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NATIONAL BUREAU OF EDUCATIONAL AND SOCIAL RESEARCH

THE FINAL APPLICATION OF THE
NEW SOUTH AFRICAN GROUP TEST

REPORT ON THE SAMPLE
AND DERIVATION OF NORMS

BY C.M. ELDER

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DEPARTMENT OF EDUCATION, ARTS AND SCIENCE
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THE FINAL APPLICATION OF THE NEW SOUTH AFRICAN

GROUP TEST:

REPORT ON THE SAMPLE AND DERIVATION OF NORMS -

BY C.M. ELDER.

The final form of the New South African Group Test was designed to cater for three series of ages of both Afrikaans and English school children. These were the Junior series for ages 8 - 11 years inclusive; the Intermediate series for ages 10 - 14 years inclusive; and the Senior series for ages 13 - 18 years inclusive. It was necessary to draw Afrikaans and English samples of boys and girls for each of what amounted to fifteen age groups, as the ages 10 and 11 fell into both Junior and Intermediate groups and ages 13 and 14 into both Intermediate and Senior groups.

The size of a sample can be determined by the degree of precision of measurement required, and was calculated from the formula for the standard error of the mean, viz.

$$G_M = \frac{S}{\sqrt{N}}$$

Norms of intelligence tests are generally expressed in terms of a mean of 100 and standard deviation of 15. It was decided that a standard error of .75, which would define a confidence interval for the mean of 98.5 to 101.5 with probability .95, would be satisfactory. Substitution of .75 for G_M and 15 for S in the above formula fixes the size of sample at 400. Experience in the application of the semi-final form of the test, when the actual samples obtained fell far short of the numbers required, suggested making generous allowance for testees dropping out, and the size of sample was accordingly increased to 500 boys and 500 girls of each of the required age groups.

The composition of the entire sample required from each language group is illustrated in the table below:-

| Age | Junior Test | Intermediate Test | Senior Test |
|-------|-------------|-------------------|-------------|
| 8 | 1000 | | |
| 9 | 1000 | | |
| 10 | 1000 | 1000 | |
| 11 | 1000 | 1000 | |
| 12 | | 1000 | |
| 13 | | 1000 | 1000 |
| 14 | | 1000 | 1000 |
| 15 | | | 1000 |
| 16 | | | 1000 |
| 17 | | | 1000 |
| 18 | | | 1000 |
| TOTAL | 4000 | 5000 | 6000 |

Environment and economic status have been shown to influence intelligence test scores, so an attempt was made to see that the samples included representative proportions of testees from urban and rural areas and from all economic strata, and that the samples should be drawn proportionally from all types of educational institutions. It proved to be very difficult to construct a reliable framework from which to sample. Statistics about school children are published by age, but not separately for each language group. The parent populations for each age group involved had to be estimated as nearly as possible. Information was derived from the sources quoted below.

1) Provincial and Private Schools.

The latest available information about these schools was contained in Census tables referring to the position in June, 1952.

Table I gives the enrolment of all pupils of each age in standards above the grades in all European provincial and private schools. (The semi-final application of the test had demonstrated that the test was not suitable for children in the grades, so it was decided to exclude them from the final sample).

TABLE I.

Age distribution of pupils aged 8 - 18 in standards above the grades, in provincial and private schools, June, 1952.

| | Provincial Schools | | | | Private Schools | Total |
|-------|--------------------|--------|--------|-----------|-----------------|---------|
| | Cape | Natal | C.F.C. | Transvaal | | |
| 8 | 12,620 | 7,023 | 2,730 | 19,508 | 2,748 | 42,589 |
| 9 | 15,231 | 8,132 | 4,027 | 23,572 | 2,873 | 51,165 |
| 10 | 16,438 | 7,121 | 4,063 | 23,599 | 2,810 | 51,619 |
| 11 | 16,319 | 4,099 | 4,320 | 22,435 | 2,848 | 50,219 |
| 12 | 16,361 | 4,133 | 4,383 | 22,765 | 2,982 | 50,774 |
| 13 | 16,100 | 3,843 | 4,321 | 21,190 | 3,000 | 48,646 |
| 14 | 15,337 | 3,453 | 4,261 | 19,680 | 3,027 | 45,758 |
| 15 | 13,136 | 2,702 | 3,747 | 16,726 | 2,772 | 39,084 |
| 16 | 8,138 | 1,512 | 2,323 | 8,997 | 2,335 | 23,208 |
| 17 | 3,597 | 682 | 1,249 | 3,432 | 1,372 | 10,332 |
| 18 | 936 | 157 | 281 | 811 | 785 | 2,970 |
| Total | 134,911 | 32,875 | 38,537 | 182,489 | 27,552 | 416,364 |

Source: Bureau of Census and Statistics.

Census tables also gave the numbers of pupils instructed through different media. By making the assumption that the medium of instruction was the same as the mother tongue, and by ignoring the small number of children educated through the medium of both official languages or through some other language, the figures in Table II were derived. From this table it was estimated that 59.6% of pupils in provincial and

private schools were Afrikaans. It was realised that there was no justification for assuming that this proportion applied at every age, but failing other information, there appeared to be no alternative and the assumption of constant proportions of Afrikaans and English pupils was made in estimating the numbers of Afrikaans and English-speaking pupils of each age. In view of the tendency for children in towns to go to school earlier than those in rural areas and of the fact that a greater proportion of the Afrikaans population is rural, it is likely that the estimates were too heavily weighted with Afrikaans pupils of lower ages and English pupils of higher ages.

TABLE II.

Distribution of pupils in provincial and private schools, by language, 1952.

| | Afrikaans | | English | | TOTAL |
|-----------|-----------|-------|-----------|-------|---------|
| | Enrolment | % | Enrolment | % | |
| Cape | 89,530 | 35.0 | 45,183 | 26.1 | 134,713 |
| Natal | 7,160 | 2.8 | 26,794 | 15.5 | 33,954 |
| O.F.S. | 34,194 | 13.3 | 4,726 | 2.7 | 38,920 |
| Transvaal | 125,181 | 48.9 | 59,091 | 34.1 | 184,272 |
| Private | - | - | 37,566 | 21.6 | 37,566 |
| TOTAL | 256,065 | 100.0 | 173,360 | 100.0 | 429,425 |
| % | 59.6 | | 40.4 | | 100.0 |

2) Institutions maintained or aided by the Department of Education, Arts and Science.

Age distributions by sex were obtained from the statistical returns to the Department of Education for 1953. In estimating the language distribution it was originally assumed that pupils in all schools except the Schools of Industries at King William's Town and Queenstown and the Salesian Institute in Cape Town were Afrikaans-speaking and that the remaining pupils were English-speaking. Detailed information is contained in Table III. This original estimate was subsequently revised - see p. 29 .

(It should be noted that the state-aided special schools for the blind, the deaf and epileptics were left out of account).

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TABLE III

Age distribution of students in schools and institutions maintained and aided by the Department of Education, Arts and Science, in technical colleges and in universities, by sex, 1953.

| (1) Age | Institutions of the Department of Education, Arts and Science | | | | | | | | | | | | | | | | Total | | | | | | |
|------------|---|----|-------------------------|-----|--------------------------|------|------------------------|------|-----------------------|-----|---------------|------|-------|-----|--------------------------------|-----------|--------------------|--------------|------------------|-----------|------------|-------|-------|
| | Schools for Physically Handicapped | | Commercial High Schools | | House-craft High Schools | | Technical High Schools | | Schools of Industries | | Reformatories | | Total | | State-Aided Vocational Schools | | Technical Colleges | | (1) Universities | | Total | | |
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | |
| Under 12 | 41 | | | | | | | | 1 | | | | | 41 | 1 | | | | | | | 41 | 1 |
| 12 | 24 | | | | | | | 1 | | | | | 26 | | | | | | | | | 34 | |
| 13 | 16 | 2 | | | | | | 23 | 6 | | | | 61 | 33 | | 6 | | | | | | 99 | 39 |
| 14 | 59 | 5 | | | | | | 116 | 78 | 4 | | 373 | 195 | | | | | (2) 3,967 | (2) 2001 | | | 4391 | 2228 |
| 15 | 54 | 10 | | | | | | 289 | 150 | 9 | 1 | 911 | 492 | | | 71 | | 1,817 | 1,137 | (3) 44 | (3) 270 | 2845 | 1970 |
| 16 | 39 | 4 | | | | | | 373 | 176 | 16 | 4 | 1109 | 660 | | | 76 | | 4,596 | 1,574 | 70 | 68 | 5851 | 2431 |
| 17 | 40 | 4 | | | | | | 345 | 135 | 32 | 5 | 911 | 539 | | | 51 | | 5,284 | 1,680 | 870 | 619 | 7116 | 2938 |
| 18 | 23 | 6 | | | | | | 228 | 70 | 50 | 8 | 490 | 241 | | | (4) 13 | | 5,660 | 1,358 | 1895 | 1033 | 8058 | 2683 |
| | 296 | 31 | 133 | 655 | 818 | 2005 | 23 | 1375 | 616 | 113 | 18 | 3922 | 2161 | 510 | 589 | 21,324 | 7750 | 2879 | 1990 | 2879 | 1990 | 28435 | 12290 |

(1) Full-time and Part-time students.

(2) Under 15 years of age.

(3) Under 16 years of age.

(4) Over 17 years of age.

3) Technical Colleges.

In Table III are found also the age distributions of the Technical Colleges derived from the 1953 statistical returns. (Full-time and part-time students are all included).

It was originally assumed that the proportions of Afrikaans and English pupils would be the same as in provincial and private schools. Later information led to a revision of this estimate. (See p. 27)

4) Universities.

Table III contains also information about the universities from the 1953 statistical returns.

The universities of the Orange Free State, Potchefstroom, Pretoria and Stellenbosch were assumed to be entirely Afrikaans and those of Cape Town, Natal, Rhodes and the Witwatersrand to be entirely English.

Full-time and part-time students were all included, but as the University of South Africa has no internal students, it was excluded.

5) Normal Colleges.

In response to a request from the Bureau, the provincial education departments supplied the numbers of pupils of ages 18 and under by sex and home language.

6) Other Educational Institutions.

A circular was sent in June 1954 to all Nursing Colleges, Nursing Training Schools, Agricultural and Forestry Colleges, Military Colleges and Railway Colleges asking for the same information required of the Normal Colleges and asking for permission to conduct tests if necessary. The desired information was received from seven of the eight Nursing Colleges, three of the seven Nursing Training Schools, one of the six Agricultural Colleges, the only Forestry School and three of the four Military Colleges. One of the Nursing Training Schools replied (without furnishing data) that it would be unable to co-operate.

A summary of the enrolment of students aged 8 to 18 in different types of educational institutions is provided in Table IV.

| | | | | | | | | |
|-----|--|--|--|--|--|--|--|--|
| | | | | | | | | |
| (2) | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| | | | | | | | | |

and 18 year-olds (and to a lesser extent of 15 year-olds) were drawn from a select group, whereas those of younger ages were drawn from the entire population. The sample on which the Senior Test was standardised is, therefore, not comparable with the samples on which the Junior and Intermediate Tests were standardised.

TABLE V.

| Distribution of 14 -18 year-olds in different types of educational institutions | | | | | |
|---|--|-----------|------|---------|------|
| Age | Type of Institution. | Afrikaans | | English | |
| | | No. | % | No. | % |
| 14 | Provincial and Private Schools | 26,997 | 86.8 | 18,761 | 88.2 |
| | U.E.D. Schools, Techs. and Universities | 4,109 | 13.2 | 2,510 | 11.8 |
| 15 | Provincial and Private Schools | 23,060 | 88.0 | 16,024 | 90.6 |
| | U.E.D. Schools, Techs. and Universities | 3,155 | 12.0 | 1,660 | 9.4 |
| 16 | Provincial and Private Schools | 13,693 | 71.5 | 9,515 | 77.2 |
| | U.E.D. Schools, Techs. and Universities..... | 5,470 | 28.5 | 2,812 | 22.8 |
| 17 | Provincial and Private Schools | 6,096 | 49.6 | 4,236 | 52.3 |
| | U.E.D. Schools, Techs. and Universities | 6,191 | 50.4 | 3,863 | 47.7 |
| 18 | Provincial and Private Schools | 1,752 | 22.2 | 1,218 | 21.0 |
| | U.E.D. Schools, Techs. and Universities | 6,160 | 77.8 | 4,581 | 79.0 |

Table V gives the numbers of Afrikaans and English students of each age from 14 to 18 estimated to be in provincial and private schools or in technical colleges, universities and schools under the Department of Education, Arts and Science. This was drawn up at an early stage in the sampling procedure, before replies had been received from all normal and other colleges. The necessity of completing the sampling programme in time for testing to begin in the third quarter, demanded that an early estimate be made of the size of the sample to be drawn from provincial and private schools. This estimate appears in Table VI.

