A P P E N D I X

to

The Standardisation and Use of Peformance Tests of Intelligence under Indian Conditions, including Illiterates.

by

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Thesis presented in fulfilment of the requirements for the degree of Doctor of Philosophy, University of Edinburgh.

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LIST OF APPENDECES

AH I AH I

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MENTAL TESTING IN OUR VILLAGES.

RAM SURAT LAL, M.A., L.T.

General Considerations:

No progressive system of education can afford to neglect the child, his mental heritage and equipment. To make education purely psychological, educators have been carrying on extensive experiments on the mind and the behaviour of the child and have been moulding their pedagogy according to the results obtained by these experiments. But India and Indian teachers have as yet not shown much concern with these wide and sweeping changes that are being brought about in the sphere of education. Still then, if India has to take its rightful place among the living nations of the world, it would be detrimental to her interests to shut her eyes to these tremendous forces that are likely to affect to a great degree the Post-war world. How ever much we may resent, critics are justified in characterising our education as an art of cramming and superficiality.

Education in general and higher education in particular have so far been a monopoly of those belonging to the higher stratum of society and mostly confined to the cities. But, if we are on the brink of launching a scheme of perfect literacy in the country and simultaneously social and political reforms, we must take into account the millions of villages that constitute India and crores of people that inhabit there. We must be ready with our experiments and results to welcome the day when we shall initiate the stage of perfect literacy in the country. We must carry out the experiments in our villages, on the children living there and base our conclusions on these investigations.

Experiments in the village should be carried mostly by those who are dwellers of villages and are familiar with the life of villages. Centuries of illiteracy has destroyed the capacity of the villagers to take the things in the right perspective and a stranger in the villages will face considerable difficulty in getting proper type of subjects for his purpose. Some precautions are extremely necessary for those who aspire to get these experiments to successful conclusion.

The experimenter must approach the subject in a most kind and considerate manner. He must talk to him in a manner which will create his interest in the problem that he is going to face. As most of the villagers are busy at such times when the experimenter is free, the experimenter must find out the leisure time of the subjects, when they have taken sufficient rest and are free for a period of at least an hour. Any forceful disturbance of the routine of the subject irritates him much and the experimenter is not likely to get the proper results.

The finding of correct chronological age of the subject is not so difficult as in schools and colleges where there is a tendency to give a false age to the authorities. One can find out the age of the subject either before or after the experiment, by asking his father or mother, or any one who knows him perfectly. Village women are particularly accurate in remembering the date of birth of a baby. However if one finds out the age by direct question one is apt to be misunderstood by the villagers.

The experimenter must be particularly prepared to sit on cots or wooden planks or on floor (in case of boys of low castes) to carry on his experiments. Sitting on chair or table is peculiarly odd to the village man.

During the experiment itself some encouraging words should be spoken by the experimenter, for the villager is shy of nature,

and is often abashed to display his ability.

THE EXPERIMENT:

The present experiment was carried on in Bodari, a village in the district of Jaunpore, U.P., 25 miles away from the city during Dashehra holidays (Oct. 1943). The test, given was a performance of Test of Intelligence known as Kohs' Block Design Test. A full discussion of the test can be found in Collins and Drever "Performance Tests". All the seventeen designs of the Test were employed. The number of boys under experiment was 22, their age varying between 9 to 17 years.

Koh's blocks are especially suited to measure the intelligence of village boys, for their colours are attractive to their eyes and they find a sort of pleasure in manipulating them with their hands. Moreover they require the least amount of verbal instruction to the subject. The apparatus consists of 16 coloured inch cubes, their faces painted in the same way on all sides. There are seventeen designs painted in the same colours on cardboard oblongs and these are arranged in order of increasing complexity.

Continued on next page

The subject is required to put the cubes together in such a way that the design exposed to him may be reproduced within the specified time. Marks are awarded on success according to the scores suggested below:-

D. No.	No. of Blocks used	Time taken (Minutes)	Score of perfect success	Remarks
1	Four blocks	2	2	
2	" "	2	2	
3	" "	2	2	
4	" "	2	2	
5	" "	2	2	
6	" "	2	2	
7	" "	2	2	
8	" "	2	2	
9	" "	2	2	
10	Nine Blocks	3½-4	3	In designs 10-11 deduct, mark for every 20 seeds beyond 3½ mts. up to 4 mts.
11	" "	3½-4	3	
12	Sixteen Blocks	4-5	4	
13	" "	4-5	4	In designs 12-17 deduct 1 mark for every 20 seeds beyond 4 mts. up to 5 mts.
14	" "	4-5	4	
15	" "	4-5	4	
16	" "	4-5	4	
17	" "	4-5	4	

Total Score for Block Design Tests 48.

Note:- The experiment should be stopped if the subject fails to reproduce two successive designs.

The results obtained were classified in four groups according to the age units of the subjects.

RESULTS.

Serial No.	Name of the Subject	Chronological age	No. of trials	Score	General opinion held about the intelligence of the subject	Remarks
Group I.						
1.	Lakshmi Narain	9-2	6	12	Intelligent	
2.	Kameshwar	9-5	9	16	Dull	Deaf and nervous.
3.	Rajendra	10-0	9	16	Intelligent	
4.	Shiva Nath	10-5	4	26	Intelligent	
Group II.						
5.	Sumran Ram	11-3	8	14	Average	Low caste
6.	Dukhran	11-3	10	19	Intelligent	"
7.	Chhote	12-2	9	13	Average	"
8.	Anantu	12-5	12	23	V.Intelligent	"
GROUP III 9.	Ram Behari	14-2	11	22	Intelligent	
10.	Suraj Narain	14-4		19	Dull	
11.	Benaresi		10	20	Average	
Group IV.						
12.	Ram Prasad	15-1	11	21	Dull	
13.	Jai Narain	15-3	14	36	V.Intelligent	Renowned in the village to be intelligent boy.
14.	Dukhi l	15-5	13	32	Intelligent	Low caste
15.	Vishwanath	16-1	15	39	V.Intelligent	Very much interested in manipulating mechanical things.
16.	Lalta	16-5	14	33	Average	
17.	Surya Nath	14-4	16	38	V.Intelligent	
18.	Mangala Prasad	16-6	16	40	Intelligent	
19.	Paras Tewari	17-2	6	10	Dull	Known as mischief-monger.
20.	Surat Tewari	17-3	14	30	Dull	Known as a dull boy
21.	Lurkhur	17-3	7	10	V.Dull	Dull and sluggish.
22.	Atwaru	17-2	11	22	Intelligent	
23.	Brij Raj	17-4	16	34	Average	

Aff I

Class Intervals and distribution for the four groups.

Groups	Scores	Frequency.
I		
	10-	1.
	15-	2.
	20-	X
	21-	1.
II		
	15-	2.
	20-	2.
III		
	10-	3.
IV		
	10-	2.
	15-	X
	20-	2.
	25-	X
	30-	5.
	35-	3.

Conclusions:-

The number taken for the experiment for various groups is not quite sufficient so as to enable us to arrive at general results. But it gives us a fairly satisfactory idea of the intelligence of the boys in the villages. In most cases scores obtained by the boys tally with the general opinion held about the intelligence of the subjects, the deviations in the nature of exceptions can be easily explained and give weight to the results obtained by the Test. Obviously, the results of this elementary experiment indicate the necessity of such experiments and investigations on a much more extensive scale.

GROUP IV: Co-efficient of Correlation between scores obtained in the test and the General opinion held in the village.

Serial No.	Name	Rank r_1 in scores	Rank r_2, in opinion	$r_1 - r_2$	$(r_1 - r_2)^2$
12	Ram Prasad	10	9.5	1.5	2.25
13	Jai Narain	4	2	2	4
14	Dukhi	7	5	2	4
15	Vishwanath	2	2	0	0
16	Lalta	6	7.5	1.5	2.25
17	Surya Nath	3	2	1	1
18	Mangla Prasad	1	5	4	1
19	Paras Tewari	11.5	11.5	0	0
20	Surat Tewari	8	9.5	1.5	2.25
21	Lurkhur	11.5	11.5	0	0
22	Atwaru	9	5	4	16
23	Brajraj	5	7.5	2.5	6.25
					54

Co-efficient of Correlation = +.8

App II — i

LITERATE GROUP

Distribution of Raw Scores - Kohs' Test

Class-intervals	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	Totals	Class-intervals
22-23					2		2	22-23
20-21					1	1	2	20-21
18-19			1		0	3	4	18-19
16-17			1	8	3	9	21	16-17
14-15	1	1	3	8	14	11	38	14-15
12-13	1	6	13	8	14	14	56	12-13
10-11	4	8	20	24	30	26	112	10-11
8-9	10	17	29	27	7	19	109	8-9
6-7	28	27	28	19	9	14	125	6-7
4-5	24	32	31	24	4	8	123	4-5
2-3	17	11	8	4	5	4	49	2-3
0-1	1						1	0-1
	86	102	134	122	89	109	642	
	M = 5·66	M = 6·52	M = 7·75	M = 8·78	M = 10·75	M = 10·38	M = 8·33	
							σ_M = ·15	
	S.D.= 2·52	S.D.= 2·76	S.D.= 3·22	S.D.= 3·64	S.D.= 3·98	S.D.= 3·94	S.D.= 3·82	
							σ_σ = ·11	

App II

ii

LITERATE GROUP

Distribution of Raw Scores - Passalong Test

Class-intervals	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	Totals	Class-intervals
20-								20-
18-19			1	2	1	1	5	18-19
16-17		3	2	3	5	7	20	16-17
14-15		5	7	13	9	18	52	14-15
12-13	7	11	9	20	16	16	79	12-13
10-11	13	21	36	30	19	25	144	10-11
8-9	15	21	34	20	23	13	126	8-9
6-7	28	22	26	16	14	20	126	6-7
4-5	20	15	17	17	2	8	79	4-5
2-3	3	4	2	1		1	11	2-3
0-1								0-1
	86	102	134	122	89	109	642	
	M = 7·34	M = 8·62	M = 8·82	M = 9·77	M = 10·41	M = 10·43	M = 9·27	
							σ_M = ·13	
	S.D.= 2·62	S.D.= 3·28	S.D.= 3·00	S.D.= 3·48	S.D.= 3·14	S.D.= 3·58	S.D.= 3·36	
							σ_σ = ·09	

App II

LITERATE GROUP

Distribution of Raw Scores - Patterns Test.

Class-intervals	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	Totals	Class-intervals
18-19				1	1		2	18-19
16-17			1	2	4	5	12	16-17
14-15		2	5	8	8	13	36	14-15
12-13	1	5	14	17	16	15	68	12-13
10-11	12	18	33	26	28	32	149	10-11
8-9	24	40	38	32	20	22	176	8-9
6-7	27	20	21	20	11	15	114	6-7
4-5	20	17	21	16	1	5	80	4-5
2-3	2		1			2	5	2-3
0-1								0-1
	86	102	134	122	89	109	642	
	M = 7·13 S.D.= 2·16	M = 8·11 S.D.= 2·34	M = 8·71 S.D.= 2·80	M = 9·23 S.D.= 3·08	M = 10·57 S.D.= 2·78	M = 10·16 S.D.= 3·14	M = 9·00 σ_M = ·12 S.D.= 2·98 σ_σ = ·08	

LITERATE GROUP

Distribution of Raw Scores - Memory Test.

