the father.

TABLE - XIV

MENTAL ABILITIES SCORES OF THE RURAL CHILDREN IN RELATION TO THE EDUCATION OF THE FATHER WITH CR

Age in years	Education level	P.S.	H.S.
4	U	3.6*	4.06*
5	U	0.9 †	4.9 *
4	P.S.	-	1.3 †
5	P.S.	-	4.4 *

U - Uneducated
P.S.-Primary School
H.S.-High School

* Significant at 0.01
*† Not significant.

Higher the level of education of the father, greater the mental ability scores of the children. This is revealed in Table XIV which indicates that for rural children, the mean difference in mental ability scores of children of different levels of education of fathers is statistically significant, but for the exception of 2 groups. That is, 4 years rural children of primary educated and high school educated fathers and 5 years rural children of uneducated and primary educated fathers, do not show significant difference in their mean mental ability scores.

V SUMMARY AND CONCLUSION

The study was aimed at comparing the mental abilities of urban and rural pre-school children. A test on Mental Ability (Based on Thurstone's Primary Mental Abilities) was administered to 200 urban and 200 rural children between 4 to 6 years of age.

The results were:

1. Urban children of both 4 and 5 years scored higher in mental abilities than the rural children.

2. The urban 5 years children are superior to the urban 4 years children in their mental ability, where as, there is no significant difference in mental ability of 4 and 5 years old rural children.

3. It is interesting to note that, the urban children are superior to the rural children in all the mental abilities, namely - verbal ability, information, comprehension, Memory and spatial Relations. But in the ability of Reasoning, there is no significant difference between 5 years urban and rural children.

4. This study does not indicate any sex difference in mental abilities of the children.

5. It is observed that the income and the educational status of the father has an influence on the mental abilities of the children.

   a. The higher the income of the father the higher is the mental ability of the child.

   b. Higher the educational level of the father, superior the mental abilities of the child.

Suggested topics for future research:

1. Factors that influence the mental abilities of pre-school children.

2. The reasons why the rural children are inferior to the urban children in mental abilities.

3. Ways of developing the mental abilities of children to attain the fullest potentialities.

B I B L I O G R A P H Y

Anastasi, A. 1964 — Pychological Testing. London: The Macmillan Company, pp.193-195, 216-217.

Barnes, Richard, H., Moore, Pond, Wilson, G. 1970 — "Malnutrition and Behavioural Development", The Journal of Nutrition Vol. 100. No.2. p.155.

Bhatia, H.R., 1965 — A Text Book of Education and Psychology. New York: Asia Publishing House, pp. 426-430, 436.

Boaz, G.D. 1969 — Some Fundamentals of Psychology. Madras: Gunalaya.

Brisbane, H.E., Ricker, A.F. 1965 — The Developing Child. Illinois: Chas, A. Bennett Co. p.230.

Burbury, Mary, M., Balint, Edna, M., Yapp, Bridget, J. 1961 — An Introduction to Child Guidance Macmillan and Company, p.115.

Carmichael, L. 1968 — Mannual of child psychology. New Delhi: Wilely Eastern Private Limited. p.466.

Chittenden, G.E., 1967 — Living with children. New York: The Macmillan Company, p.1.

Crow. L.D. Crow, A. 1956 — Human Development and Learning, New York. American book company, p. 46.

Devadas, R.P. Sambamurthy, R., Devadas, M.V.K. Mirabai, R., Radharukmini, A. 1964 — "Dietary and Nutrition Survey of a small village community in South India". Journal of Nutrition and Dietetics. Vol.1, No.2. p.110.

Forest, I., 1954 — Child Development. New York: MacGraw Hill Book Company, p.151.

Freeman, F.S. 1968 — Theoryand Practice of Psychological Testing New Delhi: Oxford and IBH Publishing. pp. 51-52.

Gardner, Bruce, D. 1964 — Development in early childhood: New York: Halper and Row. p.214.