TABLE VI

The Sample to be drawn from Provincial and Private Schools

| Age | Afrikaans | | English | |
|--------------|---------------|------------|---------------|--------------|
| | No. | % | No. | % |
| 8 | 1,000 | 7.7 | 1,000 | 7.6 |
| 9 | 1,000 | 7.7 | 1,000 | 7.6 |
| 10 | 2,000 | 15.3 | 2,000 | 15.2 |
| 11 | 2,000 | 15.3 | 2,000 | 15.2 |
| 12 | 1,000 | 7.7 | 1,000 | 7.6 |
| 13 | 2,000 | 15.3 | 2,000 | 15.2 |
| 14 | 1,738 | 13.3 | 1,764 | 13.4 |
| 15 | 880 | 6.7 | 906 | 6.9 |
| 16 | 715 | 5.5 | 772 | 5.8 |
| 17 | 496 | 3.8 | 524 | 4.0 |
| 18 | 222 | 1.7 | 210 | 1.6 |
| TOTAL | 13,051 | 100 | 13,176 | 100.1 |

It will be seen that up to the age of 13 the entire sample was to be drawn from the schools. The numbers at the other ages were obtained by taking the percentages in provincial and private schools obtained in Table V. (Note: 2,000 testees were required at each of the ages which was duplicated, such as 10 years, for which samples were required for both Junior and Intermediate tests. According to Table V 86.8% of the Afrikaans 14 year-olds in educational institutions were in provincial or private schools. Therefore 86.8% of the 2,000 testees required, i.e. 1,738, were to be drawn from these schools. This example should make clear the derivation of the figures in Table VI.)

From Table VI it was thus determined that 13,051 Afrikaans and 13,176 English speaking testees were to be drawn from provincial and private schools. It was decided that these should be drawn from 200 schools and that the number of schools and pupils from each province should be proportional to enrolment. By multiplying the percentages in column 3 of Table II first by 200 and then by 13,051 and those in column 5 by 200 and by 13,176 the figures in Table VII were obtained, determining the number of schools and testees to be drawn from the different provinces and from private schools.(i)

(i) Note: In the original form of Table I the Natal figures were too high and the distribution of schools in the original form of Table VII was not quite the same as that appearing in Table VII (See figures in brackets for the original values.)

TABLE VII.

Number of schools and testees to be selected from the different provinces and from private schools.

| | Afrikaans Sample | | English Sample | |
|-------------------|------------------|---------|----------------|---------|
| | Schools | Testees | Schools | Testees |
| Cape | - (8) | 4568 | (50) | 3439 |
| Natal | 6 (26) | 365 | (39) 32 | 2042 |
| Orange Free State | 27 (97) | 1736 | (5) 5 | 356 |
| Transvaal | 98 | 6382 | (65) 68 | 4493 |
| Private Schools | - | - | (41) | 2846 |
| Total | 200 | 13,051 | 200 | 13,176 |

The figures in brackets were derived from the original percentages in Table II when children in the substandard schools had inadvertently been included in the enrolment for Natal.

Selection of Schools to be Tested.

In an attempt to ensure that all geographic and all economic areas should be properly represented, the provinces were sub-divided into so-called "strata". Contiguous districts, or inspector circuits, judged to be homogeneous, were grouped together and the larger cities were sub-divided into economic areas. In Cape Town each of the inspectors' circuits Cape No.1, No.2, No.3, No.4 and Cape/Parow No.1 formed a separate stratum. Durban was divided into Central, Southern and Northern areas. In Johannesburg the boundaries of the four areas were Louis Botha Avenue, the Rustenburg Road, the Heidelberg Road and the Booysens Road. The Pretoria areas were south-east, north-east, south-west and north-west. Altogether there were 23 of these "strata" in the Cape, 7 in Natal, 5 in the Orange Free State and 22 in the Transvaal.

For each province the number of and enrolment in primary, secondary and high schools was tabulated by stratum and medium of instruction (A, E or A/E). The source of information was the frame work of the semi-final sample which had been derived from provincial statistics and from information in the Bureau).

It had already been determined how many schools were to be selected from the different provinces for the Afrikaans and English samples (See Table VII). It was, however, still necessary to determine how many of the schools should be single medium schools and how many should be schools catering for both Afrikaans and English pupils. The procedure followed may be illustrated by quoting the Cape Province as example.

In the Cape Province the enrolment figures were:

| | |
|----------------------------------|-----------------------|
| Afrikaans medium schools | 67,837 |
| English medium schools | 37,910 |
| Afrikaans/English medium schools | <u>68,347</u> |
| Total | <u><u>174,095</u></u> |

The proportion of Afrikaans-speaking pupils in the province, calculated from the figures in Table II, was 66.5%. Ignoring the fact that there is a small proportion of children whose home language is neither Afrikaans nor English or both Afrikaans and English, and applying the percentage of 66.5% to the figure 174,095, it was assumed that the total number of Afrikaans-speaking pupils was 115,773.

As the Afrikaans medium schools accounted for only 67,957 the deficit of 47,816 must have been attending Afrikaans/English medium schools.

This suggested that the 69 schools selected for the Afrikaans sample should include $\frac{47,816}{115,773} \times 69$, ie. 28 A/E schools, and that the

50 schools selected for the English sample should include $\frac{20,412}{58,322} \times 50(1)$, ie. 17 A/E schools, giving a total of 45 A/E schools for the entire sample.

It was considered impractical to test in these schools only pupils of one language, so it was decided to test both Afrikaans and English pupils in each of the 45 A/E schools selected.

Because the proportions of pupils of each language to be found in A/E medium schools was known to vary greatly throughout the province, it was considered expedient to weight the strata before apportioning the 45 schools to different areas. The A/E schools in all strata except numbers 6, 7, 21, 22 and 23 were assumed to be predominantly Afrikaans. The ratio of enrolment in the 18 predominantly Afrikaans strata to the 5 predominantly English strata was found to be 54:14. Consequently it was decided to draw 35 of the A/E medium schools from the Afrikaans strata and 10 from the English. In order to satisfy Table VII the number of Afrikaans medium schools to be drawn was thus $69-35=34$ and the number of English medium schools $50(1)-10=40$.

From the information on the list of primary, secondary and high schools tabulated by stratum referred to on p. 9 was calculated the proportion of Afrikaans Medium, English Medium, predominantly Afrikaans A/E and predominantly English A/E schools to be found in each stratum. The percentages for the Afrikaans medium schools was multiplied by 34 and by taking the results to the nearest integer, the number of schools to draw from each stratum was determined. The same procedure was adopted in determining how many English medium and double medium schools to draw from each stratum.

In Natal, the Orange Free State and the Transvaal this distinction between predominantly Afrikaans and predominantly English double medium schools was not made.

When selecting the schools a table was drawn up giving the distribution of Afrikaans, English and Afrikaans/English medium primary and high schools in four size groups, viz. 0-99, 100-299, 300-499 and 500+. The number of schools selected from each subgroup was proportional to enrolment in the majority of cases, though rigid adherence to this principle was not always possible. For instance, enrolment figures justified the inclusion of only one Afrikaans medium and no Afrikaans/English medium school in stratum no. 1 of the Cape Province. As there was no single Afrikaans medium school catering for all standards, it was decided to include in the sample both a high and a primary school. Boys' and girls' schools were usually bracketed together to preserve the balance between the sexes, so that in many cases two schools had to be drawn where only one was called for. Ultimately 418 instead

(1) According to the original form of Table VII the sample was to include 50, not 52, E.M. schools from the Cape.

of 400 schools were selected. The actual selection made use of random methods, and may be illustrated by quoting stratum 1. of the Cape Province, for which the following table applied to primary schools:-

| | | PRIMARY SCHOOLS | | | | | |
|----------------|-------------|---|----------------|--------------|---------------------------|----------------|--|
| Size of School | Medium | Enrolment at Individual Schools | No. of Schools | Enrolment | School required in Sample | Random Numbers | |
| 0-99 | A E D | 55 | 1 | 55 | | | |
| 100-299 | A | 103, 159 | 2 | 242 | 2 | 4,2 | |
| | E | 296, <u>291</u> (260, 187), <u>152</u> | 5 | 1383 | | | |
| | D | 197, 262 | 1 | 262 | | | |
| 300-499 | A | 436, <u>473</u> , <u>376</u> , 327, 493 | 5 | 2105 | 2 | 3,2 | |
| | E | | | | | | |
| | D | | | | | | |
| 500 + | A E D | <u>733</u> | 1 | 733 | 1 | | |
| Total | | | A E D | 3 10 2 | 975 3488 317 | 1 4 | |

The Marist Brothers school and the Good Hope Seminary, with enrolment 260 and 187 respectively were grouped together on the understanding that if either were selected the other would automatically also be included. So that there should not be a double chance of selecting these schools it was assumed that there were five, and not six, schools in the 100-299 size group.

It had already been determined that six English medium schools were required from this stratum. From Table VI it was gauged that roughly twice as many testees should be drawn from primary schools as from high schools. Therefore it was decided to select 4 primary schools from this stratum. In proportion to enrolment this mean 1.6 schools from group 100-299 and 2.4 from group 300-499. That is, two schools were selected from the five of size 100-299. The first two numbers less than 5 encountered in the tables of random numbers were 4 and 2. Hence the choice of the two schools encircled.

In the case of schools with enrolment 300-499 the random numbers drawn were 3 and 2, and the schools selected were those with enrolment 473 and 376. High Schools enrolment was expressed as primary & secondary where the enrolment in Std. 6 on primary classes was known. As explained above an Afrikaans medium school was also selected.

The other strata were dealt with in like manner, until the entire sample of schools had been made. The Provincial Education Departments were asked to submit the latest age-standard distributions in respect of each of the selected schools.

The Size of Sample Required for each age.

It still remained to determine how many pupils of each age should be tested in each of the selected schools. This problem was complicated by the fact that in some places Std. VI is in the primary school and in others in the high school. Also there are schools which have primary as well as secondary pupils. To meet this difficulty Table VIII was drawn up for each province showing the number of pupils of each age from 8-18 to be found in Stds I-V; Std. VI; Std. VII and VIII; and Stds. IX and X.

TABLE VIII (a)

Cape Province Distribution of pupils of each age from 8-18 in different groups of standards.

| Age | | Stds I-V | Std VI | Stds VII & VIII | Stds IX & X | Total |
|-----|-------------|----------------|--------------|-----------------|--------------|----------------|
| 8 | Number % | 12,620 100 | | | | 12,620 100 |
| 9 | Number % | 15,931 100 | | | | 15,931 100 |
| 10 | Number % | 16,435 100 | 1 | | | 16,436 100 |
| 11 | Number % | 16,190 99.3 | 119 0.7 | | | 16,309 100 |
| 12 | Number % | 13,549 82.8 | 2634 16.1 | 178 1.1 | | 16,361 100. |
| 13 | Number % | 7,100 44.1 | 6306 39.2 | 2692 16.7 | 2 | 16,100 100 |
| 14 | Number % | 3,227 21.0 | 4087 26.6 | 7902 51.5 | 121 0.9 | 15,337 100 |
| 15 | Number % | 1,461 11.1 | 1827 13.9 | 8001 60.9 | 1847 14.1 | 13,136 100 |
| 16 | Number % | 332 4.1 | 477 5.8 | 3391 41.7 | 3938 48.4 | 8,138 100 |
| 17 | Number % | 60 1.7 | 72 2.0 | 792 22.0 | 2673 74.3 | 3597 100 |
| 18 | Number % | 10 1.1 | 7 0.7 | 112 12.0 | 807 86.2 | 936 100 |

Source: Age-Standard Distribution at June 1952, Bureau of Census and Statistics.

TABLE VIII(b)

Natal Distribution of pupils of each age from 8-18 in different groups of standards.

| Age | Stds I-V | Std VI | Stds VII & VIII | Stds IX & X | Total |
|----------------|--------------|--------------|-----------------|-------------|-------------|
| 8 Number % | 4013 100 | | | | 4013 100 |
| 9 Number % | 4132 100 | | | | 4132 100 |
| 10 Number % | 4180 100 | 1 | | | 4181 100 |
| 11 Number % | 4001 98.6 | 58 1.4 | | | 4059 100 |
| 12 Number % | 3153 76.2 | 940 22.7 | 46 1.1 | | 4139 100 |
| 13 Number % | 1264 32.9 | 1776 46.2 | 805 20.9 | | 3845 100 |
| 14 Number % | 516 14.9 | 849 24.6 | 2059 59.6 | 29 0.9 | 3453 100 |
| 15 Number % | 179 6.6 | 343 12.7 | 1726 63.9 | 454 16.8 | 2702 100 |
| 16 Number % | 39 2.6 | 74 4.9 | 606 40.1 | 793 52.4 | 1512 100 |
| 17 Number % | 10 1.5 | 4 0.6 | 112 16.4 | 556 81.5 | 682 100 |
| 18 Number % | 7 4.5 | 0 0 | 11 7.0 | 139 88.5 | 157 100 |

Source: Age-Standard distribution at June 1952, Bureau of Census and Statistics.