Class-intervals	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	Totals	Class-intervals
16-17		1				2	3	16-17
14-15	2	1	8	11	9	16	47	14-15
12-13	8	10	26	31	32	33	140	12-13
10-11	47	54	71	55	34	42	303	10-11
8-9	24	30	27	23	14	16	134	8-9
6-7	5	6	2	2			15	6-7
4-5								4-5
2-3								2-3
0-1								0-1
	86	102	134	122	89	109	642	
	M =10·00	M = 9·97	M = 10·66	M = 10·93	M = 11·31	M = 11·50	M = 10·77	
							σ_M = ·07	
	S.D.= 1·60	S.D.= 1·66	S.D.= 1·66	S.D.= 1·82	M = 1·74	S.D.= 1·94	S.D.= 1·84	
							$\sigma\sigma$ = ·05	

AH II

V

LITERATE GROUP

Distribution of Raw Scores - Pictures Test

Scores \ Ages	11yrs.	12yrs.	13yrs.	14yrs.	15yrs.	16yrs.	Total	Class-intervals
14-15		1	2	4	7	9	23	14-15
12-13	3	10	13	20	23	23	92	12-13
10-11	19	23	45	33	32	41	193	10-11
8-9	18	28	43	33	21	23	166	8-9
6-7	25	23	12	15	2	11	88	6-7
4-5	16	14	18	13	4	2	67	4-5
2-3	5	3	1	4			13	2-3
0-1								0-1
	86	102	134	122	89	109	642	
	M = 7·41	M = 8·22	M = 8·89	M = 9·03	M = 10·50	M = 10·32	M = 9·08	
							σ_M = ·11	
	S.D.= 2·54	S.D.= 2·62	S.D.= 2·46	S.D.= 2·82	S.D.= 2·28	S.D.= 2·30	S.D.= 2·72	
							σ_σ = ·08	

ILLITERATE GROUP

Distribution of Raw Scores - Kohs' Test

Scores \ Ages	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	Totals
16-							
14-15		1					1
12-13		0			1		1
10-11		0		1	2		3
8-9	2	3	3	5	7	11	31
6-7	5	7	20	14	19	22	87
4-5	15	31	38	32	30	11	157
2-3	32	44	43	37	18	10	184
0-1	24	12	8	1	1	2	48
	78	98	112	90	78	56	512
	M = 2·68	M = 3·48	M = 3·91	M = 4·23	M = 5.09	M = 5·57	M = 4.09 σ_M = .10 S.D = 2·22 σ_{σ} = ·07

ILLITERATE GROUP

Distribution of Raw Scores - Passalong Test

Scores \ Ages	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15yrs	16 yrs.	Totals
16-							
14-15	3		2		1		6
12-13	2	5	0	3	6	7	23
10-11	6	6	5	11	10	17	55
8-9	7	7	12	15	10	22	73
6-7	12	28	43	25	25	8	141
4-5	34	37	37	20	15	2	145
2-3	12	12	13	11	10		58
0-1	2	3		5	1		11
	78	98	112	90	78	56	512
	M = 5·81	M = 5·77	M = 5·91	M = 6·26	M = 6·89	M = 9·38	M = 6·43 σ_M = ·13 S.D.= 2·89 σ = ·09

App II

ILLITERATE GROUP

Distribution of Raw Scores - Pattern Drawing Test

Scores \ Ages	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16yrs.	Totals
16-							1
14-15		1					2
12-13		1				1	12
10-11		3	1	1	2	5	51
8-9	3	5	11	10	11	11	147
6-7	26	25	28	24	22	22	191
4-5	27	32	52	38	26	16	93
2-3	17	25	19	16	15	1	15
0-1	5	6	1	1	2		
	78	98	112	90	78	56	512
	M = 4·63	M = 4·83	M = 5·07	M = 5·14	M = 5·29	M = 6·71	M = 5·18 σ_M = ·10 S.D.= 2·18 σ_{σ} = ·07

App II

ILLITERATE GROUP

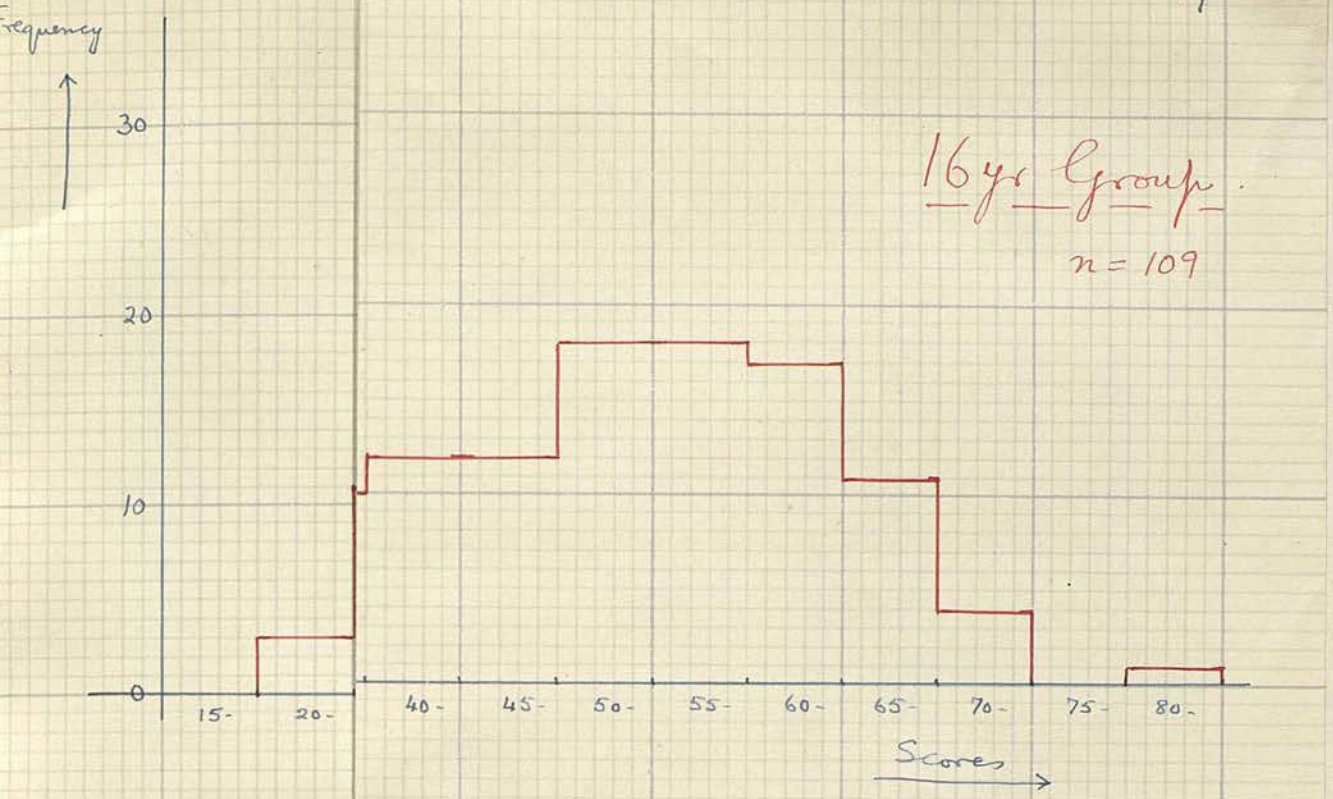
Distribution of Raw Scores - Memory Test

Ages / Scores	11 yrs	12 yrs.	13 yrs.	14 yrs	15 yrs.	16 yrs.	Totals
14-15						1	1
12-13		1			1	0	2
10-11	2	5	9	6	8	9	39
8-9	20	28	45	33	29	21	176
6-7	29	32	31	32	25	18	167
4-5	20	27	24	13	15	6	105
2-3	7	5	3	6		1	22
0-1							
	78	98	112	90	78	56	512
	M = 6·24	M = 6·58	M = 7·09	M = 6·94	M = 7·35	M = 7·75	M = 6·95 σ_M = ·09 S.D.= 2·04 σ = ·06

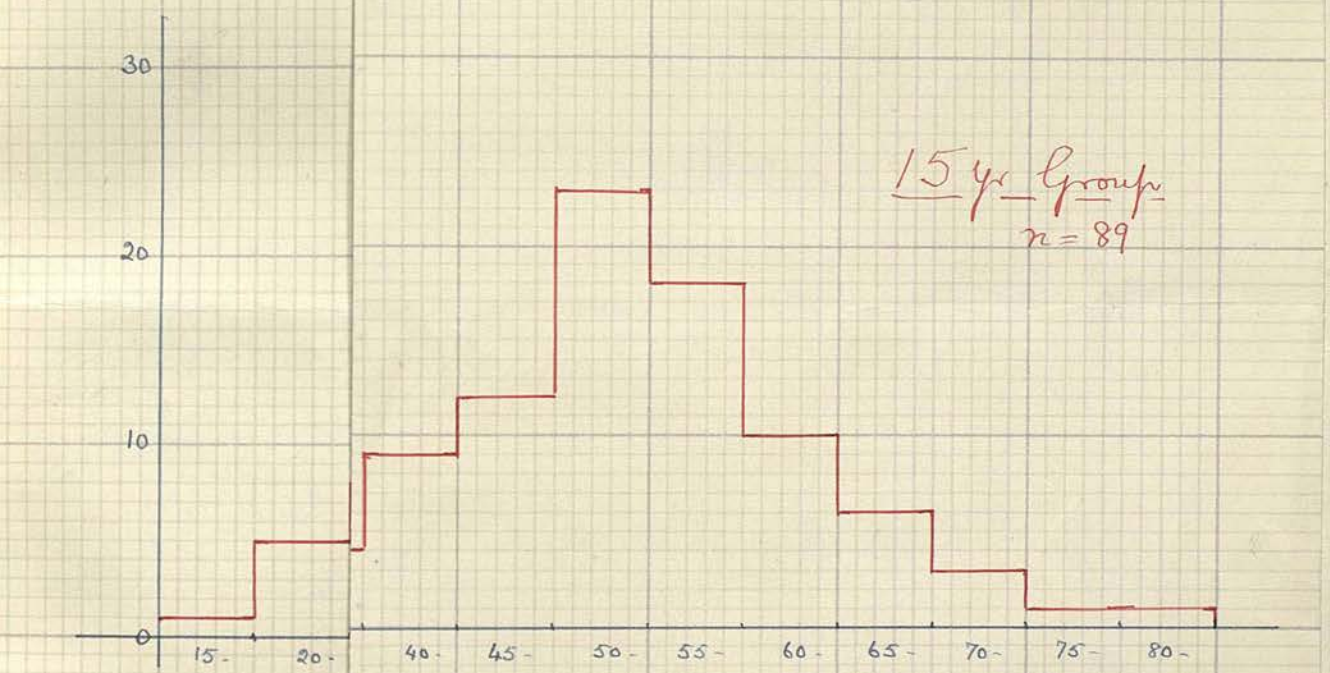
ILLITERATE GROUP

Distribution of Raw Scores - Pictures Test

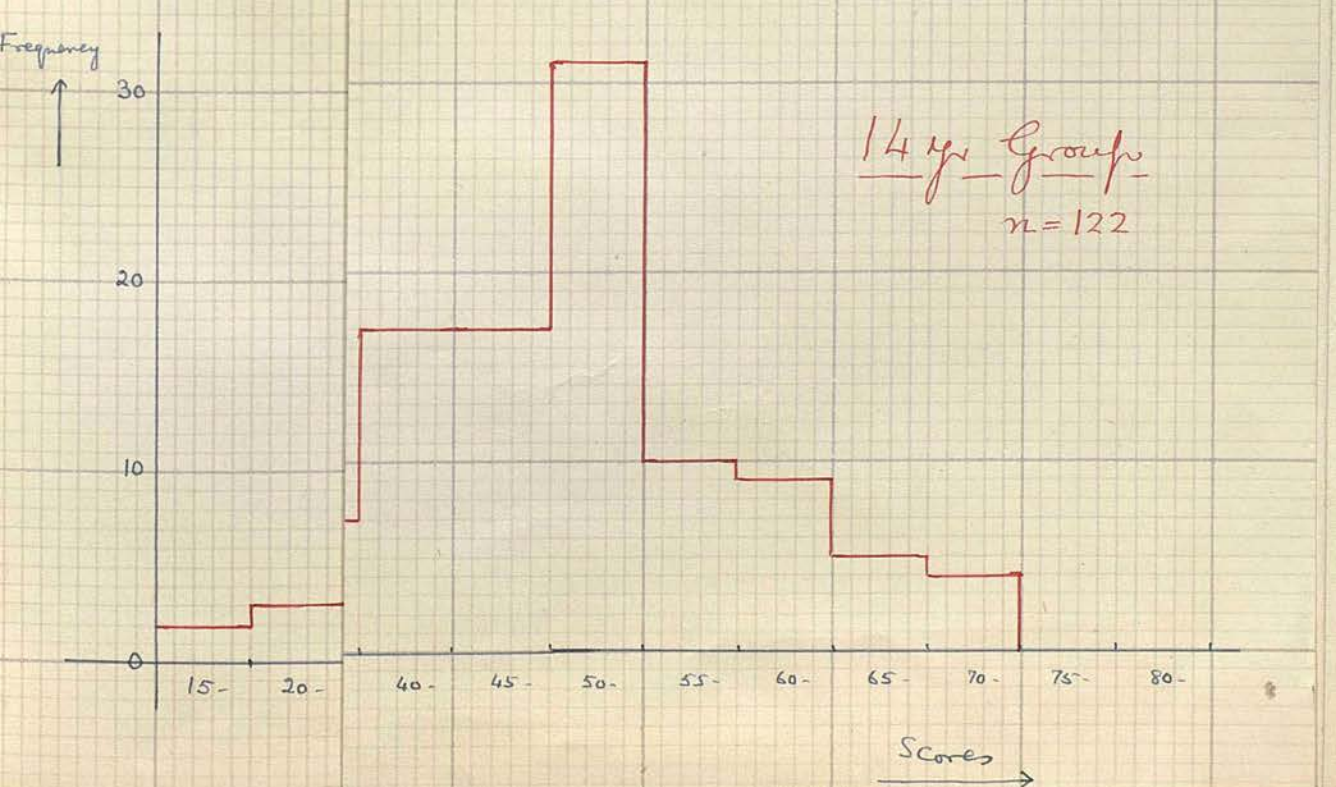
Scores \ Ages	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	Totals
14-15				1	2	1	4
12-13		1	2	3	2	0	8
10-11	2	3	2	7	11	11	36
8-9	7	17	22	13	19	12	90
6-7	29	34	57	34	35	30	219
4-5	39	42	29	32	9	2	153
2-3	1	1					2
0-1	78	98	112	90	78	56	512
	M = 3·73	M=4·13	M = 4·55	M = 4·68	M=5·68	M = 5·79	M = 4·67 σ_M = ·09 S.D.= 2·02 σ = ·06