Gates, I., Jersild, T., Mc Commell, T.R., Challamn, R.C. 1957 — Educational Psychology. New York: The Macmillan Company, pp. 225-230.

Hartup, W.W. 1972 — The Young Child , Reviews of Research Vol. 2. p.37.

Hilgard, E.R. 1953 — Introduction to psychology New York: Harcourt Brace and Company, p.211.

Louis, L. Mehta, P.H. 1966 — The First Mental Measurement Hand Book In India. NCERT. pp. 7. 13, 129.

Kamat, V.V. 1967 — Measuring Intelligence of Indian Children. Oxford University press. pp.5, 146.

Kolesnik, W.B. 1970 — Educational Spychology. New York: Mac Graw Hill Book Company, pp.144-146. 161.

Kent. R.N. 1973 — Child Development. Vol. 44, No.4, University of Chicago Press, p.798.

Madras Conference, 1970 — Report of the Seminar on the preschool Child. Conclusions and Recommendations, Paper Presented at the conference on the preschool child.

Marian, E., Breckeuridge, E. Vincent, W.B. 1965. — Child Development. Philadelphia: Saunders Company, p.257.

Meera, M. 1975 — "Children without childhood" Assignment Children. Vol. 29, p.42.

Merry, F.K., Merry, K.V. 1950 — The First two decades of life. New York: Harper and Brothers. p.286.

Mitra, S.K. 1964 — "Intellectual Development of the Child", Child Development - A Symposium New Delhi: NCBRT. pp. 44-45.

Mussen, P.H. Conger, J.J., Kagan, J. 1964 — Child Development and personality New York: Harper and Row. pp. 235-238.

Nunnally 1959 — Tests and Measurements. New York: Mac Graw Hill Book Company, p.125-127.

Phulrenu Guha 1974 — "Rights of children to good life" Swasth Hind. Vol. 18, No. 11, p. 289.

Prannath, L. 1975 — "The Child in India's Fifth Plan" Assignment Children. Vol.29, p.26.

Rajalakshmi, M., Uma, B. 1973 — A Guide for Nursery School Teachers NCERT. p.4.

Rao, Prasad, N., Singh, Darshan, Swaminathan, M.C. 1969. — "Nutritional status of pre-school children of rural communities near Hyd. City", Indian Journal of Medical Research. Vol. 147, No,11, p.2145.

Ruja, H. 1955 — Psychology of Life. New York: MacGraw Hill Book Company: p.173.

Sharma, V.P. 1974 — "Mental Development in pre-school years", Aschives of child Health. Vol. 16, No.6. p.216.

Skinner, C.E. 1970 — Educational Psychology. New Delhi: Prentice Hall of India Private Ltd., pp. 697, 716, 719.

Smart, R.C., Smart, M.S., 1972 — Readings in Child Development and Relationships. New Delhi: Ligh and Life Publishers. p.157.

Sorenson, H. 1964 — Psychology in Education. London: McGraw Hill Book Company, p.379.

Srikantia, S.G., 1975 — "Nutrition and mental Development" Nutrition. Vol.9, No.2, pp.29-32.

Stendler, L.C., Stendler, F. 1972 — Readings in Child Behaviour and Development, New York: pp.211-212, 254-256.

Terman, L.M., Mernill, Mand, A. 1937 — Measuring Intelligence. Boste: Houghton Mifflin Company, pp. 69-71.

Thompson, G.G., 1969 — Child Psychology , Bombay: The Tomes of India Press, pp. 394, 408.

Thurstone, L.M. 1946 — "Theories of Intelligence", Psychological Manual, Vol. 62, pp. 101-112.

Tyler, L.E. 1969 — Tests and Measurements. New Delhi: Prentice Hall of India Private Ltd. p.40.

Wall, W.B. 1973 — "The Development of Intelligence in early Childhood", Children in the Tropics. No.86, pp.1-2.

Watson, I.R. 1966 — Psychology of the Child. London: John Wiley and Sons. pp475.

Webster, 1952 — Websters New International Dictionary Merrian Company.