TABLE VIII (c)

Orange Free State: Distribution of pupils of each age from 8-18 in different groups of standards.

| Age | Stds I-V | Std VI | Stds VII & VIII | Stds IX & X | Total |
|----------------|--------------|--------------|-----------------|-------------|-------------|
| 8 Number % | 3700 100 | | | | 3700 100 |
| 9 Number % | 4657 100 | | | | 4657 100 |
| 10 Number % | 4683 100 | | | | 4683 100 |
| 11 Number % | 4553 99.9 | 5 0.1 | | | 4558 100 |
| 12 Number % | 4212 92.3 | 334 7.5 | 7 0.2 | | 4563 100 |
| 13 Number % | 2236 49.6 | 1898 42.1 | 377 8.3 | | 4511 100 |
| 14 Number % | 934 21.9 | 1392 32.7 | 1927 45.2 | 8 0.2 | 4261 100 |
| 15 Number % | 381 10.2 | 604 16.1 | 2462 65.7 | 301 8.0 | 3748 100 |
| 16 Number % | 85 3.7 | 177 7.6 | 1100 47.3 | 964 41.4 | 2326 100 |
| 17 Number % | 18 1.4 | 19 1.5 | 262 21.0 | 950 76.1 | 1249 100 |
| 18 Number % | 2 0.7 | - - | 45 16.0 | 234 83.3 | 281 100 |

TABLE VIII(d)

Transvaal Distribution of pupils of each age from 8-18 in different groups of standards.

| Age | (1) | | | Std IX & X | Total |
|----------------|----------------|----------------|-----------------|--------------|---------------|
| | Stds I-V | Std.VI | Stds VII & VIII | | |
| 8 Number % | 19,507 100 | 1 | | | 19,508 100 |
| 9 Number % | 23,572 100 | | | | 23,572 100 |
| 10 Number % | 23,509 100 | | | | 23,509 100 |
| 11 Number % | 22,358 99.7 | 77 0.3 | | | 22,435 100 |
| 12 Number % | 20,143 88.6 | 2479 10.9 | 107 0.5 | | 22,729 100 |
| 13 Number % | 8006 37.8 | 10,929 51.6 | 2254 10.6 | 1 | 21,190 100 |
| 14 Number % | 1314 6.7 | 8,328 42.3 | 9947 50.5 | 91 0.5 | 19,680 100 |
| 15 Number % | 390 2.3 | 2974 17.8 | 11,967 71.5 | 1395 8.4 | 16,726 100 |
| 16 Number % | 117 1.3 | 644 7.2 | 4699 52.8 | 3437 38.7 | 8897 100 |
| 17 Number % | 36 1.1 | 46 1.3 | 656 19.1 | 2694 78.5 | 3432 100 |
| 18 Number % | 10 1.2 | 4 0.5 | 58 7.2 | 739 91.1 | 811 100 |

(1) The adjustment class was included with Std VI.

Table IX was next drawn up for each province.

TABLE IX.(a).

Cape Province. The number of Afrikaans and English testees of each age to be drawn from each group of standards, and the numbers to be drawn from Afrikaans Medium, English Medium and Double Medium schools.

| | Stds. I - V | | Std. VI | | Stds. VII & VIII | | Stds. IX & X | | Total | |
|----|-------------|------|---------|-----|------------------|-----|--------------|-----|-----------|---------|
| | A | E | A | E | A | E | A | E | Afrikaans | English |
| 8 | 352 | 261 | | | | | | | 352 | 261 |
| 9 | 352 | 261 | | | | | | | 352 | 261 |
| 10 | 699 | 522 | | | | | | | 699 | 522 |
| 11 | 694 | 518 | 5 | 4 | | | | | 699 | 522 |
| 12 | 291 | 216 | 57 | 42 | 4 | 3 | | | 352 | 261 |
| 13 | 308 | 230 | 274 | 205 | 117 | 87 | | | 699 | 522 |
| 14 | 127 | 97 | 161 | 123 | 313 | 237 | 6 | 4 | 607 | 461 |
| 15 | 34 | 26 | 43 | 33 | 186 | 144 | 43 | 34 | 306 | 237 |
| 16 | 10 | 8 | 15 | 12 | 105 | 83 | 121 | 96 | 251 | 199 |
| 17 | 3 | 2 | 3 | 3 | 38 | 30 | 130 | 103 | 174 | 138 |
| 18 | 1 | 1 | 1 | 0 | 9 | 7 | 66 | 47 | 77 | 55 |
| T | 2871 | 2142 | 559 | 422 | 772 | 591 | 366 | 284 | 4568 | 3439 |
| AM | 1685 | | 328 | | 453 | | 215 | | 2681 | |
| EM | | 1392 | | 274 | | 384 | | 185 | | 2235 |
| DM | 1186 | 750 | 231 | 148 | 319 | 207 | 151 | 99 | 1887 | 1204 |

TABLE IX (b).

Natal. The number of Afrikaans and English testees of each age to be drawn from each group of standards, and the numbers to be drawn from Afrikaans Medium, English Medium and Double Medium schools.

| Age | Stds. I-V | | Std. VI | | Stds. VII & VIII | | Stds. IX & X | | Total | |
|-----|-----------|------|---------|-----|------------------|-----|--------------|-----|-----------|---------|
| | A | E | A | E | A | E | A | E | Afrikaans | English |
| 8 | 28 | 155 | | | | | | | 28 | 155 |
| 9 | 28 | 155 | | | | | | | 28 | 155 |
| 10 | 56 | 310 | | | | | | | 56 | 310 |
| 11 | 55 | 306 | 1 | 4 | | | | | 56 | 310 |
| 12 | 21 | 118 | 6 | 35 | 1 | 2 | | | 28 | 155 |
| 13 | 18 | 102 | 26 | 143 | 12 | 65 | | | 56 | 310 |
| 14 | 7 | 41 | 12 | 67 | 29 | 163 | 1 | 3 | 49 | 274 |
| 15 | 2 | 9 | 3 | 18 | 15 | 90 | 4 | 24 | 24 | 141 |
| 16 | 1 | 3 | 1 | 6 | 8 | 47 | 10 | 62 | 20 | 118 |
| 17 | - | 1 | - | 1 | 2 | 13 | 12 | 67 | 14 | 82 |
| 18 | - | 2 | - | - | 1 | 2 | 5 | 28 | 6 | 32 |
| T | 216 | 1202 | 49 | 274 | 68 | 382 | 32 | 184 | 365 | 2042 |
| AM | 60 | | 14 | | 19 | | 9 | | 102 | |
| EM | | 855 | | 195 | | 272 | | 131 | | 1453 |
| DM | 156 | 347 | 35 | 79 | 49 | 110 | 23 | 53 | 263 | 589 |

TABLE IX (c)

Orange Free State. The number of Afrikaans and English testees of each age to be drawn from each group of standards, and the numbers to be drawn from Afrikaans Medium, English Medium and Double Medium schools.

| Age | Stds. I-V | | Std. VI. | | Stds.VII & VIII | | Stds.IX & X | | Total | |
|-----|-----------|-----|----------|----|-----------------|----|-------------|----|-----------|---------|
| | A. | E | A | E | A | E | A | E | Afrikaans | English |
| 8 | 134 | 27 | | | | | | | 134 | 27 |
| 9 | 134 | 27 | | | | | | | 134 | 27 |
| 10 | 266 | 54 | | | | | | | 266 | 54 |
| 11 | 266 | 54 | | | | | | | 266 | 54 |
| 12 | 124 | 25 | 10 | 2 | | | | | 134 | 27 |
| 13 | 132 | 27 | 112 | 23 | 22 | 4 | | | 266 | 54 |
| 14 | 50 | 11 | 75 | 16 | 104 | 21 | 1 | | 230 | 48 |
| 15 | 12 | 2 | 19 | 4 | 76 | 16 | 9 | 2 | 116 | 24 |
| 16 | 4 | 1 | 7 | 2 | 45 | 10 | 39 | 8 | 95 | 21 |
| 17 | 1 | - | 1 | - | 14 | 3 | 50 | 11 | 66 | 14 |
| 18 | - | - | - | - | 5 | 1 | 24 | 5 | 29 | 6 |
| T | 1123 | 228 | 224 | 47 | 266 | 55 | 123 | 26 | 1736 | 356 |
| AM | 816 | | 163 | | 193 | | 90 | | 1262 | |
| EM | | 114 | | 23 | | 27 | | 13 | | 177 |
| DM | 307 | 114 | 61 | 24 | 73 | 28 | 33 | 13 | 474 | 179 |

TABLE IX (d)

Transvaal. The number of Afrikaans and English testees of each age to be drawn from each group of standards, and the numbers to be drawn from Afrikaans Medium, English Medium and Double Medium schools.

| Age. | Stds. I-V | | Std. VI. | | Stds.VII & VIII | | Stds.IX & X | | Total | |
|------|-----------|------|----------|-----|-----------------|-----|-------------|-----|-----------|---------|
| | A | E | A | E | A | E | A | E | Afrikaans | English |
| 8 | 491 | 341 | | | | | | | 491 | 341 |
| 9 | 491 | 341 | | | | | | | 491 | 341 |
| 10 | 977 | 683 | | | | | | | 977 | 683 |
| 11 | 974 | 681 | 3 | 2 | | | | | 977 | 683 |
| 12 | 435 | 302 | 54 | 37 | 2 | 2 | | | 491 | 341 |
| 13 | 369 | 258 | 504 | 352 | 104 | 73 | | | 977 | 683 |
| 14 | 57 | 40 | 359 | 254 | 429 | 304 | 4 | 3 | 849 | 601 |
| 15 | 10 | 7 | 76 | 55 | 306 | 222 | 36 | 26 | 428 | 316 |
| 16 | 5 | 3 | 25 | 19 | 185 | 137 | 136 | 101 | 351 | 260 |
| 17 | 3 | 2 | 3 | 2 | 46 | 34 | 190 | 141 | 242 | 179 |
| 18 | 1 | 1 | 1 | - | 8 | 5 | 98 | 65 | 108 | 71 |
| T | 3813 | 2659 | 1025 | 721 | 1080 | 777 | 464 | 336 | 6382 | 4493 |
| AM | 2898 | | 779 | | 821 | | 352 | | 4850 | |
| EM | | 2127 | | 577 | | 621 | | 269 | | 3594 |
| DM | 915 | 532 | 246 | 144 | 259 | 156 | 112 | 67 | 1532 | 899 |

The procedure for deriving Table IX(a) was as follows: In Table VII it was determined that 4568 Afrikaans testees were required from the Cape. This number was multiplied by the

entries in the third column of Table VI to determine the size of sample required for each age, and the results were entered in column 10 of Table IX(a). The number of testees of each age thus determined was multiplied by the relevant row of percentages in Table VIII(a) and entered in the appropriate position in Table IX(a). The same procedure was adopted in determining how many of the 3439 English testees should be drawn from each age and from each group of standards. The columns were then totalled. Each total was multiplied by the percentages of pupils in single or double medium schools (referred to in p D) to determine the total numbers of testees in each group of standards required from Afrikaans medium, English medium and Afrikaans/English medium schools.

In Table X the numbers in the upper portion of Table IX are expressed as percentages for the following groups of standards: Stds. I-V; Std.VI; Stds. I-VI; Stds. VII & VIII and Stds. VII - X,

TABLE X(a)(i)

The percentage of Afrikaans testees to be drawn from each group of standards. (a) in the Cape Province (i) Afrikaans.

| Age. | Std. I-V % | Std.VI % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII- X % |
|------|---------------|-------------|-----------------|--------------------------|-------------------|
| 8 | 12.3 | | 10.3 | | |
| 9 | 12.3 | | 10.3 | | |
| 10 | 24.3 | | 20.4 | | |
| 11 | 24.2 | 0.9 | 20.4 | | |
| 12 | 10.2 | 10.2 | 10.1 | 0.5 | 0.4 |
| 13 | 10.7 | 49.0 | 17.0 | 15.2 | 10.3 |
| 14 | 4.4 | 28.8 | 8.4 | 40.5 | 28.0 |
| 15 | 1.2 | 7.7 | 2.2 | 24.1 | 20.1 |
| 16 | 0.3 | 2.7 | 0.7 | 13.6 | 19.8 |
| 17 | 0.1 | 0.5 | 0.2 | 4.9 | 14.8 |
| 18 | - | 0.2 | - | 1.2 | 6.6 |
| T | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(a)(ii)

The percentage of English testees to be drawn from each group of standards. (a) in the Cape Province, (ii) English.

| Age. | Stds. I-V % | Std.VI % | Stds. I-VI % | Stds. VII & VIII. % | Stds.VII - X % |
|------|----------------|-------------|-----------------|---------------------------|-------------------|
| 8 | 12.2 | | 10.2 | | |
| 9 | 12.2 | | 10.2 | | |
| 10 | 24.4 | | 20.3 | | |
| 11 | 24.2 | 0.9 | 20.3 | | |
| 12 | 10.1 | 10.0 | 10.1 | 0.5 | 0.3 |
| 13 | 10.7 | 48.6 | 17.0 | 14.7 | 9.9 |
| 14 | 4.5 | 29.2 | 8.6 | 40.1 | 27.6 |
| 15 | 1.2 | 7.8 | 2.3 | 24.4 | 20.3 |
| 16 | 0.4 | 2.8 | 0.8 | 14.0 | 20.5 |
| 17 | 0.1 | 0.7 | 0.2 | 5.1 | 15.2 |
| 18 | 0.0 | 0.0 | | 1.2 | 6.2 |
| T | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(b)(i)

The percentage of Afrikaans testees to be drawn from each group of standards (b) in Natal, (i) Afrikaans.

| Age. | Stds. I-V % | Std. VI % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII-X % |
|------|----------------|--------------|-----------------|--------------------------|------------------|
| 8 | 13.0 | | 10.6 | | |
| 9 | 13.0 | | 10.6 | | |
| 10 | 25.9 | | 21.1 | | |
| 11 | 25.5 | 2.0 | 21.1 | | |
| 12 | 9.7 | 12.2 | 10.2 | 1.5 | 1.0 |
| 13 | 8.3 | 53.2 | 16.6 | 17.6 | 12.0 |
| 14 | 3.2 | 24.5 | 7.2 | 42.6 | 30.0 |
| 15 | 0.9 | 6.1 | 1.8 | 22.1 | 19.0 |
| 16 | 0.5 | 2.0 | 0.8 | 11.8 | 18.0 |
| 17 | 0.0 | 0.0 | | 2.9 | 14.0 |
| 18 | 0.0 | 0.0 | | 1.5 | 6.0 |
| T | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(b)(ii)

The percentage of English testees to be drawn from each group of standards (b) in Natal (ii) English.