16 yr Group.
n = 109



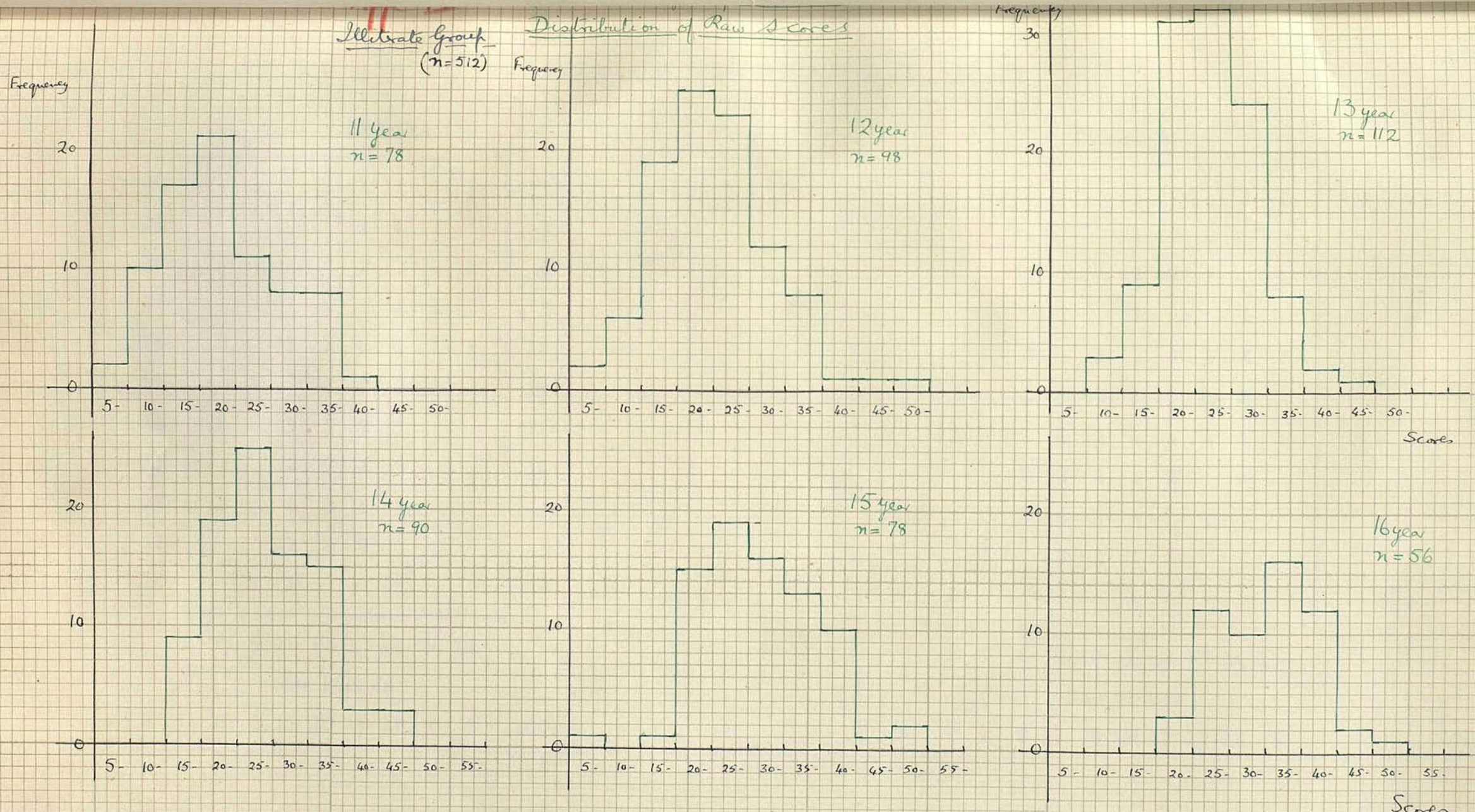
15 yr Group
n = 89



14 yr Group
n = 122

Illiterate Group (n=512)

Distribution of Raw Scores



AH V

CORRELATION BETWEEN BINET MENTAL AGE AND

Memory

	8-	9-	10-	11-	12-	13-	14-	15-	
20-		1			1	1			3
19-					1	1	1		3
18-					2	3	2	1	8
17-			1			1	1		3
16-			1	1	6	1	1	2	12
15-		1		2	2	2	4	2	13
14-	1		5	5	7	3			21
13-			2	7	2	3			14
12-	1		4	3	5	3			16
11-			1	2	2				5
10-		1	1						2
	8-	9-	10-	11-	12-	13-	14-	15-	
				Raw Scores					
N	2	3	15	20	28	18	9	5	100

Pictures

	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-
						1			1	1
						1	2			
						2	2	3		1
				1		1			1	
			2		1	1	3	1	2	2
			1	3	2	1	3	1	2	
	1		1	1	1	4	4	4	4	1
			2	2	2	4	2		2	
		3	2	4	1	3	1	2		
		1		2	1	1				
	1					1				
	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-
					Raw Scores					
N	2	4	8	13	8	20	17	11	12	5

CORRELATION BETWEEN BINET MENTAL AGE AND

Kohs

	0-	2-	4-	6-	8-	10-	12-	14-	16-	
20-						1			2	3
19-							1	1	1	3
18-					1		4	2	1	8
17-					1		1		1	3
16-				2	2	4	2	1	1	12
15-				1	3	6	1	2		13
14-		1	2	5	3	1	2	6	1	21
13-		2		3	4	1	3	1		14
12-		1	4	5	3	2	1			16
11-	1		2	1					1	5
10-		2								
	0-	2-	4-	6-	8-	10-	12-	14-	16-	
				Raw Scores						
N	1	6	8	17	17	15	15	13	8	100

Passalong

	2-	4-	6-	8-	10-	12-	14-	16-
		1	1	1		1		
			2			1		
			1	1	2	2	2	
		1				2		
		2	2	6		2		
		3	2	3	1	3	1	
		4	7	5	2	3		
	1	2	8	1	1	1		
	1	4	6	3	2			
	2		1	2				
	1	1						
	2-	4-	6-	8-	10-	12-	14-	16-
				Raw Scores				
N		5	18	29	22	8	15	3

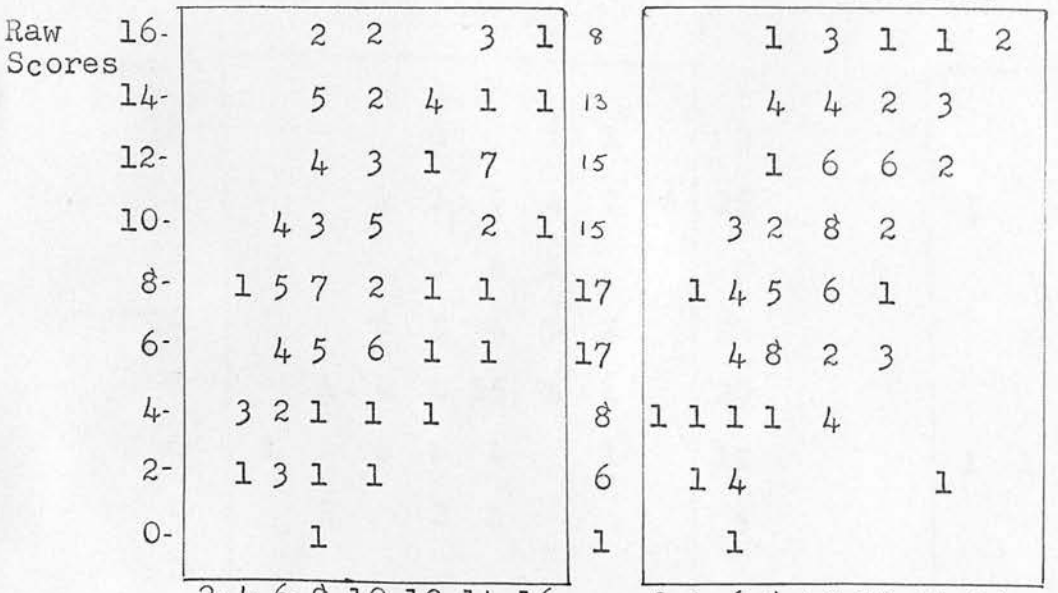
Patterns

	2-	4-	6-	8-	10-	12-	14-	16-
				1		1	1	
				1	1	1		
		1		2	2	1	2	
				1		1		1
			1	4	4	3		
			2	1	7	2	1	
			4	4	7	4	2	
			3	4	5	2		
	1		5	4	5	1		
		1	1	2	1			
		1	1					
	2-	4-	6-	8-	10-	12-	14-	16-
				Raw Scores				
N	1	3	17	22	33	15	7	2

LITERATES (INTENSIVELY TESTED GROUP)

CORRELATIONS BETWEEN KOHS AND

Passalong

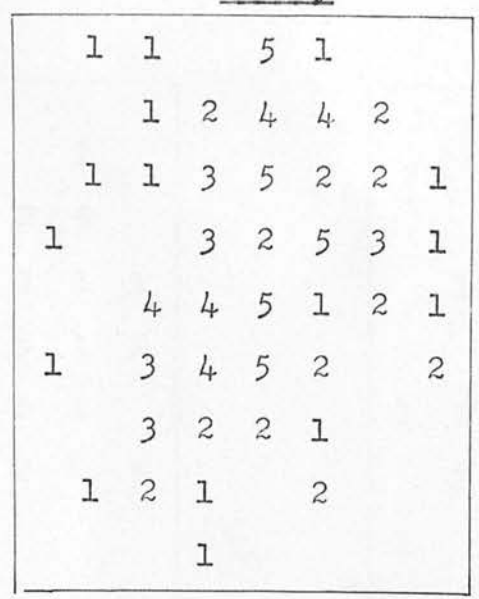


N 5 18 29 22 8 15 3 100

Patterns

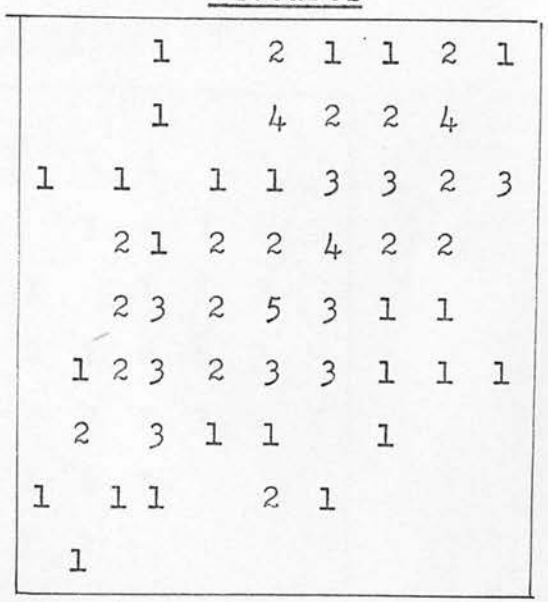
N 1 3 17 22 33 15 7 2 100

Memory



N 2 3 15 20 28 18 9 5 100

Pictures



N 2 4 8 13 8 20 17 11 12 5 100

LITERATES (INTENSIVELY TESTED GROUP)