Wecksler, D. 1953 — "Intellectual Development and Psychological Maturity", Child Development, Vol.21, pp.45-46

APPENDICES

MENTAL ABILITY TEST

I. Verbal Ability:

1. Identifying objects by name:

Materials:

1. Book
2. Note Book
3. Piece of chalk
4. Purse
5. Kerchief
6. Blade
7. Shoe Polish
8. Post Card
9. Candle
10. Socks

Procedure:

The experimenter arranges the objects in the above order and picks out one at a time and shows it to the subject asking, "What is this?" or "What do you call this?" or "What is the name of this".

Scoring:

For each correct answer one mark is given.

The maximum score possible is 10.

2. Picture Vocabulary.

Material:

It consists of a booklet with the following pictures.

1. Mango
2. Table
3. Tiffin Carrier
4. Telephone
5. House
6. Tumbler
7. Ladder
8. Well
9. Motor car
10. Ladies Finger

Procedure:

The experimenter shows one picture after the other asking, "What is this?" or "What do you call this", "What is the name of this?".

Scoring:

For each correct answer one mark is given.

The maximum score possible is 10.

3. Identifying objects by use:

Items:

1. Fan
2. Clock
3. Note Book
4. Book
5. Cradle
6. Lamp
7. Petrol
8. Aeroplane
9. Train

Procedure:

The experimenter tells the name of the item one by one, and asks, "What is the use of" - or "Why should we have a - " .

Scoring:

For each correct answer one mark is given. The maximum score possible is 9.

II. Information:

Procedure:

The experimenter puts the following questions to the subjects and records the responses of the subject.

Questions:

1. Where is monkey's tail?
2. What is the name of this place?
3. Where will a lion be?
4. Which is bigger - Elephant or Cat?
5. What is the colour of a crow?
6. Where do we get milk from?
7. What will be the colour of the milk of a black cow?
8. How many fingers are there in a hand?
9. What do we get from a coconut tree?
10. How can we cross a river?
11. Which is heavier - Iron or cotton?
12. By what do they make a pot?

Scoring:

For each correct answer one mark is given.

The maximum score possible is 12.

III Comprehension:

1. Verbal Comprehension

Questions:

1. Point out your right ear.
2. Point out your left hand.
3. Point out your right leg.
4. Show me your small finger

5. What will you do, if the light is off while you are having your supper?

6. What will you do, if your clothes becomes dirty?

7. How can you avoid thorns while going out?

8. What is the name of the person, who brings letters?

9. What should you buy to go by train?

10. What will happen to a house built out of glass?

Procedure:

The experimenter puts the above questions to the subjects and records the responses of the subjects.

Scoring:

For each correct answer one mark is given.

The maximum score possible is 10.

2. Following Directions:

Procedure:

The experimenter says "Do what I tell you to do" and gives the following orders.

1. Keep this pencil on the table and give me the key kept on the table.

2. Keep this box on the table, close the door and give me the lock placed over there. (Pointing to it)

Scoring:

If the order is carried out correctly it is scored one.

The maximum score possible is 2.

IV. Memory:

1. Memory for digits.

Procedure:

The experimenter says, "Repeat what I say", and tells the following digits.

1. 4-6-2; 3-8-1.
2. 2-4-9-1; 7-1-5-3.
3. 3-7-5-8-4; 8-6-9-2-7.

Scoring:

If the subject repeats the numbers correctly in the same order, one point is given.

The maximum score possible is 3.

2. Memory for words:

Procedure:

The experimenter says, "Listen carefully to what I say, you must repeat it in the same words".

1. I won't fight with any body.
2. We have a beautiful garden at home.
3. Raman climbed the coconut tree and plucked the coconuts.
4. The monkey stole the mongoes from the basket and ate it.
5. Every day we must pray god and read our lessons.
6. Only if you are kind to everybody you will be called as a good boy.

Scoring:

If the subject repeats the statement correctly one mark is given. The maximum score possible is 6.