| Age. | Std. I-V % | Std. VI % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII-X % |
|------|---------------|--------------|-----------------|--------------------------|------------------|
| 8 | 12.9 | | 10.5 | | |
| 9 | 12.9 | | 10.5 | | |
| 10 | 25.8 | | 21.0 | | |
| 11 | 25.5 | 1.5 | 21.0 | | |
| 12 | 9.8 | 12.8 | 10.4 | 0.5 | 0.4 |
| 13 | 8.5 | 52.2 | 16.7 | 17.0 | 11.5 |
| 14 | 3.4 | 24.4 | 7.3 | 42.7 | 29.3 |
| 15 | 0.7 | 6.6 | 1.8 | 23.6 | 20.1 |
| 16 | 0.3 | 2.2 | 0.6 | 12.3 | 19.3 |
| 17 | 0.1 | 0.3 | 0.1 | 3.4 | 14.1 |
| 18 | 0.1 | | 0.1 | 0.5 | 5.3 |
| T | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(c)(i)

The percentage of Afrikaans testees to be drawn from each group of standards, (c) in the Orange Free State, (i) Afrikaans.

| Age | Stds. I-V % | Std. VI. % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII-X % |
|-----|----------------|---------------|-----------------|--------------------------|------------------|
| 8 | 11.9 | | 9.9 | | |
| 9 | 11.9 | | 9.9 | | |
| 10 | 23.7 | | 19.8 | | |
| 11 | 23.7 | | 19.8 | | |
| 12 | 11.0 | 4.5 | 9.9 | | |
| 13 | 11.7 | 50.0 | 18.1 | 8.3 | 5.6 |
| 14 | 4.5 | 33.5 | 9.3 | 39.0 | 27.0 |
| 15 | 1.1 | 8.5 | 2.3 | 28.6 | 21.8 |
| 16 | 0.4 | 3.1 | 0.8 | 16.9 | 21.6 |
| 17 | 0.1 | 0.4 | 0.2 | 5.3 | 16.5 |
| 18 | | | | 1.9 | 7.5 |
| T | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(c)(ii)

The percentages of English testees to be drawn from each group of standards (c) in the Orange Free State, (ii) English.

| Age | Stds. I-V % | Std. VI % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII-X % |
|-----|----------------|--------------|-----------------|--------------------------|------------------|
| 8 | 11.8 | | 9.8 | | |
| 9 | 11.8 | | 9.8 | | |
| 10 | 23.7 | | 19.7 | | |
| 11 | 23.7 | | 19.7 | | |
| 12 | 11.0 | 4.3 | 9.8 | | |
| 13 | 11.8 | 48.9 | 18.1 | 7.3 | 4.9 |
| 14 | 4.8 | 34.0 | 9.8 | 38.1 | 25.9 |
| 15 | 0.9 | 8.5 | 2.2 | 29.1 | 22.2 |
| 16 | 0.5 | 4.3 | 1.1 | 18.2 | 22.2 |
| 17 | | | | 5.5 | 17.4 |
| 18 | | | | 1.8 | 7.4 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(d)(i)

The percentage of Afrikaans testees to be drawn from each group of standards (d) in the Transvaal, (i) Afrikaans.

| Age. | Stds. I-V % | Std. VI % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII-X. % |
|------|----------------|--------------|-----------------|--------------------------|-------------------|
| 8. | 12.9 | | 10.2 | | |
| 9 | 12.9 | | 10.2 | | |
| 10 | 25.6 | | 20.2 | | |
| 11 | 25.5 | 0.3 | 20.2 | | |
| 12 | 11.4 | 5.3 | 10.1 | 0.2 | 0.1 |
| 13 | 9.7 | 49.2 | 18.0 | 9.6 | 6.7 |
| 14 | 1.5 | 35.0 | 8.6 | 39.8 | 28.0 |
| 15 | 0.3 | 7.4 | 1.8 | 28.3 | 22.2 |
| 16 | 0.1 | 2.4 | 0.6 | 17.1 | 20.8 |
| 17 | 0.1 | 0.3 | 0.1 | 4.3 | 15.3 |
| 18 | | 0.1 | | 0.7 | 6.9 |
| T. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE X(d)(ii)

The percentage of English testees to be drawn from each group of standards (d) in the Transvaal, (ii) English.

| Age. | Stds. I-V % | Std. VI % | Stds. I-VI % | Stds. VII & VIII % | Stds. VII-X % |
|------|----------------|--------------|-----------------|--------------------------|------------------|
| 8 | 12.8 | | 10.1 | | |
| 9 | 12.8 | | 10.1 | | |
| 10 | 25.7 | | 20.2 | | |
| 11 | 25.6 | 0.3 | 20.2 | | |
| 12 | 11.4 | 5.1 | 10.0 | 0.3 | 0.2 |
| 13 | 9.7 | 48.8 | 18.0 | 9.4 | 6.5 |
| 14 | 1.5 | 35.3 | 8.8 | 39.1 | 27.6 |
| 15 | 0.3 | 7.6 | 1.8 | 28.6 | 22.3 |
| 16 | 0.1 | 2.6 | 0.7 | 17.6 | 21.4 |
| 17 | 0.1 | 0.3 | 0.1 | 4.4 | 15.7 |
| 18 | 0.0 | 0.0 | 0.0 | 0.6 | 6.3 |
| T. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Regarding Std. VI as a primary class, the numbers of primary and secondary pupils to be drawn from schools of each medium was derived separately for each province from Table IX. The number of primary and secondary pupils to draw from each stratum was determined in direct proportion to enrolment in these classes in the population.

DETERMINATION OF SIZE OF SAMPLE TO BE DRAWN FROM EACH OF THE SELECTED SCHOOLS:

It now remained to apportion these numbers to the selected schools in each stratum. This was done in proportion to the primary and secondary enrolment in these schools. Separate tables were drawn up for the Afrikaans and English samples.

Using the Cape Province as example once more:- The Afrikaans sample in stratum II was drawn from two Afrikaans Medium and two Afrikaans/English Medium Schools. The total primary enrolment of the two double medium schools was 255 and 428 respectively. In the province as a whole 72.4% of the total primary enrolment was in the standards under consideration, namely Stds. I - VI (inclusive). It was estimated, therefore, that the enrolment in these standards in these two schools would be 72.4% of 255 and of 428, i.e. 185 and 310. The first school thus accounted for 45.13% of the combined enrolment in the primary classes from which the sample was to be drawn. It had been determined that 48 Afrikaans testees should be selected from primary classes in double medium schools. Dividing 48 in the ratio 45.13 : 54.87 it was decided to select 22 testees from the school with the smaller enrolment of primary pupils and 26 from the school with the larger enrolment. Only the former school had high school pupils, so the entire sample required, 18, was to be drawn from this school, i.e. the total sample to be drawn from this school was to be 22 + 18 = 40.

The proportions derived in Table X were applied in determining how many testees of each age to draw from primary and secondary classes in each school, equal numbers of boys and girls being required from each stratum.

A number of amendments had to be made. For instance, according to the calculations 28 pupils were to be drawn from the Jan van Riebeeck High School and 43 from the Jan van Riebeeck Primary School. Multiplying 28 by the percentages in the last column of Table X (a) Afr., and 43 by the percentages in columns 2 and 3 of the same table the following theoretical distribution of testees was obtained:

| Age. | Jan van Riebeeck High School. | Jan van Riebeeck Primary School. |
|------|----------------------------------|-------------------------------------|
| 8 | | 4 |
| 9 | | 4 |
| 10 | | 9 |
| 11 | | 8 |
| 12 | | 5 |
| 13 | 3 | 8 |
| 14 | 8 | 4 |
| 15 | 6 | 1 |
| 16 | 5 | |
| 17 | 4 | |
| 18 | <u>2</u> | |
| | <u>28</u> | <u>43</u> |

Actually, however, there was no 15 year-old in the primary school, so the sample from the high school was increased by 1, and 7, not 6, fifteen year-olds were tested, and the sample

from the primary school was reduced to 42.

A worse situation arose in Stratum IV from which the Retreat High School was drawn. According to the sampling framework, this school catered for 453 pupils in Stds. I to VI and 215 in secondary classes. It had in the interim, however, been separated into two schools, with the consequence that the 37 pupils aged 11 and under required from this sample could not be obtained from the High School. There would not have been time to get the age-standard distribution from the new primary school to include it in the sample. The deficit was made up by testing extra pupils in the Ysterplaat School in Stratum II. This was also a Double Medium school. The required number of 12 and 13 year olds was not available in the Lansdowne High School representing stratum III, so five additional pupils to make up the shortfall were drawn from the other double medium school in stratum II, viz. the Maitland High School. The latter school could not, however, produce an 18 year-old, but one was obtainable at Lansdowne. The combined adjustment resulted in increasing the Maitland sample by 4 and reducing the Lansdowne sample by a like amount.

As far as possible adjustments were confined within the limits of the strata, but the theoretical samples had to be considerably altered if the required number of testees of each age were to be obtained from the schools selected. It was impossible to get the required numbers of English-speaking pupils from Afrikaans/English medium schools in the eastern and northern Transvaal.

An equal division was made between the sexes so that, as far as possible, equal numbers of boys and girls were drawn from each stratum.

A list was prepared for each school in the sample indicating the number of Afrikaans and English boys and girls of each age to do the Junior, Intermediate and Senior tests. These were issued to testers with detailed instructions as to how to select the testees.

B. PRIVATE SCHOOLS.

Reference to Table VII reveals that it was desired to test 2,846 pupils from 43 private schools. The schools were distributed between the provinces in direct proportion to the total number of private schools as shown below:-

| Province. | Number of Private Schools. | Number of Schools in Sample. |
|-------------------|----------------------------|------------------------------|
| Cape | 120 | 18 |
| Natal | 38 | 6 |
| Orange Free State | 3 | 0 |
| Transvaal | <u>115</u> | <u>18</u> |
| Total | <u>276</u> | <u>42</u> |

Although pupils in State-Aided schools had been included in the enrolment figures in Table I, these schools were by mistake not included in the lists of schools from which the Transvaal Provincial sample was selected. To correct for this it was decided to include these schools in the list of

private schools and to select 20 instead of 18 private schools from the Transvaal.

In Table XI the 2,846 testees required are distributed between the Cape, Natal and Transvaal in proportion to enrolment. The resulting numbers required from each province were multiplied by the percentages in column 4 of Table VI to give the size of sample of each age.

TABLE XI.

PROVINCIAL DISTRIBUTION OF ENROLMENT IN, AND THE SAMPLE TO BE DRAWN FROM, PRIVATE SCHOOLS.

| Province. | Total Enrolment (a) | Sample Required |
|--------------|---------------------|-----------------|
| Cape | 15,315 | 1,110 |
| Natal | 3,794 | 285 |
| Transvaal | 19,926 | 1,451 |
| Total | 39,035 | 2,846 |

(a) Source: Bureau of Census and Statistics.

Note: (1) Pupils in Nursery Schools and Kindergartens have been excluded.

(2) The Transvaal figures include 355 pupils in the Orange Free State.

TABLE XII.

AGE DISTRIBUTION OF SAMPLE REQUIRED FROM PRIVATE SCHOOLS.

| | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | Total |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|--------------|
| Cape | 84 | 84 | 169 | 169 | 84 | 169 | 149 | 76 | 64 | 44 | 18 | 1,110 |
| Natal | 22 | 22 | 43 | 43 | 22 | 43 | 38 | 20 | 16 | 11 | 5 | 285 |
| Transvaal | 110 | 110 | 220 | 220 | 110 | 220 | 194 | 100 | 85 | 59 | 23 | 1,451 |
| Total | 216 | 216 | 432 | 432 | 216 | 432 | 381 | 196 | 165 | 114 | 46 | 2,846 |

The method of selecting the schools in the Cape and Natal was similar to that adopted with provincial schools.

As the Transvaal does not publish the enrolment figures of individual schools, the best that could be done was to select schools from the list by drawing random numbers.

The bracketing together of boys' and girls' schools resulted in 48, instead of 43, schools being selected. The schools were approached and asked to furnish age-standard distributions and to co-operate with the testing programme. A number fell out. Some failed to reply to the circular,

one had closed down, one turned out to be a correspondence college and another a school for Non-Europeans. All testing in institutions other than provincial schools had to be undertaken by the Bureau's staff, and schools off the beaten track were rejected. In only one instance was a school replaced. (On arrival at the Convent in King William's Town the tester found the school disorganised as a result of a fire. He therefore made arrangements to test a group in the local Convent when he was testing other institutions in Grahamstown. This convent was actually already in the sample as it had been listed with the provincial schools.

In the end only 30 schools from which to select a sample of private school pupils were retained. The consequence was that the individual samples had to be large and that not all the testees of the required ages could be found.

The age distribution required from each school was determined from Table XIII.

Lists like those prepared for provincial schools were supplied to testers.

OTHER EDUCATIONAL INSTITUTIONS.

By the time that the sample from provincial and private schools had been selected more information had been received from independent colleges, but the size of sample determined in Table VI was not altered.

SELECTION OF INSTITUTIONS.

Universities.

It was decided to select one of the larger and one of the smaller universities for each language group. The selection was made by drawing random numbers and choice fell to Stellenbosch, Potchefstroom, Witwatersrand and Rhodes.

Teacher Training Colleges.

Two Afrikaans and two English colleges were selected by drawing random numbers. Those chosen were Pretoria, Wellington, Grahamstown and Johannesburg.

Nursing Colleges.

Three Afrikaans and two English colleges were chosen in the same way. (In the end the "Nasionale Hospitaal", Bloemfontein, was left out).