CORRELATIONS BETWEEN PASSALONG And

Patterns

Raw Scores	2-	4-	6-	8-	10-	12-	14-	16-	
16-				1		1	1		3
14-			1	1	5	4	2	2	15
12-				3	4	1			8
10-			6	5	4	5	2		22
8-		1	4	4	15	4	1		29
6-	1		6	6	4		1		18
4-		2		2	1				5
2-									
N	1	3	17	22	33	15	7	2	100

Raw Scores

Memory

	8-	9-	10-	11-	12-	13-	14-	15-
11		1	2	4	2	5		
		1	2		3	1	1	
	2	3	3	7	5	1	1	
		2	8	12	6	1		
1	1	5	2	4	2		3	
		3	2					
N	2	3	15	20	28	18	9	5

Raw Scores

100

Pictures

	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-
						1	1		1	
						3	4	1	4	3
		1		2	1		1	1	2	
			2	2	2	1	6	6	3	
	1	2	4	3	3	7	2	3	2	2
		1	2	5	1	6	3			
	1			1	1	2				
N	2	4	8	13	8	20	17	11	12	5

Raw Scores

100

LITERATES (INTENSIVELY TESTED GROUP)

CORRELATIONS BETWEEN PATTERNS AND

Memory

Raw Scores	8-	9-	10-	11-	12-	13-	14-	15-	
16-					1	1			2
14-		2			2	2	1		7
12-			4	3	5	1	2		15
10-			3	5	12	7	5	1	33
8-	1		3	8	4	3		3	22
6-	1	1	2	4	4	4		1	17
4-			2				1		3
2-			1						1
Raw Scores	2	3	15	20	28	18	9	5	100

Pictures

Raw Scores	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-	
15-						1				1	2
14-					1	1	2	1	2		7
13-			1	1		2	5	1	3	2	15
12-	1	1	4	5	4	4	3	5	5	1	33
11-		1		2	3	8	4	1	2	1	22
10-		1	3	4		3	3	3			17
9-	1			1		1					3
8-		1									1
N	2	4	8	13	8	20	17	11	12	5	100

CORRELATION BETWEEN

Memory and Pictures

Raw Scores	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-	
15-				1	1		2	1			5
14-				1		2	4		2		9
13-			1	4		3	2	4	2	2	18
12-		1	5	3	2	4	4	3	3	3	28
11-	1	2	1	2	2	4	3	2	3		20
10-	1	1	1	2	2	4	2	1	1		15
9-					1	1			1		3
8-						2					2
N	2	4	8	13	8	20	17	11	12	5	100

CORRELATION BETWEEN CHRONOLOGICAL AGE AND

Binet M.A.

Chronological Age	10	11	12	13	14	15	16	17	18	19	20	
17.6-				1	2	1	1	1	1	1		8
17.0-					1	1	2		1		1	6
16.6-		1		1	3	2			2			9
16.0-			1		1	3	1	1				7
15.6-				1	2	3	1		1			8
15.0-	1			2	3	1	1					8
14.6-			2	2	4		2		1		1	12
14.0-			1	1			1		1	2	1	7
13.6-		1	2		2		1	1	1			8
13.0-			4	1	2		2					9
12.6-		1	1	1		1						4
12.0-			1			1						2
11.6-			1	2								3
11.0-		1	2	1								4
10.6-	1	1	1	1	1							5
	10	11	12	13	14	15	16	17	18	19	20	

Raw Scores

N 2 5 16 14 21 13 12 3 8 3 3 = 100

Kohs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
			1		1				2	1			1		2			8
								1					1	1	1		2	6
						1	1	1	1		1	1	1			1	1	9
										3	1	1				2		7
							1			1	4		1		1			8
		1		1		2		2				1			1			8
						1			1	2	1	2	3	1	1			12
						1	1	1						1	1	2		7
		1		1		1			2		1	2						8
		1			1	1		2	2				1		1			9
				1		1			1					1				4
						2												2
					1	1		1										3
				1	1		2											4
1	1	2	3			1								1				5

Raw Scores

N 1 5 1 4 4 12 5 8 9 7 8 7 8 5 8 5 3

Passalong

CORRELATION BETWEEN CHRONOLOGICAL AGE AND

Passalong

Chronological Age.	4-	5-	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-	16-	
17.6-			1	2	1	1	1					1	1	8
17.0-							1	1		2	2			6
16.6-			1	2			2				3		1	9
16.0-						1	3	1			1		1	7
15.6-				1	2			1		1	3			8
15.0-				2	2	1		2	1					8
14.6-			3	1		2		3			2	1		12
14.0-		1			3			1		1	1			7
13.6-		1		1	4			1			1			8
13.0-			1		3	2		2	1					9
12.6-	1			1	2									4
12.0-			1						1					2
11.6-					3									3
11.0-	1					1	1		1					4
10.6-	1			1		1		2						5
														100
N	3	2	7	11	20	9	8	14	4	4	13	2	3	

Raw Scores

Patterns

	2-	3-	4-	5-	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-	16-	
					1		1		1	3	1			1		8
								2	2	1			1			6
					2	1	1	1	2		1		1			9
						2			1	1	1			1	1	7
								1	1	3	2	1				8
					2	1	1		1	2	1					8
						1	2	1	1	3	1	2		1		12
					1		2				2		1		1	7
				2	1				2	1		1		1		8
		1			1		1	3	1	1		1				9
							2		2							4
							1	1								2
								1		2						3
						1		1	2							4
			1		1	2						1				5
																100
N		1	1	2	9	8	11	11	16	17	9	6	3	4	2	

CORRELATION BETWEEN CHRONOLOGICAL AGE AND

Memory

Chronological Age	8-	9-	10-	11-	12-	13-	14-	15-
17.6-			2	1	3		2	
17.0-		1	1	1		1	1	1
16.6-	1		1	2	4	1		
16.0-		1		1	2	3		
15.6-				1	2	2	3	
15.0-		1	1	1	1	3		1
14.6-	1		1	1	6	2		1
14.0-				1	4	2		
13.6-			1	1	2	1	3	
13.0-			4	3		1		1
12.6-			1	2	1			
12.0-				1				1
11.6-				1	2			
11.0-			1		1	2		
10.6-			2	3				
N	2	3	15	20	28	18	9	5

100

Pictures

	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-
				2	1	3	2			
						1		2	3	
			1	2		3		2	1	
			1	1	1	1	1	1	1	
			1	1			3	1	1	1
						1	2	1	2	2
			1		1	3	4	1	1	1
			1			2	2	1		1
	1		2	1		1	1		2	
		1		1	1	3	2	1		
				1		2			1	
		1		1						
		1			2					
				2	2					
	1	1	1	1				1		
N	2	4	8	13	8	20	17	11	12	5

100

WORKING OF THE FACTOR ANALYSIS BY THURSTONE'S CENTROID METHOD

FIRST ITERATION

Tests	1	2	3	4	5	6	Check
1	(.46852)	.46852	.31844	.41614	.39268	.32566	2.38996
2	.46852	(.49870)	.40461	.49870	.16025	.35580	2.38658
3	.31844	.40461	(.40461)	.38600	.21272	.36822	2.09460
4	.41614	.49870	.38600	(.49870)	.09559	.31273	2.20786
5	.39268	.16025	.21272	.09559	(.39268)	.14069	1.39461
6	.32566	.35580	.36822	.31273	.14069	(.36822)	1.87132
Totals without communalities	1.92144	1.88788	1.68999	1.70916	1.00193	1.50310	9.71350
Totals with guessed communalities	2.38996	2.38658	2.09460	2.20786	1.39461	1.87132	12.34493 = $(3.51353)^2$
Loadings 1	.68022	.67925	.59615	.62839	.39693	.53260	= 3.51354
.68022	(.00582)	.00648	-.08707	-.01130	.12268	-.03663	First Residual Matrix
.67925	.00648	(.03732)	-.00032	.07187	-.10936	-.00597	
.59615	-.08707	-.00032	(.04922)	.01139	-.02391	.05071	
.62839	-.01130	.07187	.01139	(.10383)	-.15384	-.02195	
.39693	.12268	-.10936	-.02391	-.15384	(.23512)	-.07071	
.53260	-.03663	-.00597	.05071	-.02195	-.07071	(.08456)	

WORKING OF THE FACTOR ANALYSIS BY THURSTONE'S CENTROID METHOD

FIRST ITERATION (Continued)

Test	- 1	2	3	4	- 5	6	Check	
-1	(.12268)	-.00648	+.08707	+.01130	+.12268	+.03663	.37388	Largest r of each column (regardless) of sign) inserted in each diagonal cell, and signs of Tests 1 & 5 changed.
2	-.00648	(.10936)	-.00032	.07187	+.10936	-.00597	.27782	
3	+.08707	-.00032	(.08707)	.01139	+.02391	.05071	.25983	
4	+.01130	.07187	.01139	(.15384)	+.15384	-.02195	.38029	
-5	+.12268	+.10936	+.02391	+.15384	(.15384)	+.07071	.63434	
6	+.03663	-.00597	.05071	-.02195	+.07071	(.07071)	.20084	
Algebraic Totals	.37388	.27782	.25983	.38029	.63434	.20084	2.12700 = $(1.458423)^2$ = $(1/.685673)^2$ = 1.45842 (with temporary signs)	
Loadings 11	.25636	.19049	.17816	.26075	.43495	.13771		

WORKING OF THE FACTOR ANALYSIS BY THURSTONE'S CENTROID METHOD. 4TH ITERATION.

Tests	1	2	3	4	5	6	Check	
1	(.62069)	.46852	.31844	.41614	.39268	.32566	2.54213	Communality obtained from 3rd Iteration inserted in each diagonal Cell.
2	.46852	(.50047)	.40461	.49870	.16025	.35580	2.38835	
3	.31844	.40461	(.38804)	.38600	.21272	.36822	2.07803	
4	.41614	.49870	.38600	(.41959)	.09559	.31273	2.12875	
5	.39268	.16025	.21272	.09559	(.26069)	.14069	1.26262	
6	.32566	.35580	.36822	.31273	.14069	(.27719)	1.78029	
TOTALS	2.54213	2.38835	2.07803	2.12875	1.26262	1.78029	12.18017	$= (3.49001)^2 = (1/.2865321)^2$
1st Factor Loading	.72840	.68434	.59542	.60996	.36178	.51011		$= 3.49001$
.72840	.09012	-.02995	-.11526	-.02815	.12916	-.04590	First Residual Matrix	
.68434	-.02995	.03215	-.00286	.08128	-.08733	.00671		
.59542	-.11526	-.00286	.03352	.02282	-.00269	.06449		
.60996	-.02815	.08128	.02282	.04754	-.12508	.00158		
.36178	.12916	-.08733	-.00269	-.12508	.12981	-.04386		
.51011	-.04590	.00671	.06449	.00158	-.04386	.01698		

	-				-			
- 1	.09012	+.02995	+.11526	+.02815	+.12916	+.04590	.43854	First Residual Matrix with signs of Tests 1 and 5 changed.
2	+.02995	.03215	-.00286	.08128	+.08733	.00671	.23456	
3	+.11526	-.00286	.03352	.02282	+.00269	.06449	.23592	
4	+.02815	.08128	.02282	.04754	+.12508	.00158	.30645	
-5	+.12916	+.08733	+.00269	+.12508	.12981	+.04386	.51793	
6	+.04590	.00671	.06449	.00158	+.04386	.01698	.17952	
Algebraic Totals	.43854	.23456	.23592	.30645	.51793	.17952	1.91292 = $(1.38308)^2$ = $(1/.7230239)^2$	
2nd Factor Loadings	.31707	.16959	.17058	.22157	.37448	.12980	(with temporary signs) 1.38309	
.31707	-.01041	-.03482	+.06117	-.04210	.01042	.00474	Second Residual Matrix	
.16959	-.02382	.00339	-.03179	.04370	.02382	-.01530		
.17058	.06117	-.03179	.00442	-.01498	-.06119	.04235		
.22157	-.04210	.04370	-.01498	-.00155	.04211	-.02718		
.37448	.01042	.02382	-.06119	.04211	.01043	-.00475		
.12980	.00474	-.01530	.04235	-.02718	-.00475	.00013		