3. Memory for story:

Procedure:

The experimenter tells the story of "The Thirsty Crow" in the following way.

Once there was a crow. It was very thirsty. In a pot there was little water. But the crow could not reach it. Near by there were many stones. The crow put the stones, in the pot, one by one. The level of the water raised, the crow drank the water and flew away happily.

Then the experimenter says "Now tell me the story".

Scoring:

If the child's story bring out the full content of the story it is scored one.

4. Memory for answering questions of a story:

Procedure:

The experimenter tells the story - 'Fox and the Grapes', as follows.

Once upon a time there was a fox in the forest. The fox was very hungry. It saw a grapes garden. It was

full of grapes which could not be easily reached. The fox jumped, to eat the grapes, but it could never reach it. The fox said, "These grapes are sour" and ran away.

Then the experimenter puts the following questions to the subject.

Questions:

1. What was there in the forest?
2. How did the fox feel?
3. What did the fox see?
4. Did the fox eat the fruit?
5. Why didn't it eat?
6. What did the fox say in the end?

Scoring:

For each correct answer one mark is given.

The maximum score possible is 6.

5. Memory for objects removed:

Materials:

1. Pen, Key
2. Pencil, Button
3. Ball, Knife, Lock
4. Piece of chalk, whistle, Nail
5. Coin, Thread, Comb, Sweet
6. Match box, onion, Button, Bangle

Procedure:

The experimenter places the objects under item 1 (pen and key) before the subject and asks "What is this?". If the subject is not aware of the object, the experimenter tells the name of the objects. Then the experimenter says "Now look at these objects carefully". After a few seconds the experimenter covers the objects with a screen and removes one of the objects. Then she removes the screen and asks "What is missing?".

Scoring:

For each correct answer, one mark is given.

The maximum score possible is 6.

V. **Spatial Relations:**

1. **Visual perception:**

Material:

A booklet with 10 items.

Procedure:

The experimenter shows the first picture, to the subject and says "Here you see a picture in the centre. There are 4 more around it. Show me the one which is just like the one in the centre".

If the subject has difficulty in following, the experimenter demonstrates the first one.

Scoring:

For each correct response one mark is given.

The maximum score possible is 10.

2. Matching Quantities.

Material:

A booklet with 4 items.

Procedure:

The experimenter shows the picture to the subject ans says, "Here you see a picture in the centre. There are four more ~~more~~ around it. Show me the one which is just like the one in the centre".

If the subject has difficulty in following, the experimenter demonstrates the first one.

Scoring:

For each correct response one mark is given.

The maximum score possible is 4.

3. Multilated pictures:

Material:

A booklet with 17 multilated pictures.

Procedure:

The experimenter shows the picture one at a time and asks, "What is missing in this?".

Scoring:

For each correct response one mark is given.

The maximum score possible is 17.

VI. Reasoning:

1. Verbal Reasoning

Procedure:

The experimenter reads the following incomplete sentences to the subject and asks the subjects to fill it correctly.

Questions:

1. Chillie is hot, sugar is .....
2. Dog is on the ground, fish is .....
3. Train runs, aeroplane .....
4. Car runs on the road, ship .....
5. Earth is at the bottom, sun is .....
6. Ice is cool, fire is .....
7. Rabbit moves fast, snail .....
8. Elephant is big, cat is .....
9. Milk is white, cow is .....
10. Food, we eat, water we .....
11. Brother is a boy, sister is a .....
12. Snakegourd is long, ladies finger is .....
13. Mirror is smooth, jack fruit is .....
14. Sun rises in the morning, Moon rises in the .....
15. Cotton is light, iron is .....

Scoring:

For each correct answer one mark is given.

The maximum score possible is 15.

2. Judging weights and sizes:

Materials

1. A sand paper and a smooth paper
2. A cardboard and a tracing paper
3. Two similar boxes, one heavier than the other
4. Two pencils - one longer than the other
5. Two balls - one bigger than the other
6. A card with two lines - on straight and the other curved.
7. A card with two shades - one darker than the other

Procedure:

The experimenter shows the items in the above order with the following instructions.