Technical High Schools.

The Pietersburg Technical High School was included as it was the only one with female students. The second school (at Worcester) was selected by having recourse to tables of random numbers.

Schools of Industries.

It was decided to include four Afrikaans and one English school. As the number of eighteen year-olds at King William's Town was inadequate, the choice of English school

fell to the only remaining one, viz. the school at Queenstown. Normal Afrikaans speaking boys could also be obtained from Queenstown, so one of the schools for sub-normal boys was selected at random - Meadows. One school for normal and one school for sub-normal girls was chosen by random numbers to complete the Afrikaans sample. The schools chosen were at Tempe and Oudtshoorn.

Housecraft and Commercial High Schools.

One of each type of school was selected by drawing random numbers - the schools at Christiana and Paarl.

State-Aided Vocational Schools.

As it was anticipated that there would be difficulty in getting the required number of 18 year-olds, the Abraham Kriel school, with no pupils of this age, was left out of account and one school - that at Bethlehem - chosen at random from the remainder.

Reformatories.

The original idea was to include both reformatories, but as it appeared that boys were more urgently required than girls the school at Constantia only was included.

Special schools for the physically handicapped.

No one school of the three at Kimberley was felt to be representative of them all, but, as the schools form an entity, it was decided to select the sample from the combined enrolment of the three.

Training Institutions under the Departments of Agriculture, Defence, Forestry, Mines and Railways.

The Air Force Station at Lyttelton was chosen to represent these institutions from which few replies had been received. A reasonably sized group of 16, a larger sample than the actual enrolment of the Station warranted, was tested.

A complete list of schools and institutions testes is contained in Annexure I.

Equal numbers of boys and girls had been selected from the schools so, if the required sample were to be obtained, it was necessary to draw equal numbers of boys and girls from the other distributions also.

The proportion of pupils of each sex in the different types of institution varied so greatly that it was considered best to make distributions of enrolment at each age level by sex as well as by language group, and to distribute the total numbers required for each between the institutions in proportion to enrolment. This was done in Table XIV.

By this time sufficient information had been received to suggest that the assumption that the ratio of Afrikaans to English pupils in Technical Colleges was the same as in the schools was not justified. Before drawing up Table XIV therefore, a second estimate was made of the number of students of each language in these institutions.

TABLE XIV.

ENROLMENT OF PUPILS AGED 14-18 IN DIFFERENT TYPES OF EDUCATIONAL INSTITUTION, AND THE SIZE OF SAMPLE REQUIRED FROM EACH.

| | Provincial and Private Schools | | U.E.D. Schools | | Technical Colleges | | Universities | | Other Colleges | | Total |
|-------------------------|--------------------------------|--------|----------------|--------|--------------------|--------|--------------|--------|----------------|--------|--------|
| | No. | Sample | No. | Sample | No. | Sample | No. | Sample | No. | Sample | Sample |
| AFRIKAANS MALE | | | | | | | | | | | |
| 14 | | 869 | 342 | 50 | 558 | 81 | | | | | 1000 |
| 15 | | 440 | 918 | 35 | 652 | 25 | | | | | 500 |
| 16 | | 358 | 1076 | 55 | 1643 | 85 | 14 | 1 | 21 | 1 | 500 |
| 17 | | 248 | 832 | 63 | 1997 | 150 | 382 | 29 | 134 | 10 | 500 |
| 18 | | 111 | 426 | 42 | 2238 | 229 | 807 | 82 | 347 | 36 | 500 |
| T | | 2026 | 3584 | 245 | 7088 | 570 | 1203 | 112 | 502 | 47 | 3000 |
| AFRIKAANS FEMALE | | | | | | | | | | | |
| 14 | | 859 | 200 | 74 | 152 | 57 | | | | | 1000 |
| 15 | | 440 | 529 | 39 | 289 | 21 | 1 | | | | 500 |
| 16 | | 358 | 759 | 80 | 534 | 56 | 15 | 2 | 36 | 4 | 500 |
| 17 | | 248 | 629 | 82 | 593 | 77 | 239 | 31 | 474 | 62 | 500 |
| 18 | | 111 | 274 | 115 | 521 | 85 | 511 | 83 | 1075 | 176 | 500 |
| T | | 2026 | 2391 | 320 | 2089 | 296 | 766 | 116 | 1585 | 242 | 3000 |
| ENGLISH MALE | | | | | | | | | | | |
| 14 | | 882 | 17 | 2 | 920 | 116 | | | | | 1000 |
| 15 | | 453 | 55 | 2 | 1163 | 43 | 44 | 2 | | | 500 |
| 16 | | 386 | 103 | 4 | 2687 | 109 | | 2 | 9 | 0 | 500 |
| 17 | | 262 | 69 | 4 | 3099 | 200 | 488 | 32 | 26 | 2 | 500 |
| 18 | | 105 | 52 | 5 | 3422 | 294 | 1088 | 93 | 36 | 3 | 500 |
| T | | 2088 | 298 | 17 | 11291 | 762 | 1676 | 129 | 64 | 5 | 3000 |
| ENGLISH FEMALE | | | | | | | | | | | |
| 14 | | 882 | 8 | 3 | 920 | 115 | | | | | 1000 |
| 15 | | 453 | 13 | 1 | 577 | 31 | 268 | 15 | | | 500 |
| 16 | | 386 | 22 | 2 | 955 | 103 | 53 | 6 | 24 | 3 | 500 |
| 17 | | 262 | 13 | 2 | 1002 | 148 | 373 | 55 | 217 | 33 | 500 |
| 18 | | 105 | 10 | 2 | 821 | 180 | 516 | 114 | 450 | 99 | 500 |
| T | | 2088 | 64 | 10 | 3675 | 577 | 1210 | 190 | 691 | 135 | 3000 |
| TOTAL SAMPLE | | | | | | | | | | | |
| | | 26227 | | 592 | | 2205 | | 547 | | 429 | |

Exact information had been received as to the numbers of Afrikaans and English students at Durban, Bloemfontein and Pretoria. In 1951 a survey of pupils in Technical Colleges in Natal and the Transvaal was conducted by the Bureau. Information referring to 1895 out of a total of 4,000 full-time students as the Reef revealed that 37% of students were Afrikaans-speaking. It was assumed that this proportion applied throughout. Information received during the preliminary application of the New SAGT set the proportions at Pietermaritzburg and Cape Town at 20% and 33% Afrikaans, respectively. The Cape Town proportion was based on 386 full-time students out of a total of 700. No previous information had been collected for Port Elizabeth, East London and Kimberley. The proportion of Afrikaans-speaking pupils in these places were guessed to be 30%, 30% and 70% respectively. These proportions were assumed to apply at each age.

Table IV represents an understatement of the number of English-speaking students in the schools aided and maintained by the Department of Education, Arts and Science for the figures quoted refer only to the schools selected for testing.

The figures for "other colleges" are also inadequate. Though they reflect the position in all training colleges, they include only such of the nursing, agricultural and military colleges as submitted returns.

The number of students to be tested at each age, as calculated in Table XIV, was distributed among the different institutions selected in proportion, to enrolment. Selection of testees was done on the spot by the individual testers from lists like those prepared for the schools.

It will be seen that an attempt was made to draw samples that would be truly representative of the population of each age in educational institutions, but that readjustments were made even before testing began. Further difficulties were encountered during the testing programme. For instance, the school at Sheba Mine at which it was intended to test a small group proved to be so remote that it was considered impractical to send a tester there; St. Andrew's College, Grahamstown withheld boys in the matric class and drew its sample from lower standards; at St. John's College in Johannesburg the headmaster would not consent to the Bureau's testing a sample only of pupils, so the entire school was testes; at the Pretoria Technical College it was necessary to test entire classes of part-time students; the University of the Witwatersrand would permit of the testing of students in the Psychology Department only. Although these students were all tested they did not furnish the required numbers of 17 and 18 year-olds, and whether the students in a single faculty can be said to be representative of the entire university is a moot point. In the case of St. John's College, officers of the Bureau drew a sample of pupils in accordance with the instructions issued to testers and the answer sheets of the rest were withheld. This was not done in the case of the Technical College. An adjustment was made to the sample received from St. Andrew's. The theoretical age-standard distribution of a sample of the required size was composed with that obtained and the surplus number of cases from standards below matric were discarded by using tables of random numbers. Like numbers of matric boys from the excess in St. John's were selected at random to supply the deficiency in the St. Andrew's sample.

TABLE XV.

AGE-STANDARD DISTRIBUTION OF SAMPLE BEFORE ADJUSTING AGES.

| Std. | BOYS | | | | | | | | | | | | AFRIKAANS. | | | | | GIRLS | | | | | | | | | | | |
|-------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-------------|------------|---------|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-------------|------------|----|---------|--|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | y | Total | x | Special | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | y | Total | x | Special | |
| 8 yr. | 409 | 52 | | | | | | | | | | 461 | | | 382 | 59 | | | | | | | | | | 441 | | 2 | |
| 9 | 189 | 309 | 17 | | | | | | | | | 515 | | 2 | 173 | 309 | 15 | | | | | | | | | 497 | | 2 | |
| 10 | 40 | 244 | 220 | 8 | | | | | | | | 512 | | 3 | 30 | 226 | 242 | 13 | | | | | | | | 511 | | 1 | |
| 11 | 4 | 49 | 219 | 177 | 9 | | | | | | | <u>458</u> | | 6 | 5 | 47 | 214 | 188 | 9 | | | | | | <u>463</u> | | 2 | | |
| | | | | | | | | | | | | <u>1946</u> | | | | | | | | | | | | | <u>1912</u> | | | | |
| 10 | 23 | 171 | 237 | 18 | 1 | | | | | | | 450 | | 1 | 16 | 172 | 252 | 10 | | | | | | | 450 | | 3 | | |
| 11 | 5 | 40 | 208 | 235 | 11 | | | | | | | 499 | | 5 | | 37 | 202 | 246 | 14 | | | | | | 499 | | 1 | | |
| 12 | | 5 | 60 | 203 | 168 | 41 | | | | | | 477 | 1 | 8 | | 7 | 44 | 184 | 178 | 39 | | | | | 452 | | 6 | | |
| 13 | | | 14 | 50 | 166 | 220 | 19 | | | | | 469 | | 23 | 2 | 1 | 7 | 50 | 181 | 241 | 20 | 1 | | | 503 | | 15 | | |
| 14 | | | 2 | 12 | 48 | 225 | 155 | 19 | | | | <u>459</u> | 1 | 29 | | | 4 | 19 | 47 | 224 | 164 | 17 | | | <u>475</u> | | 14 | | |
| | | | | | | | | | | | | <u>2354</u> | | | | | | | | | | | | | <u>2379</u> | | | | |
| 13 | | | 7 | 31 | 145 | 231 | 26 | 1 | | | | 441 | | 15 | | | 3 | 30 | 151 | 237 | 27 | | 1 | | 450 | | 8 | | |
| 14 | | | 1 | 12 | 52 | 219 | 193 | 24 | | | | 501 | | 14 | | | 1 | 6 | 34 | 200 | 201 | 38 | 2 | | 482 | | 12 | | |
| 15 | 2* | | | 2 | 14 | 97 | 211 | 148 | 20 | | | 494 | | 9 | | | 1 | 2 | 13 | 76 | 195 | 184 | 31 | 2 | 504 | 3 | 10 | | |
| 16 | 2* | | | 2 | 3 | 36 | 132 | 205 | 149 | 24 | | 553 | 6 | 2 | | | | | 3 | 20 | 84 | 208 | 184 | 26 | 4 | 529 | 6 | 5 | |
| 17 | | | | 1* | 2* | 13 | 122 | 144 | 194 | 118 | 24 | 618 | 21 | 1 | | | | | | 3 | 20 | 109 | 152 | 146 | 60 | 490 | 2 | 5 | |
| 18 | | 1* | | | | 8* | 79 | 101 | 88 | 112 | 88 | <u>477</u> | 22 | | | | | | | 1 | 6 | 38 | 42 | 127 | 212 | <u>426</u> | 1 | 2 | |
| | | | | | | | | | | | | 3084 | | | | | | | | | | | | | 2881 | | | | |

* Industrial Schools.