1	(.06117)	+.02382	+.06117	+.04210	-.01042	.00474	.18258	Second Residual Matrix with largest r of each column (regardless of sign) inserted in each diagonal cell, and signs of Tests 2, 4 and 5 changed.
2 -	+.02382	(.04370)	+.03179	+.04370	+.02382	+.01530	.18213	
3	.06117	+.03179	(.06119)	+.01498	+.06119	.04235	.27267	
4 -	+.04210	+.04370	+.01498	(.04370)	+.04211	+.02718	.21377	
5 -	-.01042	+.02382	+.06119	+.04211	(.06119)	+.00475	.18264	
6	.00474	+.01530	.04235	-.02718	-.00475	(.04235)	.13667	
Algebraic Totals without Communalities.	.12141	.13843	.21148	.17007	.12145	.09432		
Algebraic Totals with Communalities	.18258	.18213	.27267	.21377	.18264	.13667	1.17046 = $(1.08188)^2$ = $(1/.924317)^2$	
3rd Factor Loading	.16876	.16835	.25203	.19759	.16882	.12633	(with temporary signs) 1.08188	

LITERATE GROUP (n-642)

Percentiles, I.Q's and Raw Scores for Different Ages

Percentiles → / Ages in years ↓ / I.Q's →	5%		16%			50%			84%		95%		
	70	75	80	85	90	95	100	105	110	115	120	125	130
16 years	32.0	35.5	39.0	42.5	46.8	51.1	55.5	58.7	61.9	65.0	69.2	73.5	77.8
15 years	30.2	33.6	37.0	40.4	44.7	49.0	53.3	56.5	59.7	62.8	66.8	70.9	75.0
14 years	27.3	30.6	33.9	37.1	41.2	45.3	49.3	52.4	55.5	58.7	62.4	66.0	69.6
13 years	24.2	27.5	30.8	33.9	37.7	41.5	45.4	48.5	51.6	54.6	57.9	61.2	64.5
12 years	21.2	24.4	27.6	30.7	34.3	37.9	41.4	44.4	47.4	50.4	53.4	56.3	59.2
11 years	18.4	21.4	24.4	27.4	30.8	34.2	37.5	40.4	43.3	46.3	48.8	51.4	54.0

LITERATE GROUP

Table of Norms (n = 642)

Age ↓ I.Qs →	70	71	72	73	74	75	76	77	78	79	80	81	82	83	I.Qs Age
11·0	18·4	19·0	19·6	20·2	20·8	21·4	22·0	22·6	23·2	23·8	24·4	25·0	25·6	26·2	11·0
11·6	19·8	20·4	20·0	21·6	22·2	22·9	23·5	24·1	24·7	25·3	26·0	26·6	27·2	27·8	11·6
12·0	21·2	21·8	22·4	23·0	23·7	24·4	25·0	25·6	26·2	26·9	27·6	28·2	28·8	29·4	12·0
12·6	22·7	23·3	24·0	24·6	25·3	25·9	26·6	27·2	27·9	28·5	29·2	29·8	30·4	31·0	12·6
13·0	24·2	24·9	25·6	26·3	26·9	27·5	28·2	28·9	29·6	30·2	30·8	31·4	32·0	32·6	13·0
13·6	25·7	26·4	27·1	27·8	28·4	29·0	29·7	30·4	31·1	31·7	32·3	32·9	33·5	34·1	13·6
14·0	27·3	28·0	28·7	29·4	30·0	30·6	31·3	32·0	32·7	33·3	33·9	34·5	35·1	35·7	14·0
14·6	28·8	29·5	30·2	30·9	31·5	32·1	32·8	33·5	34·2	34·8	35·4	36·1	36·7	37·4	14·6
15·0	30·2	30·9	31·6	32·3	32·9	33·6	34·3	35·0	35·7	36·4	37·0	37·7	38·4	39·1	15·0
15·6	31·1	31·8	32·5	33·2	33·8	34·5	35·2	35·9	36·6	37·3	38·0	38·7	39·4	40·1	15·6
16·0	32·0	32·7	33·4	34·1	34·8	35·5	36·2	36·9	37·6	38·3	39·0	39·7	40·4	41·1	16·0

LITERATE GROUP

Table of Norms (n = 642) (Contd)

Age ↓ / I.Qs →	84	85	86	87	88	89	90	91	92	93	94	95	96	97	I.Qs / Age
11·0	26·8	27·4	28·1	28·8	29·5	30·1	30·8	31·5	32·2	32·9	33·6	34·2	34·9	35·6	11·0
11·6	28·4	29·0	29·7	30·4	31·1	31·8	32·5	33·2	34·9	34·6	35·3	36·0	36·7	37·4	11·6
12·0	30·0	30·7	31·4	32·1	32·8	33·5	34·3	35·0	35·7	36·4	37·1	37·9	38·6	39·3	12·0
12·6	31·6	32·3	33·0	33·7	34·5	35·2	36·0	36·7	37·5	38·2	38·9	39·7	40·4	41·2	12·6
13·0	33·2	33·9	34·6	35·3	36·1	36·9	37·7	38·5	39·3	40.1	40.8	41.5	42.3	43.1	13.0
13·6	34·8	35·5	36·2	37·0	37·8	38·6	39·4	40.2	41.0	41.8	42.6	43.4	44.2	45.0	13.6
14·0	36·4	37·1	37·9	38·7	39·5	40.3	41.2	42.0	42.8	43.6	44.4	45.3	46.1	46.9	14.0
14·6	38·1	38·7	39·5	40·3	41·2	42·0	42·9	43·8	44·6	45·5	46·3	47·1	48·0	48·8	14·6
15·0	39·8	40·4	41·2	42·0	42·9	43·8	44·7	45·6	46·5	47·4	48·2	49·0	49·9	50·8	15·0
15·6	40·8	41·4	42·3	43·1	43·0	44·9	45·7	46·6	47·5	48·4	49·2	50·0	50·9	51·8	15·6
16·0	41·8	42·5	43·4	44·3	45·2	46·0	46·8	47·7	48·6	49·5	50·3	51·1	52·0	52·9	16·0

LITERATE GROUP

Table of Norms (n = 642) (Contd)

Age ↓ / I. Qs →	98	99	100	101	102	103	104	105	106	107	108	109	110	111	I.Qs Age
11·0	36·3	37·0	37·5	38·1	38·7	39·3	39·9	40·4	41·0	41·6	42·2	42·8	43·3	43·9	11·0
11·6	38·1	38·8	39·4	40·0	40·6	41·2	41·8	42·4	43·0	43·6	44·2	44·8	45·3	45·9	11·6
12·0	40·0	40·7	41·4	42·0	42·6	43·2	43·8	44·4	45·0	45·6	46·2	46·8	47·4	48·0	12·0
12·6	41·9	42·7	43·4	44·0	44·6	45·2	45·8	46·4	47·0	47·6	48·2	48·8	49·5	50·1	12·6
13·0	43·9	44·7	45·4	46·0	46·6	47·2	47·8	48·5	49·1	49·7	50·3	50·9	51·6	52·2	13·0
13·6	45·8	46·6	47·3	47·9	48·5	49·1	49·7	50·4	51·0	51·6	52·2	52·8	53·5	54·1	13·6
14·0	47·7	48·5	49·3	49·9	50·5	51·1	51·7	52·4	53·0	53·6	54·2	54·8	55·5	56·1	14·0
14·6	49·7	50·5	51·3	51·9	52·5	53·1	53·7	54·4	55·0	55·6	56·2	56·9	57·6	58·2	14·6
15·0	51·7	52·5	53·3	53·9	54·5	55·1	55·8	56·5	57·1	57·7	58·3	59·0	59·7	60·3	15·0
15·6	52·7	53·6	54·4	55·0	55·6	56·2	56·9	57·6	58·2	58·8	59·4	60·1	60·8	61·4	15·6
16·0	53·8	54·7	55·5	56·1	56·7	57·3	58·0	58·7	59·3	59·9	60·5	61·2	61·9	62·5	16·0

LITERATE GROUP

Table of Norms (n = 642) (Contd)

Age ↓ I. Qs →	112	113	114	115	116	117	118	119	120	121	122	123	124	125	I.Qs Age
11·0	44·5	45·1	45·7	46·3	46·8	47·3	47·8	48·3	48·8	49·3	49·8	50·3	50·8	51·4	11·0
11·6	46·5	47·1	47·7	48·3	48·9	49·4	50·0	50·5	51·1	51·6	52·2	52·8	53·3	53·9	11·6
12·0	48·6	49·2	49·8	50·4	51·0	51·6	52·2	52·8	53·4	54·0	54·6	55·2	55·8	56·3	12·0
12·6	50·7	51·3	51·9	52·5	53·1	53·8	54·6	55·0	55·6	56·3	56·9	57·6	58·2	58·8	12·6
13·0	52·8	53·4	54·0	54·6	55·3	56·0	56·7	57·3	57·9	58·6	59·3	60·0	60·6	61·2	13·0
13·6	54·7	55·3	56·0	56·6	57·3	58·0	58·7	59·4	60·1	60·8	61·5	62·2	62·9	63·6	13·6
14·0	56·7	57·3	58·0	58·7	59·4	60·1	60·8	61·6	62·4	63·1	63·8	64·5	65·2	66·0	14·0
14·6	58·8	59·4	60·0	60·7	61·5	62·2	63·0	63·8	64·6	65·3	66·1	66·8	67·6	68·4	14·6
15·0	60·9	61·5	62·1	62·8	63·6	64·4	65·2	66·0	66·8	67·6	68·4	69·2	70·0	70·9	15·0
15·6	62·0	62·6	63·2	63·9	64·7	65·5	66·3	67·1	68·0	68·8	69·7	70·5	71·3	72·2	15·6
16·0	63·1	63·7	64·3	65·0	65·8	66·6	67·4	68·3	69·2	70·1	71·0	71·9	72·7	73·5	16·0

LITERATE GROUP

Table of Norms (n = 642) (Contd)

Age ↓ / I. Qs →	126	127	128	129	130	I. Qs / Age
11·0	51·9	52·4	52·9	53·4	54·0	11·0
11·6	54·4	54·9	55·5	56·0	56·6	11·6
12·0	56·9	57·5	58·1	58·7	59·2	12·0
12·6	59·4	60·0	60·7	61·3	61·8	12·6
13·0	61·9	62·6	63·3	63·9	64·5	13·0
13·6	64·3	65·0	65·7	66·4	67·0	13·6
14·0	66·7	67·4	68·1	68·8	69·6	14·0
14·6	59·2	69·9	70·7	71·4	72·3	14·6
15·0	71·7	72·5	73·3	74·1	75·0	15·0
15·6	73·0	73·9	74·8	75·6	76·4	15·6
16·0	74·4	75·3	76·2	77·0	77·8	16·0

App VII

VII

LITERATE GROUP

Conversion Table - from Raw Scores to I.Q's.

Age ↓ Scores →	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
11.0	70	71	73	74	76	78	79	81	83	84	86	87	89	90	92	93	95	96	98	99	101	102	104	106	108	109	111	113	115	116	118	120	122	124
11.6			70	72	74	75	77	78	80	82	83	85	86	88	89	91	92	94	95	96	98	99	101	103	104	106	108	109	111	113	114	116	118	120
12.0				770	71	73	74	76	78	79	81	82	84	85	87	88	90	91	92	94	95	97	98	99	101	103	104	106	108	109	111	113	114	116
12.6						71	72	74	75	77	78	80	81	83	85	86	87	89	90	91	93	94	95	97	98	99	101	103	104	106	108	109	111	112
13.0							70	71	73	74	76	77	79	80	82	84	85	87	88	89	90	92	93	94	96	97	98	99	101	103	104	106	108	109
13.6									70	72	73	75	76	78	80	81	83	84	86	87	88	89	91	92	93	95	96	97	98	100	101	103	104	106
14.0										70	71	72	74	76	77	79	80	82	83	85	86	87	89	90	91	92	94	95	96	97	98	100	101	103
14.6												70	72	73	75	76	78	79	81	82	84	85	87	88	89	90	91	92	94	95	96	97	98	100
15.0													70	71	73	74	76	77	78	80	81	83	84	86	87	88	89	90	91	93	94	95	96	97
15.6														70	71	73	74	76	77	79	80	81	83	84	86	87	88	89	90	91	93	94	95	96
16.0															70	71	73	74	76	77	79	80	81	83	84	86	87	88	89	90	91	92	94	95

LITERATE GROUP

Conversion Table (Contd.) - from Raw Scores to I.Q's.