1. Touch this and tell me which is rough, which is smooth
2. Which is thick, which is thin.
3. Which is heavy, which is light.
4. Which is long, which is short
5. Which is big, which is small

6. Which is straight, which is curved

7. Which is dark, which is light.

Scoring:

For each correct answer one mark is given.

The maximum score possible is 7.

The total score possible for the entire test is 124.

The above test was used with instructions in Tamil before each sub-test as given below:

Instructions:

I 1. "இது என்ன? இதன் பெயரென்ன?"

2. இது என்ன? இதன் பெயரென்ன?

3. இது எதற்கு உபயோகப்படும்?

II நான் கேட்பதற்கு பதில் சொல்.

III 1. நான் கேட்பதற்கு பதில் சொல்.

2. நான் சொன்னபடி செய்.

IV 1. நான் சொல்வதை திருப்பிச் சொல்.

2. நான் சொல்வதை திருப்பிச் சொல்,

3. நான் ஒரு கதை சொல்கிறேன் (கதை முடிந்தபின்)
நீ இந்த கதையைச் சொல்லு.

4. நான் ஒரு கதை சொல்கிறேன், (கதை முடிந்த பின்)

கேள்விகள்:

1. காட்டில் என்ன இருந்தது?

2. நரிக்கு எப்படி இருந்தது?

3. காட்டில் நரி எதைப்பார்த்தது?

4. நரி திராகூடப்பழம் தின்றதா?

5. என் திங்கவில் உலை?

6. நரி என்ன சொல்லிவிட்டுப் போயிற்று?

7. மேஜைமேல் வைத்திருக்கும் பொருள்களைக்காட்டி 'இது என்ன? இதன் பெயரென்ன?' என்று கேட்டு, தொரியவில் உலையென்றால், அதன் பெயரை கூறிவிட்டு, "இவற்றை நன்றாகப் பார்த்துக்கொள்" என்று "ஒரு சிறிய திரையில் அவற்றை மறைத்து ஒரு குறிப்பிட்ட பொருளை எடுத்துவிட்டு, "இங்கு எதைக் காணோம்?"

V. 1 and 2 முதல் பக்கத்தை பிரித்து "இங்கு நடுவில் ஒரு வரைபடம் இருக்கிறது. சுற்றி 4 வரைபடங்கள் இருக்கின்றன. நடுவில் இருப்பது போலவே (தொட்டு காண்பித்து) மற்றென்று எங்கே இருக்கிறது காண்பி.

3 ஒவ்வொரு பக்கத்திலுள்ள படமாகக் காட்டி, "இதில் என்ன காணவில்லை?"

VI

1. மிளகாய் காரமாக இருக்கும். சர்க்கரை .....
2. நாய் தரையிலிருக்கும், மீன் .....
3. ரயில் ஓடும், ஏரோபிளேன் .....
4. கார் ரோடில் போகும், கப்பல் .....
5. பூமி கீழேயிருக்கு, சூரியன் .....
6. ஐஸ் ஜில்லென்று இருக்கும், நெருப்பு .....
7. முயல் வேகமாகப் போகும், ஆமை .....
8. யானை பொரிசு, புலி .....
9. பால் வெள்ளை, காக்கா .....
10. சாதம் சாப்பிடுவோம், தண்ணீர் .....
11. அண்ணா ஒரு பையன், அக்கா .....
12. புடலங்காய் நீளமாக இருக்கும், வெண்டைக்காய் .....
13. கண்ணாடி வழவழவென்றிருக்கும், பலாப்பழம் .....
14. சூரியன் காலையில் வரும், சந்திரன் .....
15. பஞ்சு லேசாக இருக்கும், இரும்பு .....

2. <u>பொருள்களைக் காட்டி கேட்பது:</u>

1. இதில் எது வழவழவென்று இருக்கிறது? எது சொரசொரவென்றிருக்கிறது?
2. எது தடியாக இருக்கிறது? எது மெல்லியதாக இருக்கிறது?