ENGLISH.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-------------|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|------------|-----|----|--|
| 8 | 371 | 130 | 3 | | | | | | | | | 504 | 1 | 1 | 348 | 117 | 7 | | | | | | | | 472 | | 2 | | |
| 9 | 111 | 313 | 93 | 2 | | | | | | | | 519 | | | 105 | 332 | 81 | 3 | | | | | | | | 521 | | | |
| 10 | 16 | 127 | 279 | 84 | 3 | | | | | | | 509 | | 2 | 12 | 109 | 313 | 70 | | | | | | | | 504 | | | |
| 11 | 6 | 26 | 131 | 248 | 60 | 1 | | | | | | <u>472</u> | | 1 | | 16 | 129 | 307 | 60 | 2 | | | | | <u>514</u> | | 3 | | |
| | | | | | | | | | | | | <u>2004</u> | | | | | | | | | | | | | <u>2011</u> | | | | |
| 10 | 9 | 85 | 285 | 80 | 3 | | | | | | | 462 | 1 | | 7 | 79 | 292 | 89 | 4 | | | | | | 471 | | | | |
| 11 | 1 | 25 | 109 | 285 | 69 | 4 | | | | | | 493 | | | 1 | 8 | 97 | 312 | 71 | 2 | 1 | | | | 492 | 1 | 1 | | |
| 12 | | 3 | 22 | 120 | 247 | 76 | 6 | | | | | 474 | | | | 2 | 17 | 132 | 272 | 90 | 1 | | | | 514 | | | | |
| 13 | | | 4 | 31 | 123 | 227 | 73 | 3 | | | | 461 | | 7 | | 3 | 4 | 36 | 108 | 246 | 88 | 3 | | | 488 | 1 | 3 | | |
| 14 | | | | 2 | 24 | 131 | 220 | 63 | 1 | | | <u>441</u> | | 1 | | | | 1 | 32 | 141 | 215 | 82 | 3 | | <u>474</u> | | 1 | | |
| | | | | | | | | | | | | <u>2331</u> | | | | | | | | | | | | | <u>2439</u> | | | | |
| 13 | | | | 14 | 126 | 226 | 67 | 2 | | | | 435 | | 1 | | | 19 | 129 | 264 | 81 | 2 | | | | 495 | | 2 | | |
| 14 | | | | 1 | 22 | 134 | 230 | 80 | 4 | | | 471 | 1 | 3 | | | | | 20 | 127 | 214 | 107 | 5 | | 473 | | 1 | | |
| 15 | | 1 | | 2 | 8 | 45 | 149 | 234 | 68 | 4 | | 511 | 2 | 3 | | | | | 1 | 9 | 32 | 122 | 223 | 96 | 5 | 488 | 2 | 1 | |
| 16 | | | | | 3 | 9 | 71 | 161 | 220 | 69 | | 533 | | 1 | | | | | 1 | | 12 | 36 | 131 | 191 | 95 | 10 | 476 | 11 | |
| 17 | | | | | 2 | 6 | 36 | 85 | 155 | 178 | 15 | 477 | 3 | | | | | | | 2 | 7 | 38 | 72 | 222 | 106 | 447 | 23 | 1 | |
| 18 | | | | | 1 | | 18 | 34 | 66 | 123 | 45 | <u>287</u> | | | | | | | | 1 | | 10 | 21 | 109 | 177 | <u>318</u> | 26 | | |
| | | | | | | | | | | | | 2714 | | | | | | | | | | | | | | 2697 | | | |

(NOTE: 0 means Std. 10
y means Past Std. 10
x means Unknown)

This was done in Table XVI. (Note: P % is the percentage in the population, F the frequency obtained and F^1 the theoretical frequency of $\sum F$). The probability of obtaining as great or greater differences between observed and expected frequencies by chance was determined by calculating χ^2 .

Examination of the different values of χ^2 shows that the obtained standard distributions of school children aged 14 - 18 doing the Senior Test and of 12 year-olds doing the Intermediate Test did not differ from the theoretical distribution more than could reasonably be attributed to chance. Neither did those of 13 year-old boys doing the Intermediate Test, 13 year-old girls doing the Senior Test, 11 year-old boys doing the Intermediate Test and 10 year-old boys doing the Junior Test. In the remaining cases differences were statistically significant.

It was decided that the best procedure would be to match, as far as possible, the distributions at overlapping ages by making the less satisfactory distribution like the more satisfactory distribution. Instead of weighting the former distribution, the number of cases was reduced. For the sake of uniformity each sample was reduced to 400, the size of sample determined to yield a standard error of the mean equal to .75. (See page 1). For each age group requiring adjustment the total of 400 was divided into the proportions of each standard represented in the satisfactory distribution. Surplus cases obtained for each standard were discarded by using tables of random numbers, care being taken to retain more or less equal numbers who did the A, B and C forms of the test.

For example, the distribution of 14 year-old boys who did the Senior Test was found to be satisfactory. It was necessary to adjust the sample Afrikaans 14 year-old boys who did the Intermediate Test.

The standard distribution of Afrikaans Senior boys was:

| | |
|--------|------------|
| Std. 3 | 1 |
| Std. 4 | 12 |
| Std. 5 | 52 |
| Std. 6 | 219 |
| Std. 7 | 193 |
| Std. 8 | <u>24</u> |
| Total | <u>501</u> |

In the corresponding distribution required for the Intermediate group each entry was multiplied by $\frac{400}{501}$ giving:-

| | |
|--------|------------|
| Std. 3 | 1 |
| Std. 4 | 11 |
| Std. 5 | 41 |
| Std. 6 | 175 |
| Std. 7 | 154 |
| Std. 8 | <u>19</u> |
| Total | <u>400</u> |

TABLE XVI.
COMPARISON OF AGE-STANDARD DISTRIBUTION OF THE SAMPLE WITH THAT IN THE POPULATION.

| BOYS | | | | | | | | | | | | | GIRLS | | | | | | | | | | | | | | |
|---------------------|-----|------|------|------|------|------|------|------|------|------|------|---|-------|---------------|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|
| Age | St. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | y | Total | Age | St. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | y | Total |
| 8 yr. | P % | 81.9 | 17.6 | 0.5 | | | | | | | | | 100.0 | 8 yr. | P % | 78.9 | 20.5 | 0.6 | | | | | | | | | 100.0 |
| | S f | 394 | 84 | 1 | | | | | | | | | 479 | | S f | 368 | 82 | 3 | | | | | | | | 453 | |
| | f1 | 393 | 84 | 2 | | | | | | | | | 479 | | f1 | 357 | 93 | 3 | | | | | | | | 453 | |
| 9 yr. | P % | 27.2 | 59.2 | 13.2 | 0.4 | | | | | | | | 100.0 | 9 yr. | P % | 23.4 | 59.9 | 16.0 | .7 | | | | | | | | 100.0 |
| | S f | 157 | 311 | 48 | 1 | | | | | | | | 517 | | S f | 146 | 318 | 42 | 1 | | | | | | | 507 | |
| | f1 | 141 | 306 | 68 | 2 | | | | | | | | 517 | | f1 | 119 | 304 | 81 | 3 | | | | | | | 507 | |
| 10 yr. Junior | P % | 5.5 | 29.0 | 53.0 | 12.1 | .4 | | | | | | | 100.0 | 10yr. Junior | P % | 3.6 | 25.2 | 55.9 | 14.7 | 0.6 | | | | | | | 100.0 |
| | S f | 30 | 197 | 244 | 39 | 1 | | | | | | | 511 | | S f | 23 | 179 | 271 | 36 | | | | | | | 509 | |
| | f1 | 28 | 148 | 271 | 62 | 2 | | | | | | | 511 | | f1 | 18 | 128 | 285 | 75 | 3 | | | | | | 509 | |
| 10yr. Int. | P % | 5.5 | 29.0 | 53.0 | 12.1 | .4 | | | | | | | 100.0 | 10 yr. Int. | P % | 3.6 | 25.2 | 55.9 | 14.7 | 0.6 | | | | | | | 100.0 |
| | S f | 17 | 136 | 256 | 43 | 2 | | | | | | | 454 | | S f | 12 | 134 | 268 | 42 | 2 | | | | | | 458 | |
| | f1 | 25 | 132 | 240 | 55 | 2 | | | | | | | 454 | | f1 | 16 | 116 | 256 | 67 | 3 | | | | | | 458 | |
| 11 yr. Junior | P % | 0.9 | 7.0 | 30.6 | 48.9 | 12.2 | .4 | | | | | | 100.0 | 11 yr. Junior | P % | 0.5 | 4.8 | 27.1 | 52.2 | 14.5 | 0.9 | | | | | | 100.0 |
| | S f | 5 | 40 | 183 | 206 | 30 | | | | | | | 464 | | S f | 3 | 34 | 180 | 236 | 30 | 1 | | | | | 484 | |
| | f1 | 4 | 32 | 142 | 227 | 57 | 2 | | | | | | 464 | | f1 | 3 | 23 | 131 | 253 | 70 | 4 | | | | | 484 | |
| 11 yr. Int. | P % | 0.9 | 7.0 | 30.6 | 48.9 | 12.2 | .4 | | | | | | 100.0 | 11 yr. Int. | P % | 0.5 | 4.8 | 27.1 | 52.2 | 10.9 | 0.9 | | | | | | 100.0 |
| | S f | 3 | 34 | 168 | 255 | 34 | 2 | | | | | | 496 | | S f | 0 | 25 | 160 | 273 | 37 | 1 | 0 | | | | 496 | |
| | f1 | 4 | 35 | 152 | 243 | 60 | 2 | | | | | | 496 | | f1 | 2 | 24 | 134 | 259 | 72 | 5 | | | | | 496 | |
| 12 yr. | P % | 0.2 | 1.5 | 8.2 | 30.6 | 47.3 | 11.7 | 0.5 | | | | | 100.0 | 12 yr. | P % | 0.1 | 0.9 | 6.0 | 28.5 | 49.7 | 14.2 | 0.6 | | | | | 100.0 |
| | S f | 0 | 4 | 45 | 169 | 200 | 55 | 2 | | | | | 475 | | S f | 0 | 5 | 33 | 163 | 216 | 60 | | | | | 477 | |
| | f1 | 1 | 7 | 39 | 145 | 225 | 56 | 2 | | | | | 475 | | f1 | 0 | 4 | 29 | 136 | 237 | 68 | 3 | | | | 477 | |
| 13 yr. Int. | P % | 0.1 | 0.3 | 2.0 | 9.6 | 30.5 | 45.1 | 11.9 | 0.5 | | | | 100.0 | 13 yr. Int. | P % | 0.1 | 0.2 | 1.3 | 7.0 | 27.5 | 48.3 | 14.8 | 0.8 | | | | 100.0 |
| | S f | | | 30 | 42 | 149 | 223 | 41 | 1 | | | | 466 | | S f | 1 | 2 | 6 | 44 | 152 | 243 | 47 | 2 | | | 497 | |
| | f1 | | 2 | 9 | 45 | 142 | 210 | 55 | 2 | | | | 466 | | f1 | 1 | 1 | 6 | 35 | 137 | 240 | 74 | 4 | | | 497 | |
| 13 yr. Senior | P % | 0.1 | 0.3 | 2.0 | 9.6 | 30.5 | 45.1 | 11.9 | 0.5 | | | | 100.0 | 13 yr. Senior | P % | 0.1 | 0.2 | 1.3 | 7.0 | 27.5 | 48.3 | 14.8 | 0.8 | | | | 100.0 |
| | S f | | | 4 | 24 | 137 | 229 | 43 | 1 | | | | 438 | | S f | | | 2 | 26 | 142 | 248 | 49 | 1 | 1 | | 469 | |
| | f1 | | 1 | 9 | 42 | 134 | 198 | 52 | 2 | | | | 438 | | f1 | | 1 | 6 | 33 | 129 | 227 | 69 | 4 | | | 469 | |
| 14 yr. Int. | P % | | 0.1 | 0.5 | 2.7 | 9.7 | 33.2 | 42.2 | 11.1 | 0.5 | | | 100.0 | 14 yr. Int. | P % | | 0.1 | 0.3 | 1.7 | 7.2 | 31.1 | 45.0 | 13.8 | 0.8 | | | 100.0 |
| | S f | | | 1 | 8 | 38 | 186 | 181 | 37 | | | | 451 | | S f | | | 2 | 12 | 41 | 190 | 185 | 43 | 1 | | 474 | |
| | f1 | | 1 | 2 | 12 | 44 | 150 | 190 | 50 | 2 | | | 451 | | f1 | | 1 | 2 | 8 | 34 | 147 | 213 | 65 | 4 | | 474 | |
| 14 yr. Senior | P % | | 0.1 | 0.5 | 2.7 | 9.7 | 33.2 | 42.2 | 11.1 | 0.5 | | | 100.0 | 14 yr. Senior | P % | | 0.1 | 0.3 | 1.7 | 7.2 | 31.1 | 45.0 | 13.8 | 0.8 | | | 100.0 |
| | S f | | | 1 | 8 | 40 | 185 | 208 | 47 | 2 | | | 491 | | S f | | | 1 | 4 | 28 | 171 | 206 | 66 | 3 | | 479 | |
| | f1 | | 1 | 2 | 13 | 48 | 163 | 207 | 55 | 2 | | | 491 | | f1 | | 1 | 1 | 8 | 34 | 149 | 216 | 66 | 4 | | 479 | |
| 15 yr. | P % | | 0.1 | 0.1 | 0.7 | 3.4 | 15.3 | 34.7 | 35.0 | 10.1 | 0.6 | | 100.0 | 15 yr. | P % | | | 0 | 0.4 | 2.1 | 11.8 | 35.1 | 38.8 | 10.9 | 0.9 | | 100.0 |
| | S f | | | | 2 | 12 | 76 | 186 | 183 | 39 | 2 | | 501 | | S f | | | 1 | 2 | 11 | 58 | 166 | 200 | 57 | 3 | 498 | |
| | f1 | 1 | 0 | 1 | 3 | 17 | 77 | 174 | 175 | 51 | 3 | | 501 | | f1 | | | 2 | 10 | 59 | 175 | 193 | 54 | 5 | 498 | | |
| SCHOOL PUPILS ONLY. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 yr. | P % | | | | 0.2 | 1.0 | 6.4 | 15.7 | 32.3 | 31.3 | 13.1 | | 100.0 | 16 yr. | P % | | | | | 0.5 | 3.7 | 15.9 | 35.4 | 28.2 | 16.3 | | 100.0 |
| | S f | | | | 2 | 19 | 61 | 127 | 139 | 33 | | | 381 | | S f | | | | | 2 | 14 | 58 | 144 | 136 | 45 | | 399 |
| | f1 | | | | 1 | 4 | 24 | 60 | 123 | 119 | 50 | | 381 | | f1 | | | | | 2 | 15 | 63 | 141 | 113 | 65 | | 399 |
| 17 yr. | P % | | | | 0.2 | 1.8 | 4.8 | 14.9 | 31.0 | 47.3 | | | 100.0 | 17 yr. | P % | | | | | 0.7 | 4.5 | 16.7 | 21.9 | 56.2 | | 100.0 | |
| | S f | | | | 3 | 13 | 36 | 104 | 112 | | 1 | | 269 | | S f | | | | | 2 | 9 | 43 | 78 | 138 | | 268 | |
| | f1 | | | | 1 | 5 | 13 | 40 | 83 | 127 | | | 269 | | f1 | | | | | 2 | 12 | 45 | 59 | 150 | | 268 | |
| 18 yr. | P % | | | | 0.4 | 1.3 | 6.5 | 19.3 | 72.5 | | | | 100.0 | 18 yr. | P % | | | | | 0.1 | 0.5 | 2.1 | 8.3 | 11.7 | 77.3 | | 100.0 |
| | S f | | | | 1 | 1 | 8 | 23 | 88 | | | | 121 | | S f | | | | | 1 | 1 | 9 | 16 | 79 | | 105 | |
| | f1 | | | | | 2 | 8 | 23 | 88 | | | | 121 | | f1 | | | | | 1 | 2 | 9 | 12 | 81 | | 105 | |

P = Population.
S = Sample.