Age ↓ Scores →	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
11.0	126	128	130																										
11.6	122	123	125	127	129	131																							
12.0	118	119	121	123	124	126	128	130																					
12.6	114	116	117	119	121	122	124	125	127	128	130																		
13.0	111	112	114	116	117	119	120	122	123	125	126	128	129	131															
13.6	108	109	111	112	114	116	117	118	120	121	123	124	126	127	128	130													
14.0	104	106	108	109	111	113	114	115	117	118	120	121	122	124	125	126	128	129	131										
14.6	101	103	104	106	108	109	111	112	114	115	117	118	119	121	122	123	125	126	127	128	130								
15.0	98	100	101	103	104	106	108	109	111	112	114	115	117	118	119	120	122	123	124	125	126	128	129	130					
15.6	97	98	100	101	103	104	106	107	109	110	112	114	115	116	118	119	120	121	122	124	125	126	127	128	129	131			
16.0	96	97	98	99	101	103	104	106	107	109	110	112	114	115	116	118	119	120	121	122	123	124	126	127	128	129	130		

App VIII

ILLITERATE GROUP

Table of Norms (n = 512)

Age ↓Yrs Mths / I.Qs →	70	71	72	73	74	75	76	77	78	79	80	81	82	I.Qs Age Yrs Mths
11.0	7·7	8·2	8·7	9·2	9·6	10·0	10·5	11·0	11·5	11·9	12·3	12·8	13·3	11.0
11.6	9·2	9·6	10·1	10·5	10·9	11·3	11·8	12·2	12·7	13·1	13·5	14·0	14·4	11.6
12.0	10·6	11·0	11·4	11·8	12·2	12·7	13·1	13·5	13·9	14·3	14·8	15·2	15·6	12.0
12.6	11·9	12·3	12·7	13·1	13·5	14·0	14·4	14·8	15·2	15·6	16·1	16·4	16·8	12.6
13.0	13·3	13·7	14·1	14·5	14·9	15·3	15·7	16·1	16·5	16·9	17·3	17·7	18·1	13.0
13.6	14·8	15·2	15·6	16·0	16·3	16·7	17·0	17·4	17·8	18·2	18·5	18·9	19·3	13.6
14.0	16·2	16·6	17·0	17·4	17·7	18·0	18·4	18·8	19·2	19·5	19·8	20·2	20·6	14.0
14.6	17·6	18·0	18·3	18·6	18·9	19·3	19·6	20·0	20·4	20·6	21·0	21·3	21·7	14.6
15.0	19·0	19·3	19·6	19·9	20·2	20·6	20·9	21·2	21·5	21·8	22·2	22·5	22·8	15.0
15.6	20·4	20·7	21·0	21·3	21·6	22·0	22·3	22·5	22·8	23·1	23·4	23·7	24·0	15.6
16.0	21·9	22·2	22,5	22·8	23·1	23·3	23·6	23·9	24·2	24·5	24·7	25·0	25·3	16.0

App VIII ii

ILLITERATE GROUP

Table of Norms (n = 512) (Contd)

Age ↓ Yrs Mths / I. Qs →	83	84	85	86	87	88	89	90	91	92	93	94	95	I.Qs Age Yrs Mths
11.0	13·8	14·2	14·6	15·1	15·6	16·1	16·5	16·9	17·4	17·9	18·4	18·8	19·2	11.0
11.6	14·9	15·3	15·7	16·2	16·7	17·2	17·6	18·0	18·5	19·0	19·5	19·9	20·3	11.6
12.0	16·0	16·4	16·9	17·4	17·9	18·4	18·8	19·2	19·7	20·2	20·7	21·1	21·5	12.0
12.6	17·2	17·6	18·0	18·5	19·0	19·5	20·0	20·4	20·9	21·4	21·9	22·3	22·7	12.6
13.0	18·5	18·9	19·2	19·7	20·2	20·7	21·2	21·6	22·1	22·6	23·1	23·6	24·0	13.0
13.6	19·7	20·0	20·3	20·8	21·3	21·8	22·3	22·7	23·2	23·7	24·2	24·7	25·1	13.6
14.0	20·9	21·2	21·5	22·0	22·5	23·0	23·5	23·9	24·4	24·9	25·4	25·9	26·3	14.0
14.6	22·0	22·3	22·6	23·1	23·6	24·1	24·6	25·1	25·6	26·1	26·6	27·1	27·5	14.6
15.0	23·1	23·4	23·8	24·3	24·8	25·3	25·8	26·3	26·8	27·3	27·8	28·3	28·8	15.0
15.6	24·3	24·6	24·9	25·4	25·9	26·4	26·9	27·4	27·9	28·4	28·9	29·4	29·9	15.6
16.0	25·6	25·9	26·1	26·6	27·1	27·6	28·1	28·6	29·1	29·6	30·1	30·6	31·1	16.0

App VIII

IV

ILLITERATE GROUP

Table of Norms (n = 512) (Contd)

Age ↓ Yrs Mths / I. Qs →	109	110	111	112	113	114	115	116	117	118	119	120	121	I. Qs Age Yrs Mths
11.0	26.9	27.6	28.2	28.8	29.4	30.1	30.8	31.4	32.0	32.6	33.2	33.7	34.3	11.0
11.6	28.1	28.7	29.3	29.9	30.5	31.2	31.8	32.4	33.0	33.5	34.1	34.7	35.2	11.6
12.0	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.4	33.9	34.4	35.0	35.6	36.1	12.0
12.6	30.4	31.0	31.6	32.2	32.8	33.4	33.9	34.4	34.9	35.4	36.0	36.6	35.1	12.6
13.0	31.6	32.1	32.7	33.3	33.9	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	13.0
13.6	32.7	33.2	33.8	34.3	34.9	35.5	36.0	36.5	37.0	37.5	38.0	38.5	38.9	13.6
14.0	33.9	34.4	34.9	35.4	35.9	36.5	37.1	37.6	38.1	38.6	39.0	39.4	39.8	14.0
14.6	34.9	35.5	36.0	36.5	37.0	37.5	38.1	38.6	39.1	39.5	39.9	40.3	40.7	14.6
15.0	36.0	36.6	37.1	37.6	38.1	38.6	39.2	39.6	40.0	40.4	40.8	41.2	41.6	15.0
15.6	37.1	37.7	38.2	38.7	39.2	39.7	40.3	40.7	41.1	41.5	41.8	42.2	42.6	15.6
16.0	38.3	38.9	39.4	39.9	40.4	40.9	41.4	41.8	42.2	42.6	42.9	43.2	43.6	16.0

App VIII

V

ILLITERATE GROUP

Table of Norms (n = 512) (Contd)

Age ↓ Yrs Mths / I.Qs →	122	123	124	125	126	127	128	129	130	I.Qs Age Yrs Mths
11.0	34·9	35·5	36·1	36·6	37·2	37·8	38·4	39·0	39·6	11.0
11.6	35·7	36·3	36·9	37·4	38·0	38·5	39·1	39·7	40·3	11.6
12.0	36·6	37·1	37·7	38·3	38·8	39·3	39·8	40·4	41·0	12.0
12.6	35·6	38·1	38·6	39·1	39·6	40·1	40·6	41·2	41·8	12.6
13.0	38·5	39·0	39·5	40·0	40·5	41·0	41·5	42·0	42·5	13.0
13.6	39·3	39·8	40·3	40·8	41·2	41·7	42·1	42·6	43·1	13.6
14.0	40·2	40·6	41·1	41·6	42·0	42·4	42·8	43·3	43·8	14.0
14.6	41·1	41·5	41·9	42·4	42·8	43·2	43·6	44·1	44·6	14.6
15.0	42·0	42·4	42·8	43·3	43·7	44·1	44·5	44·9	45·4	15.0
15.6	43·0	43·4	43·8	44·1	44·5	44·9	45·3	45·7	46·1	15.6
16.0	44·0	44·4	44·7	45·0	45·4	45·8	46·2	46·5	46·8	16.0

App VIII VI

ILLITERATE GROUP

Conversion Table - Raw Scores into I.Q's.

Age ↓ Scores →	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
11.0	69	71	73	75	77	79	81	84	86	88	90	92	95	97	99	101	103	104	106	108	109	111	112	114	115	117	119	121	122	124	126	127	129
11.6			70	72	74	77	79	81	83	86	88	90	92	94	96	99	101	102	104	105	107	109	110	112	114	115	117	119	121	122	124	126	128
12.0				69	71	73	76	78	81	83	85	87	90	92	94	96	98	100	102	104	105	107	109	110	112	114	115	117	119	121	123	125	127
12.6						70	73	75	78	80	83	85	87	89	91	93	96	98	100	102	103	105	107	108	110	112	113	115	117	119	121	123	125
13.0							70	72	74	77	79	82	84	87	89	91	93	95	97	99	101	103	104	106	108	110	112	113	115	117	119	121	123
13.6									71	73	76	79	81	84	86	88	91	93	95	97	99	101	102	104	106	108	110	111	113	115	117	119	121
14.0										70	72	75	78	81	84	86	88	90	92	94	96	98	100	102	104	106	107	109	111	113	115	117	119
14.6												71	74	77	80	83	86	88	90	92	94	96	98	100	102	104	105	107	109	111	113	115	117
15.0													70	73	76	80	83	85	87	89	91	93	95	97	99	102	104	105	107	109	111	113	115
15.6														69	72	75	79	82	85	87	89	91	93	95	97	99	101	102	105	107	109	111	113
16.0																70	74	77	81	84	87	89	91	93	95	97	99	101	103	104	106	108	110

App VIII

vii

ILLITERATE GROUP

Conversion Table - Raw Scores into I.Q's.

Age ↓ Scores →	40	41	42	43	44	45	46	47	48	49	50
11.0	131										
11.6	129	131									
12.0	128	130									
12.6	127	129	130								
13.0	125	127	129	131							
13.6	123	125	128	130							
14.0	122	124	126	128	130						
14.6	119	122	124	126	129	131					
15.0	117	120	122	124	127	129	131				
15.6	114	117	119	122	125	127	130				
16.0	112	114	117	119	122	125	128	130			

Reciprocal Matrix of the Correlations for Constant Age for Tests 2, 3, 4, 5 and 6.

		Kohs	Passalong	Patterns	Memory	Pictures
		2	3	4	5	6
Kohs	2	1·48853	-·28187	-·54933	-·09216	-·24108
Passalong	3	-·28187	1·36664	-·27905	-·17798	-·29063
Patterns	4	-·54933	-·27905	1·42621	·02350	-·15239
Memory	5	-·09216	-·17798	·02350	1·05806	-·06069
Pictures	6	-·24108	-·29063	-·15239	-·06069	1·24899

Reciprocal Matrix of the Correlations for Constant Age for Tests 2, 3, 4 and 6 only.

		Kohs 2	Passalong 3	Patterns 4	Pictures 6
Kohs	2	1·48051	-·29737	-·54650	-·24636
Passalong	3	-·29737	1·33669	-·27358	-·30084
Patterns	4	-·54650	-·27358	1·42531	-·15052
Pictures	6	-·24636	-·30084	-·15052	1·24550

App IX

Calculation of Regression Coefficients for Tests 2, 3, 4 and 6 for Factor I_1

Factor Loadings	Kohs 2	Passalong 3	Patterns 4	Pictures 6	Check	
·70458	1·48051	−·29737	−·54650	−·24636	·39028	·39028
·61937	−·29737	1·33669	−·27358	−·30084	·46490	·46490
·64740	−·54650	−·27358	1·42521	−·15052	·45461	·45461
·52614	−·24636	−·30084	−·15052	1·24550	·54778	·54778
	1·04314	−·20952	−·38505	−·17358	·27499	·27498
	−·18418	·82791	−·16945	−·18633	·28795	·28795
	−·35380	−·17712	·92268	−·09745	·29431	·29431
	−·12962	−·15828	−·07919	·65531	·28822	·28821
	·37554	·28299	·28899	·19795	1·14547	1·14547

$r_m^2 = ·7311150$

$r_{I_1·2346} = ·85505$

App X

KOHS' TEST

Calculation of Weighted Scores.