3. எது கனம்? எது லேசாக இருக்கிறது?

4. எது நீளம்? எது குட்டை?

5. எது பொரிசு? எது சின்னது?

6. எது நேர்? எது வளைவு?

7. எது அழுத்தம்? எது வெளிச்?

SRI AVINASHILINGAM HOME SCIENCE COLLEGE FOR WOMEN
COIMBATORE-641011

Name:

Sex :

Date of Testing:

Date of Birth:

C.A.:

Father's Name:

Education:

Occupation:

Income:

Mother's Name:

Education:

Occupation:

Income:

Address:

Rural ☐ Urban ☐

No. of siblings:

Order of birth:

Type of Family: ☐ Joint; Nuclear ☐

at/450
7/75

TABLE - I

MENTAL ABILITY SCORES (IN FREQUENCY DISTRIBUTION) OF THE ENTIRE GROUP

Class Interval	Urban-Frequency	
	4 years	5 years
110 - 119	3	5
100 - 109	7	15
90 - 99	14	21
80 - 89	29	24
70 - 79	26	16
60 - 69	11	10
50 - 59	4	6
40 - 49	5	2
30 - 39	1	1
N	100	100

Class Interval	Rural-Frequency	
	4 years	5 years
80 - 89	3	2
70 - 79	5	3
60 - 69	14	14
50 - 59	24	40
40 - 49	25	26
30 - 39	24	12
20 - 29	5	3
N	100	100

TABLE - II

VERBAL ABILITY SCORES

Class Interval	Urban-frequency	
	4 years	5 years
5 - 10	1	4
10 - 15	11	9
15 - 20	51	38
20 - 25	29	35
25 - 30	8	14
N	100	100

Class Interval	Rural-frequency	
	4 years	5 years
0 - 5	11	5
5 - 10	30	46
10 - 15	44	40
15 - 20	14	8
20 - 25	1	1
N	100	100

TABLE - III

INFORMATION SCORES

Class Interval	Urban-frequency	
	4 years	5 years
0 - 5	27	19
5 - 10	62	73
10 - 15	11	8
N	100	100

Class Interval	Rural-frequency	
	4 years	5 years
0 - 5	78	62
5 - 10	22	38
N	100	100

TABLE - IV

COMPREHENSION SCORES

Class Interval	Urban-Frequency	
	4 years	5 years
0 - 5	32	25
5 - 10	56	61
10 - 15	12	14
N	100	100

Class Interval	Rural-frequency	
	4 years	5 years
0 - 5	83	79
5 - 10	17	21
N	100	100

TABLE - V

MEMORY SCORES

Class interval	Urban-frequency	
	4 years	5 years
0 - 5	5	2
5 - 10	24	26
10 - 15	52	30
15 - 20	19	34
20 - 25	-	8
N	100	100

Class interval	Rural-frequency	
	4 years	5 years
0 - 5	36	17
5 -10	38	57
10 -15	23	24
15 -20	3	2
N	100	100

TABLE - VI

SPATIAL RELATIONS SCORES

Class interval	Urban-frequency	
	4 years	5 years
0 - 5		1
5 - 10	6	6
10 - 15	25	10
15 - 20	30	38
20 - 25	34	33
25 - 30	5	12
N	100	100

Class interval	Rural-frequency	
	4 years	5 years
0 - 5	5	8
5 - 10	37	39
10 - 15	46	41
15 - 20	9	6
20 - 25	2	5
25 - 30	1	1
N	100	100

TABLE - VII

REASONING SCORES

Class interval	Urban-frequency	
	4 years	5 years
5 - 10	11	5
10 - 15	38	39
15 - 20	45	48
20 - 25	6	8
N	100	100

Class interval	Rural-frequency	
	4 years	5 years
0 - 5	3	4
5 - 10	32	32
10 - 15	60	58
15 - 20	5	6
N	100	100