The obtained distribution for Afrikaans Intermediate boys was:-

| | <u>FORM OF TEST.</u> | | | |
|---------|----------------------|------------|------------|---------------|
| | <u>A</u> | <u>B</u> | <u>C</u> | <u>TOTAL.</u> |
| Std. 3 | - | - | 2 | 2 |
| Std. 4 | 4 | 5 | 3 | 12 |
| Std. 5 | 17 | 19 | 12 | 48 |
| Std. 6 | 72 | 84 | 67 | 223 |
| Std. 7 | 48 | 49 | 59 | 156 |
| Std. 8 | 6 | 3 | 10 | 19 |
| Special | 14 | 6 | 9 | 30 |
| TOTAL | <u>161</u> | <u>166</u> | <u>162</u> | <u>460</u> |

The best distribution to give the required total seemed to be:-

| | <u>FORM OF TEST.</u> | | | |
|---------|----------------------|------------|------------|---------------|
| | <u>A</u> | <u>B</u> | <u>C</u> | <u>TOTAL.</u> |
| Std. 3 | - | - | 1 | 1 |
| Std. 4 | 4 | 4 | 3 | 11 |
| Std. 5 | 13 | 15 | 12 | 40 |
| Std. 6 | 51 | 58 | 51 | 150 |
| Std. 7 | 48 | 48 | 49 | 145 |
| Std. 8 | 6 | 3 | 10 | 19 |
| Special | 12 | 5 | 7 | 24 |
| TOTAL | <u>134</u> | <u>133</u> | <u>133</u> | <u>400</u> |

Surplus cases were rejected randomly.

Note: The children in special classes were in stds. 5, 6 and 7.

Using tables of random numbers 4 testees in std. 5, 21 in std. 6 and 2 in special classes who had done the A test were discarded - and so on. As a result of the above adjustments the value of χ^2 for the Intermediate Afrikaans sample was reduced from 16.5 to 7.2.

There was only one set of 9 year-olds in the entire sample, so there was no possibility of adjusting the distribution to match a more satisfactory one. However, it appeared obvious that too many children of this age had been drawn from Std. I, so it was decided to drop some of the Std. I's and to reduce the sample of 9 year-olds to 400 also.

The adjusted samples were all tested against the population proportions. The values of χ^2 obtained after adjustment proved to be lower (see Table XVII). The samples of boys were found to be more satisfactory than those of girls.

TABLE XVII.

COMPARISON OF AGE-STANDARD DISTRIBUTION OF THE ADJUSTED SAMPLE AND THE SCHOOL POPULATION.

| B O Y S | | | | | | | | | | | | | G I R L S | | | | | | | | | | | | | |
|---------------|---------|------------|------------|------------|------------|------------|------------|------------|----------|--------|----|------------|-------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|--------|----|------------|--------------------------------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total | |
| 8 | f fl | 394 393 | 84 84 | 1 2 | | | | | | | | 479 479 | f fl | 368 357 | 82 93 | 3 3 | | | | | | | | | 453 453 | |
| 9 | f fl | 110 109 | 242 242 | 46 48 | 2 1 | | | | | | | 400 400 | f fl | 94 94 | 265 263 | 40 42 | 1 1 | | | | | | | | 400 400 | |
| 10 Junior | f fl | 15 22 | 120 116 | 231 212 | 33 48 | 1 2 | | | | | | 400 400 | $\chi^2 = 9.18$ $P > 2\%$ | f fl | 11 14 | 118 101 | 237 224 | 34 59 | | 2 | | | | | 400 400 | $\chi^2 = 16.2$ $P = .1\%$ |
| 10 Intern. | f fl | 17 25 | 136 132 | 256 240 | 43 55 | 2 2 | | | | | | 454 454 | $\chi^2 = 6.3$ $P = 10\%$ | f fl | 12 16 | 134 116 | 268 256 | 42 67 | 2 3 | | | | | | 458 458 | $\chi^2 = 14.1$ $.1\% < P < 1\%$ |
| 11 Junior | f fl | 3 3 | 27 28 | 142 122 | 198 196 | 30 51 | | | | | | 400 400 | $\chi^2 = 11.98$ $P < 1\%$ | f fl | 2 | 21 19 | 135 108 | 214 209 | 29 58 | 1 4 | | | | | 400 400 | $\chi^2 = 23.4$ $P < .1\%$ |
| 11 Intern. | f fl | 3 4 | 34 35 | 168 152 | 255 243 | 34 60 | 2 2 | | | | | 496 496 | $\chi^2 = 13.3$ $P < 1\%$ | f fl | 2 | 25 24 | 160 134 | 273 259 | 37 72 | 1 5 | | | | | 496 496 | $\chi^2 = 25.6$ $P < .1\%$ |
| 12 | f fl | 1 | 4 7 | 45 39 | 169 145 | 200 225 | 55 56 | 2 2 | | | | 475 475 | $\chi^2 = 9.0$ $P = 10\%$ | f fl | | 5 4 | 32 27 | 156 128 | 202 224 | 55 64 | | 3 | | | 450 450 | $\chi^2 = 9.9$ $P < 5\%$ |
| 13 Intern. | f fl | | 2 | 10 9 | 42 45 | 149 142 | 223 210 | 41 56 | 1 2 | | | 466 466 | $\chi^2 = 5.8$ $P = 20\%$ | f fl | 1 1 | 2 1 | 6 6 | 45 35 | 152 138 | 244 241 | 48 74 | 2 4 | | | 500 500 | $\chi^2 = 14.49$ $.1\% < P < 1\%$ |
| 13 Senior | f fl | | 1 | 4 8 | 24 39 | 136 122 | 199 180 | 36 48 | 1 2 | | | 400 400 | $\chi^2 = 13.7$ $P = 2\%$ | f fl | 1 | 1 | 2 5 | 26 28 | 132 110 | 200 193 | 39 59 | 1 3 | | | 400 400 | $\chi^2 = 16.2$ $.1\% < P < 1\%$ |
| 14 Intern. | f fl | | | 1 2 | 7 11 | 32 39 | 150 133 | 173 169 | 37 44 | 2 | | 400 400 | $\chi^2 = 7.2$ $P > 10\%$ | f fl | | | 1 1 | 3 7 | 24 29 | 153 125 | 175 180 | 43 55 | 1 3 | | 400 400 | $\chi^2 = 12.65$ $P < 1\%$ |
| 14 Senior | f fl | | 1 3 | 1 14 | 7 48 | 41 166 | 187 211 | 213 211 | 49 55 | 2 2 | | 500 500 | $\chi^2 = 9.9$ $P = 5\%$ | f fl | | 1 1 | 1 8 | 4 8 | 28 34 | 171 149 | 206 216 | 66 66 | 3 4 | | 479 479 | $\chi^2 = 7.3$ $P > 10\%$ |

REPRESENTATION OF DIFFERENT TYPES OF EDUCATIONAL INSTITUTIONS.

The Junior samples were drawn entirely and the Intermediate samples very largely from provincial and private schools. The Senior sample, however, was drawn from a variety of institutions. An analysis was made of the senior samples. In the first instance, the proportions actually obtained from schools and other institutions was compared with those which had been required. Testing entire classes of part-time students in technical colleges resulted in an excess of 16 and 17 year-old testees. In the Afrikaans sample this was counter-acted by the fact that the sample from provincial schools had been increased when it was discovered that the numbers of Afrikaans pupils in technical colleges had been overestimated. The proportions in Table XVIII were little different to those required, so it was decided not to discard any cases. In the case of the English sample, however, it was judged necessary to restore the balance between schools and other institutions by discarding 30 16 year-olds from Technical Colleges. This was done by drawing random numbers.

A more detailed analysis is given in Table XIX. The required numbers of boys and girls is given in the first row for each age. Beneath that are given the numbers actually obtained. In the third row appear the theoretical distribution in the population for samples of the size obtained.

TABLE XVIII.

The numbers of pupils from schools and other institutions actually obtained in the final sample compared with the numbers required.

SENIOR AFRIKAANS.

| Age | Provincial and Private Schools. | | Other Educational Institutions. | | Total | |
|-------|---------------------------------|----------|---------------------------------|----------|----------|----------|
| | Required | Obtained | Required | Obtained | Required | Obtained |
| 13 | 1,000 | 908 | - | 1 | 1,000 | 909 |
| 14 | 869 | 971 | 131 | 38 | 1,000 | 1,009 |
| 15 | 880 | 920 | 120 | 100 | 1,000 | 1,020 |
| 16 | 715 | 781 | 285 | 314 | 1,000 | 1,095 |
| 17 | 496 | 546 | 504 | 571 | 1,000 | 1,117 |
| 18 | 222 | 242 | 778 | 668 | 1,000 | 910 |
| Total | 4,182 | 4,368 | 1,818 | 1,692 | 6,000 | 6,060 |

SENIOR ENGLISH.

| Age | Provincial and Private Schools. | | Other Educational Institutions. | | Total | |
|-------|---------------------------------|----------|---------------------------------|----------|----------|----------|
| | Required | Obtained | Required | Obtained | Required | Obtained |
| 13 | 1,000 | 921 | - | - | 1,000 | 921 |
| 14 | 882 | 889 | 118 | 61 | 1,000 | 950 |
| 15 | 906 | 893 | 94 | 114 | 1,000 | 1,007 |
| 16 | 772 | 781 | 228 | 270 | 1,000 | 1,051 |
| 17 | 524 | 529 | 476 | 423 | 1,000 | 952 |
| 18 | 210 | 211 | 790 | 419 | 1,000 | 630 |
| Total | 4,294 | 4,224 | 1,706 | 1,287 | 6,000 | 5,511 |

Looking first at the Afrikaans sample we note a deficit of 14 year-olds from Technical Colleges and schools under the Department of Education, Arts and Science. In the case of the Technical Colleges this was explained by the fact that owing to recent legislation re school-leavers, the numbers of 14 year-olds had in fact dropped and when this was learned provision had been made to test extra children of this age in the ordinary schools. The estimate of the number of 14 year-olds in Technical Colleges was also probably distorted by the inclusion of part-time students who may have actually been included in the schools.

The 15 year-old sample was satisfactory except for a deficit of pupils from schools under the Department of Education, Arts and Science.

The 16 and 17 year-old samples, especially for boys, were overweighted with students from Technical Colleges, but the proportions of 18 year-olds drawn from schools and other institutions do not differ significantly from the required proportions.

As far as the English samples were concerned the same shortage of 14 year-olds from Technical Colleges is to be observed, but in view of the altered conditions mentioned above this was not considered serious. The proportions of 15, 16 and 17 year-olds from schools and from other institutions were not significantly unlike those required. The expected number of 15 year-old girls in universities was occasioned by including part-time students of this age. These students were not available for testing. The eighteen year-old samples were unsatisfactory, there being too few students from Technical Colleges and Universities.

EQUIVALENCE OF THE A, B & C FORM OF THE TEST, AND COMPARISON OF SCORES OF BOYS AND GIRLS.

To test the equivalence of the alternate forms of the tests, distributions of scores were made separately for boys and girls in the middle age group of each series for each sub-test. Averages and standard deviations were calculated,

TABLE XIX.

COMPARISON OF FINAL SAMPLE WITH THE SAMPLE REQUIRED ACCORDING TO THE ORIGINAL FRAMEWORK.