Calculated Mean = 8·33 ($=M_1$)
Calculated Sigma = 3·82 ($=\sigma_1$)
Regression Coeff = ·37554 ($= W$)
Assigned Sigma = 10
Weight = $10 \times \frac{W}{\sigma_1}$ = ·09831 x 10
= ·9831

Constant added = 8

∴ Weighted Standard Score
= $8 + \cdot 9831\ (X - M_1)$

Raw Scores (X)	·9831 x $(X-M_1)$	$8 + \cdot 9831\ (X-M_1)$	Weighted Standard Scores (rounded off)
0	-8·19	-·19	0
1	-7·21	·79	1
2	-6·22	1·78	2
3	-5·24	2·76	3
4	-4·26	3·74	4
5	-3·27	4·73	5
6	-2·29	5·71	6
7	-1·31	6·69	7
8	-0·32	7·68	8
9	0·66	8·66	9
10	1·64	9·64	10
11	2·62	10·62	11
12	3·61	11·61	12
13	4·59	12·59	13
14	5·57	13·57	14
15	6·56	14·56	15
16	7·54	15·54	16
17	8·52	16·52	17
18	9·51	17·51	18
19	10·49	18·49	18
20	11·47	19·47	19
21	12·46	20·46	20
22	13·44	21·44	21
23	14·42	22·42	22
24	15·41	23·41	23
25	16·39	24·39	24

44 X

PASSALONG TEST

Calculation of Weighted Scores

Calculated Mean = 9·27 ($=M_1$)
Calculated Sigma = 3·36 ($=\sigma_1$)
Regression Coeff = ·28299 ($= w$)
Assigned Sigma = 10
Weight = $10 \times \frac{W}{\sigma_1}$ = ·08423 x 10
= ·8423

Constant added = 8

∴ Weighted Standard Score
= $8 + \cdot8423\ (X - M_1)$

Raw Scores (X)	$\cdot8423\ x(X-M_1)$	$8 + \cdot8423\ (X - M_1)$	Weighted Standard Score (rounded off)
0	-7·81	·19	0
1	-6·97	1·03	1
2	-6·12	1·88	2
3	-5·28	2·72	3
4	-4·44	3·56	4
5	-3·60	4·40	4
6	-2·75	5·25	5
7	-1·91	6·09	6
8	-1·07	6·93	7
9	-0·23	7·77	8
10	0·61	8·61	9
11	1·46	9·46	9
12	2·30	10·30	10
13	3·14	11·14	11
14	3·98	11·98	12
15	4·83	12·83	13
16	5·67	13·67	14
17	6·51	14·51	15
18	7·35	15·35	15
19	8·20	16·20	16
20	9·04	17·04	17

5

PATTERNS TEST

Calculation of Weighted Scores.

Calculated Mean = 9·00 ($=M_1$)
Calculated Sigma = 2·98 ($=\sigma_1$)
Regression Coeff = ·28899 ($=W$)
Assigned Sigma = 10 ($=\sigma_2$)
Weight = $10 \times \frac{W}{\sigma_1}$ = ·09698x10
= ·9698

Constant Added = 9

∴ Weighted Standard Score
= $9 + \cdot 9698\ (X-M_1)$

Raw Scores (X)	·9698 x$(X-M_1)$	$9 + \cdot 9698\ (X-M_1)$	Weighted Standard Scores (rounded off)
0	-8·73	·27	0
1	-7·76	1·24	1
2	-6·79	2·21	2
3	-5·82	3·18	3
4	-4·85	4·15	4
5	-3·88	5·12	5
6	-2·91	6·09	6
7	-1·94	7·06	7
8	-0·97	8·03	8
9	0.00	9.00	9
10	0·97	9·97	10
11	1·94	10·94	11
12	2·91	11·91	12
13	3.88	12·88	13
14	4.85	13·85	14
15	5·82	14·82	15
16	6·79	15·79	16
17	7·76	16·76	17
18	8·73	17·73	18
19	9.70	18·70	19
20	10.67	19·67	20

PICTURES TEST

Calculation of Weighted Scores

Calculated Mean = 9·08 ($=M_1$)
Calculated Sigma = 2·72 ($=\sigma_1$)
Regression Coeff = ·19795 ($= w$)
Assigned Sigma = 10 ($=\sigma_2$)

Weight = $10 \times \frac{W}{\sigma_1}$ = ·07278 x 10
= ·7278

Constant added = 7

∴ Weighted Standard Score
= $7 + ·7278\ (X-M_1)$

Raw Scores (X)	·7278 x$(X-M_1)$	$7 + ·7278\ (X-M_1)$	Weighted Standard Scores (rounded off)
0	-6·61	·39	0
1	-5·88	1·12	1
2	-5·15	1·85	2
3	-4·43	2·57	3
4	-3·70	3·30	3
5	-2·97	4·03	4
6	-2·24	4·76	5
7	-1·51	5·49	5
8	-0·79	6·21	6
9	-0·06	6·94	7
10	0·67	7·67	8
11	1·40	8·40	8
12	2·13	9·13	9
13	2·85	9·85	10
14	3·58	10·58	11
15	4·31	11·31	11

LITERATES

Table of Norms for Weighted Scores to obtain P.Qs.

Age in ↓ Yrs Mths / P.Qs →	70	71	72	73	74	75	76	77	78	79	80	81	82	P.Qs Age in Yrs Mths
11.0	11.7	12.0	12.3	12.6	12.9	13.2	13.5	13.8	14.1	14.3	14.7	15.0	15.3	11.0
11.6	12.3	12.7	13.0	13.4	13.7	14.1	14.4	14.8	15.1	15.4	15.8	16.2	16.5	11.6
12.0	13.0	13.4	13.8	14.2	14.6	15.0	15.4	15.8	16.2	16.6	17.0	17.4	17.8	12.0
12.6	13.6	14.1	14.5	15.0	15.4	15.9	16.4	16.8	17.2	17.7	18.1	18.6	19.0	12.6
13.0	14.3	14.8	15.3	15.8	16.3	16.8	17.3	17.8	18.3	18.8	19.3	19.8	20.3	13.0
13.6	15.0	15.5	16.1	16.6	17.2	17.7	18.3	18.8	19.3	19.9	20.4	20.9	21.5	13.6
14.0	15.7	16.3	16.9	17.5	18.1	18.6	19.2	19.8	20.4	21.0	21.5	22.1	22.7	14.0
14.6	16.4	17.0	17.7	18.3	18.9	19.5	20.1	20.8	21.4	22.0	22.6	23.2	23.9	14.6
15.0	17.1	17.8	18.5	19.2	19.8	20.4	21.1	21.8	22.5	23.1	23.7	24.4	25.1	15.0
15.6	17.8	18.5	19.2	19.9	20.5	21.2	21.9	22.6	23.3	23.9	24.6	25.3	26.0	15.6
16.0	18.5	19.2	19.9	20.6	21.3	22.0	22.7	23.4	24.1	24.8	25.5	26.2	26.9	16.0

A11 XI

LITERATES

Table of Norms for Weighted Scores to obtain P.Qs. (Contd)

Age in Yrs Mths ↓ P.Qs →	83	84	85	86	87	88	89	90	91	92	93	94	95	P.Qs Age in Yrs Mths
11.0	15.6	15.9	16.3	16.9	17.5	18.1	18.6	19.1	19.7	20.3	20.9	21.4	21.9	11.0
11.6	16.9	17.3	17.6	18.2	18.8	19.4	20.0	20.5	21.1	21.7	22.3	22.9	23.4	11.6
12.0	18.2	18.6	19.0	19.6	20.2	20.8	21.4	21.9	22.5	23.1	23.7	24.3	24.8	12.0
12.6	19.5	19.9	20.3	21.0	21.5	22.1	22.7	23.3	24.0	24.6	25.2	25.8	26.3	12.6
13.0	20.8	21.3	21.7	22.3	22.9	23.5	24.1	24.8	25.4	26.0	26.6	27.2	27.9	13.0
13.6	22.0	22.6	23.0	23.7	24.3	25.0	25.6	26.3	26.9	27.5	28.2	28.8	29.5	13.6
14.0	23.3	23.9	24.4	25.1	25.8	26.5	27.1	27.7	28.4	29.1	29.8	30.4	31.0	14.0
14.6	24.5	25.2	25.7	26.4	27.1	27.8	28.5	29.2	29.9	30.6	31.3	31.9	32.5	14.6
15.0	25.8	26.5	27.1	27.8	28.5	29.2	29.9	30.6	31.3	32.0	32.7	33.4	34.1	15.0
15.6	26.7	27.4	28.1	28.8	29.5	30.2	30.9	31.6	32.3	33.0	33.7	34.4	35.1	15.6
16.0	27.6	28.3	29.0	29.7	30.4	31.1	31.8	32.6	33.3	34.0	34.7	35.4	36.2	16.0

LITERATES

Table of Norms for Weighted Scores to obtain P.Qs (Contd)

Age in ↓ Yrs Mths / P.Qs →	96	97	98	99	100	101	102	103	104	105	106	107	108	P.Qs Age i Yrs Mths
11.0	22.5	23.1	23.6	24.1	24.6	25.1	25.6	26.1	26.6	27.1	27.6	28.1	28.6	11.0
11.6	24.0	24.6	25.1	25.6	26.2	26.7	27.2	27.7	28.2	28.7	29.2	29.7	30.2	11.6
12.0	25.4	26.0	26.6	27.2	27.8	28.3	28.8	29.3	29.8	30.4	30.9	31.4	31.9	12.0
12.6	26.9	27.5	28.1	28.8	29.6	30.1	30.4	30.9	31.5	32.1	32.6	33.1	33.6	12.6
13.0	28.5	29.1	29.7	30.4	31.1	31.6	32.1	32.6	33.2	33.8	34.3	34.8	35.3	13.0
13.6	30.1	30.7	31.4	32.1	32.7	33.2	33.8	34.3	34.9	35.5	36.0	36.5	37.1	13.6
14.0	31.7	32.4	33.1	33.7	34.3	34.9	35.5	36.1	36.6	37.1	37.7	38.3	38.9	14.0
14.6	33.2	33.9	34.6	35.3	35.9	36.5	37.0	37.6	38.1	38.7	39.3	39.9	40.5	14.6
15.0	34.8	35.5	36.2	36.9	37.5	38.0	38.5	39.1	39.7	40.3	40.9	41.5	42.1	15.0
15.6	35.8	36.5	37.2	37.9	38.6	39.1	39.7	40.3	40.9	41.4	42.0	42.6	43.2	15.6
16.0	36.9	37.6	38.3	39.0	39.7	40.3	40.9	41.5	42.0	42.5	43.1	43.7	44.3	16.0

LITERATES

Table of Norms for Weighted Scores to obtain P.Qs (Contd)

Age in Yrs Mths ↓ / P.Qs →	109	110	111	112	113	114	115	116	117	118	119	120	121	P.Qs Age Yrs Mths
11.0	29·1	29·6	30·1	30·6	31·1	31·6	32·2	32·7	33·2	33·7	34·3	34·9	35·4	11.0
11.6	30·7	31·3	31·8	32·3	32·8	33·3	33·9	34·5	35·0	35·6	36·1	36·7	37·2	11.6
12.0	32·4	33·0	33·5	34·0	34·5	35·1	35·7	36·3	36·9	37·5	38·0	38·5	39·1	12.0
12.6	34·1	34·7	35·2	35·7	36·2	36·8	37·4	38·0	38·6	39·2	39·7	40·3	40·9	12.6
13.0	35·9	36·5	37·0	37·5	38·0	38·5	39·1	39·7	40·3	40·9	41·5	42·1	42·7	13.0
13.6	37·7	38·2	38·8	39·3	39·8	40·3	40·9	41·5	42·1	42·7	43·3	43·9	44·5	13.6
14.0	39·4	39·9	40·5	41·1	41·6	42·1	42·6	43·2	43·8	44·4	45·0	45·7	46·3	14.0
14.6	41·0	41·5	42·1	43·7	43·2	44·8	44·3	44·9	45·6	46·2	46·8	47·5	48·1	14.6
15.0	42·6	43·1	43·7	44·3	44·9	45·5	46·0	46·7	47·4	48·1	48·7	49·3	50·0	15.0
15.6	43·7	44·2	44·8	47·4	46·0	46·6	47·1	47·8	48·6	49·3	50·0	50·6	51·4	15.6
16.0	44·8	45·3	45·9	46·5	47·1	47·7	48·2	49·0	49·8	50·6	51·3	52·0	52·8	16.0

LITERATES

Table of Norms for weighted Scores to obtain P.Qs (Contd)

Age in Yrs Mths ↓ P.Qs →	122	123	124	125	126	127	128	129	130	P.Qs Age in Yrs. Mths
11.0	35.9	36.4	37.0	37.6	38.1	38.6	39.1	39.7	40.3	11.0
11.6	37.8	38.3	39.0	39.5	40.1	40.6	41.1	41.7	42.3	11.6
12.0	39.7	40.3	40.9	41.4	42.0	42.6	43.2	43.8	44.3	12.0
12.6	41.5	42.1	42.7	43.2	43.8	44.4	45.0	45.6	46.2	12.6
13.0	43.3	43.9	44.5	45.1	45.7	46.3	46.9	47.5	48.1	13.0
13.6	45.1	45.7	46.4	47.0	47.6	48.2	48.8	49.4	50.1	13.6
14.0	46.9	47.6	48.3	48.9	49.5	50.1	50.7	51.4	52.1	14.0
14.6	48.8	49.5	50.2	50.8	51.5	52.1	52.7	53.4	54.1	14.6
15.0	50.7	51.4	52.1	52.7	53.4	54.1	54.8	55.5	56.1	15.0
15.6	51.2	52.9	53.6	54.2	55.0	55.7	56.5	57.2	58.8	15.6
16.0	53.6	54.4	55.1	55.8	56.6	57.4	58.2	58.9	59.6	16.0

LITERATES

Conversion Table for Weighted Scores to obtain P.Qs.

Age ↓Yrs Mths / Scores →	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Scores Age Yrs Mths
11.0			71	74	78	81	84	86	88	90	92	93	95	97	99	101	103	105	11.0
11.6			69	72	75	78	81	83	86	87	89	91	93	94	96	98	100	102	11.6
12.0				70	73	75	78	80	83	85	87	88	90	92	94	95	96	99	12.0
12.6					71	73	75	78	80	82	84	86	88	90	91	93	94	96	12.6
13.0					69	71	73	75	77	79	81	83	85	87	89	90	92	94	13.0
13.6						70	72	74	76	77	79	81	83	85	87	88	90	91	13.6
14.0						69	71	72	74	76	77	79	81	83	84	86	87	89	14.0
14.6							69	71	73	74	76	77	79	81	82	84	85	87	14.6
15.0								70	71	73	74	76	77	79	80	82	83	85	15.0
15.6									70	72	73	75	76	78	79	81	82	83	15.6
16.0									69	71	72	74	75	76	78	79	81	82	16.0

LITERATES

Conversion Table for Weighted Scores to obtain P.Qs. (Contd)

Age ↓Yrs Mths / Scores →	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Scores → Age ↓ Yrs Mths
11.0	107	109	111	113	115	117	119	120	122	124	126	128	130			11.0
11.6	104	106	108	109	111	113	115	117	119	121	122	124	126	128	130	11.6
12.0	100	102	104	106	108	110	112	114	116	117	119	121	123	124	126	12.0
12.6	98	99	101	103	105	107	109	111	113	114	116	118	119	121	123	12.6
13.0	95	97	98	100	102	104	105	107	109	111	113	115	117	118	120	13.0
13.6	93	94	96	97	99	101	102	104	106	108	110	111	113	115	117	13.6
14.0	90	92	93	95	96	98	100	101	103	105	107	108	110	112	114	14.0
14.6	88	90	91	93	94	96	97	99	100	102	104	106	107	109	111	14.6
15.0	86	88	89	91	92	93	95	96	98	99	101	103	104	106	108	15.0
15.6	85	86	88	89	91	92	93	95	96	98	99	101	102	104	106	15.6
16.0	84	85	86	88	89	91	92	93	95	96	98	99	101	102	104	16.0

App XI

LITERATES

Conversion Table for Weighted Scores to obtain P.Qs. (Contd)

Age ↓Yrs Mths / Scores →	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	Scores Age Yrs Mths
11.0																11.0
11.6																11.6
12.0	128	129														12.0
12.6	125	126	128	130												12.6
13.0	122	123	125	127	128	130										13.0
13.6	118	120	122	123	125	127	128	130								13.6
14.0	116	117	119	121	122	124	125	127	128	130						14.0
14.6	113	114	116	118	119	121	122	124	125	127	128	130				14.6
15.0	110	112	113	115	116	118	120	121	122	124	125	127	128	130		15.0
15.6	108	110	111	113	115	116	118	119	121	122	123	125	126	127	129	15.6
16.0	106	108	109	111	113	115	116	117	119	120	121	123	124	125	127	16.0

LITERATES

Conversion Table for Weighted Scores to obtain P.Qs. (Contd)

Age ↓ Yrs Mths / Scores →	58	59	60	Scores → Age Yrs Mths
11.0				11.0
11.6				11.6
12.0				12.0
12.6				12.6
13.0				13.0
13.6				13.6
14.0				14.0
14.6				14.6
15.0				15.0
15.6	130			15.6
16.0	128	129	131	16.0

AH XII

PAPER READ AT THE PSYCHOLOGY SECTION, INDIAN SCIENCE CONGRESS, 1949.

Mental Survey of a Village

by C.M. BHATIA

1. Aim - The aim of the survey was to investigate the intelligence of illiterate boys between the ages of 11 to 16 years residing in a typical village.

2. The place and time of investigation - The village surveyed was Aimanpura, P. O. Bah, district Agra. It is situated at a distance of about 2 miles from Bah and about 45 miles from Agra. The village is reached either from Agra, via Bah by motor bus, or from Jaswantnagar, E. I. R., after ferrying across the river Yamuna. The village has a total population of about 400 souls, of which about 50 are boys between 11 and 16 years. The village has a mixed population of Brahmins, Vaishyas, Chamars, etc., and has two Muslim families also. But as the influence of Brahmins predominates in the village and a tradition of literacy and learning persists, it was found that out of the 50 boys mentioned above, about half were attending some school or the other or had attended a school earlier in their childhood. The other half (i.e. about 25) had never been inside a school and were completely illiterate. Out of these 23 were tested and their results are reported in this paper.

The investigator's thanks are due to the village mukhia, Pandit Bahori Lal and to his son, Pandit Kalyan Singh, Assistant Master, Middle School, Bah, for making this investigation possible and for securing active co-operation from all the village people.

The investigation was carried on for four days, 19th to 23rd October, 1947, during which period the investigator lived in the village.

3. The Tests - The psychological tests employed were the Battery of Performance Tests (B.P.T.4) which have been standardized

at the Bureau of Psychology, United Provinces, Allahabad, and the standardization details (including norms) of which will shortly be published. It may, however, be mentioned here that the standardization has been done by applying the Battery individually to over more than a thousand subjects between the ages of 11 and 16 years. These subjects have been drawn both from rural as well as urban areas and include literates and illiterates alike. The Battery is thus applicable both to literates as well as illiterates.

The Battery consists of the following five sub-tests which are given in the order mentioned below:

(i) An adaptation of the Kohs' Block Design Test.

(ii) An adaptation of the Passalong Test.

(iii) A Pattern Drawing Test specially constructed for this Battery. Eight patterns of progressive difficulty are employed.

(iv) An Immediate Memory Test which has been specially constructed so as to be suitable for illiterate subjects also.

(v) A Picture Construction Test which has also been specially devised for this Battery, the pictures being specially drawn to suit our village environment. Five pictures of progressive difficulty are employed in this Test.

Scoring is done on the basis of time and success combined, and time has to be kept by means of a stop-watch. The Battery is administered individually and takes about an hour to be given to a single boy.

4. Conditions of testing. - Conditions of testing were controlled carefully for there are various factors in a village which make testing difficult. A suitable place for testing must first be selected. A Chabutra under the shade of a tree is suitable and a takhat on which the concrete test material can be spread out before the boys is desirable. Then, the peculiar emotional attitude of the village folk must be tactfully handled. It is a childlike curiosity which results in the place of testing being overcrowded by interested spectators in the beginning, but which

dies out after the first few hours or the first day. Lastly care should be taken not to let the tests be unduly known among that section of the population which has to be tested. Information about the tests passed on by word of mouth does not affect the results at all, but care should be taken that the boy to be tested does not watch the actual performance of another boy immediately before he himself is tested.

5. Results - The scores of the boys were converted into I.Q. points with the help of the table of Norms. (This was on the basis of a preliminary standardisation) The results are given in the table below:

Results

Village - Aimanpura.

Illiterate boys - 11 years to 16 years.

Serial number	Name	Age	Mental Age*	I.Q.*
1	Randhir	14	15	107
2	Chhotey Khan	16	12	80
3	Ram Lakshman	14	13	93
4	Sita Ram	13	11	85
5	Banarsi	13	13	100
6	Mansaram	12	11	92
7	Ahmad	14	11	80
8	Baij Nath	15	14	93
9	Kamta Prasad	14	14	98
10	Om Prakash	14	16	120
11	Ram Ji Lal	13	11	85
12	Ram Samarth	11	9	82
13	Girja Shanker Pandey	11	12	109
14	Shiv Charan	16	11	70
15	Kali Charan	12	13	108
16	Mohar Singh	16	11	70

* See note on next page

Serial number	Name	Age	Mental Age*	I.Q.*
17	Ram Ratan	12	15	125
18	Dhani Ram	13	10	75
19	Lala Ram	11	11	98
20	Nemi Chand	13	16	123
21	Asha Ram	13	13	100
22	Baiju	13	10	80
23	Tulsi Ram	16	11	70

* These are on the basis of a preliminary standardization; not the one reported in the thesis

The following table gives a summary of the results:

Distribution according to intelligence

I. Q. points	Frequency (i.e. number of boys)
120 - 129	3
110 - 119	0
100 - 109	5
90 - 99	5
80 - 89	6
70 - 79	4
Total .	23

In other words, we find in the village population:

3 boys who are of superior Intelligence.

10 boys who are of average Intelligence.

10 boys who are below average in Intelligence.

These are results which are amply corroborated on other grounds too. The three illiterate boys who are of superior intelligence are capable of benefiting from education up to the University level, the ten average boys are fit for education up to the secondary stage while the ten who are below average in Intelligence will not shine in formal education but may do well in situations which are of a

practical routine nature. The three superior boys need the greatest encouragement including State help not only to banish their illiteracy but to enable them to proceed up to the University stage.

6. Typical Cases - We give details of three typical cases which will illustrate our results:

(a) Om Prakash, aged 14 years, I.Q. 120 possesses active manners. He is a Brahmin boy. When his father was questioned as to why Om Prakash was never sent to school although he is capable of benefiting from education up to at least the University level the answer was given that the other brothers of Om Prakash had gone to school and then had found farming to be too irksome a job. So the father did not wish Om Prakash to be lost to Agriculture as he had to cultivate a substantial amount of land. A commentary on education which makes us pause and think. (Reference to educational condition in India)

(b) Randhir, aged 14 years, I.Q. 107; a bright personality. He is a Chamar (Low Caste) boy, and just whiles away his time on odd jobs. His family is too poor to think of sending him to school. Although he is capable of studying at least up to the college level, his intellect is being simply wasted because of the pressing financial demands in the family. He is a typical case where state aid in the form of a scholarship and substantial maintenance allowance is urgently needed.

(c) Dhani Ram, aged 13 years, I.Q. 75. Dull personal appearance also. He is the type of the boy who finds it difficult to learn things because of inferior mental capacity. He should be given a concrete type of education. Dhani Ram is a Bania boy and it was found that he was sent to the Primary School, 2 miles away but never made any substantial progress, and then dropped off from the school.

App XIII

PERFORMANCE TEST SCORE SHEET

Date and time ..... Place .....

Name of the subject..... Father's name .....

Date of birth of the subject from official records..... Estimate age of the subject ..... yrs....months..

Whether Literate or Illiterate.....

(If Literate, class in which he is reading or has read.)

Father's occupation (or the subject's occupation)..... Caste.....

General opinion about the subject's intelligence.

(If reading in school, position in class.)

Very superior:
Superior:
Average :
Inferior:
Very Inferior:

Any particular emotional tendency noticed during the test.....

Test I. - KOHS BLOCK DESIGN TEST

Design No.	Time taken in mts. and seconds.	Success or failure.	Any remarks
I (Practice)			
II			
III			
IV			
V			
VI			
VII			
VIII			
IX			
X			

Test II - PASSALONG TEST

Design No.	Time taken in mts. and seconds.	Success or failure.	Any remarks
I (Practice)			
II			
III			

Test II.- (Contd)

Design No.	Time taken in mts. and seconds.	Success or failure	Any remarks
IV			
V			
VI			
VII			
VIII			

Test III. - PATTERN DRAWING TEST.

Pattern No.	Time taken in mts. and seconds.	Success or failure	Any remarks
I (Practice)			
II			
III			
IV			
V			
VI			
VII			
VIII			

Test IV.- IMMEDIATE MEMORY TEST

	Span
For Sounds	
For Reversed Sounds	

	Span
For Digits	
For Reversed Digits	

App XIII

Test V.- PICTURE CONSTRUCTION TEST.

Picture No.	Time taken in mts. and seconds.	Success or failure	Any remarks
I (Practice)			
II			
III			
IV			
V			

Signature of Examiner (.....
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