(a) ENGLISH.

| Age | | Provincial Schools | | | | | | | | Private Schools | | Total Provincial and Private Schools | | Schools under Dept. of Educ., Arts & Science (State & State-Aided) | | Technical Colleges | | Universities | | Other Colleges | | Total other Institutions | | Grand Total | |
|-------|----------------------|--------------------|-----|-------|-----|--------|----|-----------|-----|-----------------|-----|--------------------------------------|------|--|----|--------------------|-----|--------------|-----|----------------|-----|--------------------------|-----|-------------|------|
| | | Cape | | Natal | | O.F.S. | | Transvaal | | | | | | | | | | | | | | | | | |
| | | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| 13 | Desired | 131 | 130 | 79 | 77 | 13 | 14 | 176 | 176 | 108 | 108 | 507 | 505 | - | - | - | - | - | - | - | - | - | - | 507 | 505 |
| | Obtained f | 108 | 102 | 63 | 67 | 13 | 8 | 146 | 134 | 70 | 89 | 400 | 400 | - | - | - | - | - | - | - | - | - | - | 400 | 400 |
| | f ¹ | 104 | 103 | 62 | 61 | 10 | 11 | 139 | 139 | 85 | 86 | 400 | 400 | | | | | | | | | | | 400 | 400 |
| 14 | Desired | 115 | 116 | 68 | 72 | 12 | 12 | 156 | 156 | 95 | 95 | 446 | 451 | 1 | 1 | 58 | 58 | - | - | - | - | 59 | 59 | 505 | 510 |
| | Obtained f | 123 | 118 | 65 | 72 | 13 | 14 | 142 | 148 | 84 | 108 | 427 | 460 | 3 | 2 | 45 | 10 | - | - | - | - | 48 | 12 | 475 | 472 |
| | f ¹ | 108 | 107 | 64 | 67 | 11 | 11 | 147 | 144 | 89 | 88 | 419 | 417 | 1 | 1 | 55 | 54 | | | | | 56 | 55 | 475 | 472 |
| 15 | Desired | 119 | 118 | 74 | 78 | 12 | 12 | 161 | 160 | 98 | 98 | 464 | 466 | 2 | 1 | 43 | 31 | 2 | 15 | - | - | 47 | 47 | 511 | 513 |
| | Obtained f | 117 | 111 | 78 | 82 | 13 | 12 | 145 | 154 | 98 | 82 | 451 | 441 | 3 | 2 | 64 | 45 | - | - | - | - | 67 | 47 | 518 | 488 |
| | f ¹ | 121 | 112 | 75 | 74 | 12 | 12 | 163 | 152 | 99 | 93 | 470 | 443 | 2 | 1 | 44 | 30 | 2 | 14 | | | 48 | 45 | 518 | 488 |
| 16 | Desired | 100 | 99 | 64 | 66 | 11 | 10 | 136 | 136 | 82 | 83 | 393 | 394 | 4 | 2 | 109 | 103 | 2 | 6 | 0 | 3 | 115 | 114 | 508 | 508 |
| | Obtained f | 108 | 101 | 69 | 65 | 9 | 8 | 126 | 124 | 85 | 87 | 397 | 385 | 5 | 3 | 127 | 90 | - | 6 | 6 | 2 | 138 | 101 | 535 | 486 |
| | f ¹ | 105 | 95 | 67 | 63 | 12 | 10 | 144 | 130 | 86 | 79 | 414 | 377 | 4 | 2 | 115 | 98 | 2 | 6 | 0 | 3 | 121 | 109 | 535 | 486 |
| 17 | Desired | 69 | 69 | 45 | 49 | 7 | 7 | 94 | 95 | 57 | 57 | 272 | 277 | 4 | 2 | 200 | 148 | 32 | 55 | 2 | 33 | 238 | 238 | 510 | 515 |
| | Obtained f | 72 | 70 | 42 | 57 | 9 | 4 | 79 | 83 | 62 | 49 | 264 | 263 | 7 | 3 | 183 | 121 | 11 | 59 | 16 | 23 | 217 | 206 | 481 | 469 |
| | f ¹ | 65 | 63 | 42 | 45 | 7 | 6 | 87 | 86 | 54 | 52 | 255 | 252 | 4 | 2 | 190 | 135 | 30 | 50 | 2 | 30 | 226 | 217 | 481 | 469 |
| 18 | Desired | 27 | 28 | 18 | 19 | 4 | 3 | 38 | 37 | 23 | 23 | 110 | 110 | 5 | 2 | 294 | 180 | 93 | 114 | 3 | 99 | 395 | 395 | 505 | 505 |
| | Obtained f | 33 | 29 | 22 | 12 | 5 | 1 | 40 | 28 | 22 | 19 | 122 | 89 | 5 | 1 | 126 | 87 | 28 | 85 | 6 | 81 | 165 | 254 | 287 | 343 |
| | f ¹ | 15 | 19 | 10 | 13 | 2 | 2 | 22 | 25 | 13 | 16 | 62 | 75 | 3 | 1 | 167 | 122 | 53 | 78 | 2 | 67 | 225 | 268 | 287 | 343 |
| Total | Desired | 561 | 560 | 348 | 361 | 59 | 58 | 761 | 760 | 463 | 464 | 2192 | 2203 | 16 | 8 | 704 | 520 | 129 | 190 | 5 | 135 | 854 | 853 | 3046 | 3056 |
| | Obtained f | 561 | 531 | 339 | 355 | 62 | 47 | 678 | 671 | 421 | 434 | 2061 | 2038 | 23 | 11 | 545 | 353 | 39 | 150 | 28 | 106 | 635 | 620 | 2696 | 2658 |
| | Total f ¹ | 518 | 499 | 320 | 323 | 54 | 52 | 702 | 676 | 426 | 414 | 2020 | 1964 | 14 | 7 | 571 | 439 | 87 | 148 | 4 | 100 | 676 | 694 | 2696 | 2658 |

f¹ Figures indicate the theoretical frequencies for the numbers obtained at each age.

TABLE XIX.

(b) AFRIKAANS.

| Age | | Provincial Schools | | | | | | | | | | Total Provincial and Private Schools | Schools under Dept. of Educ., Arts & Science (State & State-Aided) | | Technical Colleges | | Universities | | Other Colleges | | Total other Institutions | | Grand Total | | | |
|-------|----------------|--------------------|-----|-------|----|--------|-----|-----------|------|-----------------|---|--------------------------------------|--|-----|--------------------|-----|--------------|-----|----------------|----|--------------------------|-----|-------------|------|------|-----|
| | | Cape | | Natal | | O.F.S. | | Transvaal | | Private Schools | | | M | F | M | F | M | F | M | F | M | F | M | F | | |
| | | M | F | M | F | M | F | M | F | M | F | | M | F | M | F | M | F | M | F | M | F | M | F | | |
| 13 | Desired | 176 | 176 | 17 | 17 | 67 | 66 | 244 | 245 | - | - | 504 | 504 | - | - | - | - | - | - | - | - | - | - | 504 | 504 | |
| | Obtained f | 141 | 137 | 7 | 14 | 50 | 51 | 201 | 197 | - | - | 399 | 399 | - | - | 1 | - | - | - | - | - | - | 1 | - | 400 | 399 |
| | f ¹ | 140 | 139 | 13 | 14 | 53 | 52 | 194 | 194 | - | - | 400 | 399 | - | - | 0 | - | - | - | - | - | - | 0 | - | 399 | 399 |
| 14 | Desired | 151 | 151 | 14 | 13 | 58 | 57 | 212 | 212 | - | - | 435 | 433 | 25 | 37 | 40 | 29 | - | - | - | - | - | 65 | 66 | 500 | 499 |
| | Obtained f | 169 | 169 | 21 | 17 | 69 | 63 | 225 | 239 | - | - | 484 | 488 | 10 | 8 | 20 | - | - | - | - | - | - | 30 | 8 | 514 | 496 |
| | f ¹ | 155 | 150 | 14 | 13 | 60 | 57 | 218 | 210 | - | - | 447 | 430 | 26 | 37 | 41 | 29 | - | - | - | - | - | 67 | 66 | 514 | 496 |
| 15 | Desired | 153 | 153 | 12 | 12 | 58 | 58 | 214 | 214 | - | - | 437 | 437 | 35 | 39 | 25 | 21 | - | - | - | - | - | 60 | 60 | 497 | 497 |
| | Obtained f | 151 | 172 | 16 | 14 | 56 | 61 | 218 | 228 | - | - | 441 | 475 | 33 | 22 | 25 | 20 | - | - | - | - | - | 58 | 42 | 499 | 517 |
| | f ¹ | 154 | 159 | 12 | 12 | 58 | 60 | 215 | 223 | - | - | 439 | 454 | 35 | 41 | 25 | 22 | - | - | - | - | - | 60 | 63 | 499 | 517 |
| 16 | Desired | 125 | 126 | 10 | 10 | 48 | 48 | 176 | 175 | - | - | 359 | 359 | 55 | 80 | 85 | 56 | 1 | 2 | 1 | 4 | 142 | 142 | 501 | 501 | |
| | Obtained f | 133 | 149 | 8 | 12 | 52 | 55 | 179 | 192 | - | - | 372 | 408 | 49 | 47 | 131 | 79 | - | 1 | 4 | 3 | 184 | 130 | 556 | 538 | |
| | f ¹ | 139 | 135 | 11 | 11 | 53 | 52 | 195 | 188 | - | - | 398 | 386 | 61 | 86 | 95 | 60 | 1 | 2 | 1 | 4 | 158 | 152 | 555 | 538 | |
| 17 | Desired | 87 | 87 | 7 | 7 | 33 | 33 | 121 | 121 | - | - | 248 | 248 | 63 | 82 | 150 | 77 | 29 | 31 | 10 | 62 | 252 | 252 | 500 | 500 | |
| | Obtained f | 93 | 96 | 6 | 9 | 33 | 38 | 141 | 130 | - | - | 273 | 273 | 67 | 69 | 239 | 78 | 21 | 25 | 21 | 51 | 348 | 223 | 621 | 496 | |
| | f ¹ | 108 | 86 | 9 | 7 | 41 | 33 | 150 | 120 | - | - | 308 | 246 | 78 | 81 | 186 | 76 | 36 | 31 | 13 | 62 | 313 | 250 | 621 | 496 | |
| 18 | Desired | 39 | 38 | 5 | 5 | 16 | 17 | 54 | 54 | - | - | 114 | 114 | 42 | 45 | 229 | 85 | 82 | 83 | 36 | 176 | 389 | 389 | 502 | 503 | |
| | Obtained f | 49 | 42 | 5 | 6 | 14 | 14 | 59 | 54 | - | - | 127 | 116 | 48 | 39 | 202 | 54 | 66 | 79 | 37 | 144 | 353 | 316 | 480 | 432 | |
| | f ¹ | 37 | 33 | 5 | 4 | 15 | 15 | 52 | 46 | - | - | 109 | 98 | 40 | 39 | 219 | 73 | 78 | 71 | 34 | 151 | 371 | 334 | 480 | 432 | |
| Total | Desired | 737 | 731 | 65 | 64 | 280 | 279 | 1021 | 1021 | - | - | 2097 | 2095 | 220 | 283 | 529 | 268 | 112 | 116 | 47 | 242 | 908 | 909 | 3005 | 3004 | |
| | Obtained f | 736 | 765 | 63 | 72 | 274 | 282 | 1023 | 1040 | - | - | 2096 | 2159 | 207 | 185 | 618 | 231 | 87 | 105 | 62 | 198 | 974 | 719 | 3070 | 2878 | |
| | f ¹ | 733 | 702 | 64 | 61 | 280 | 269 | 1024 | 981 | - | - | 2101 | 2013 | 240 | 284 | 566 | 260 | 115 | 104 | 48 | 217 | 969 | 865 | 3070 | 2878 | |

f¹ Figures indicate the theoretical frequencies for the numbers obtained at each age.

and the differences between the means of the alternate forms tested by the "t" test. In those cases where differences were found to be significant, distributions were made also for pupils of adjacent ages. As differences observed did not appear to be consistent from age to age, it was assumed that the tests were in fact equivalent, and in subsequent calculations the A, B and C forms of the tests were thrown together.

In the Junior and Intermediate Tests the average scores for girls were generally higher than those for boys, but the opposite tendency was observed in the Senior Tests.

In Annexure III are listed for those ages for which distributions were made, means, standard deviations, standard errors and reliability coefficients of the combined A, B and C distributions. Reliability was estimated from the Kuder-Richardson formula 21 which is known to be an under-estimate. It was highest for the Junior Tests and lowest for the Senior Tests. There was nothing in the standard deviations of the different sub-tests to suggest that scores on the sub-tests might not be combined without weighting, and in subsequent calculations the scores of sub-tests 1, 3 and 5 were added, yielding a "non-verbal" score and those on sub-test 2, 4 and 6 were added to give a "verbal" score.

To see whether testees at the overlapping ages would obtain the same I.Q. score irrespective of the test performed, an experiment was conducted in Pretoria in 1955. This consisted in giving pupils on subsequent days both tests applicable.

- (i) A group of 89 English-speaking 10 year-olds was given the Junior Test one day and the Intermediate Test the next.
- (ii) A group of 88 English-speaking 10 year-olds was given the Intermediate Test one day and the Junior Test the next.
- (iii) A group of 90 Afrikaans-speaking 14 year-olds was given the Intermediate Test one day and the Senior Test the next.
- (iv) A group of 94 Afrikaans-speaking 14 year-olds was given the Senior Test one day and the Intermediate Test the next.

The scores were converted into normalised standard scores and correlated separately for non-verbal, verbal and total scores. The results are contained in Annexure IV. It will be noted that practice effect was greatest for the group which had done the easier test first, and amounted to about 7 points in the non-verbal tests and 4 points in the verbal tests. The correlation coefficients obtained are higher than those generally obtained between different tests of intelligence.

CALCULATION OF NORMS.

Distributions of raw scores (non-verbal, verbal and total) were made for each quarter year of age. In the Junior groups means, standard deviations and medians were calculated for each

distribution. At the Intermediate, and even more noticeably at the Senior stage, however, the differences between successive age groups were so slight and erratic, that the statistics were calculated for half-yearly groups only. The first and third quartiles were calculated for the half-yearly groups of all series, and the medians and quartiles were drawn on squared paper. It was found that straight line growth curves would fit the medians of the Junior series well, but that the rate of increase of scores on the Intermediate and Senior tests was curvilinear. The bias in the youngest 8 year-old groups due to the exclusion of pupils in the sub-standards was reflected by their scoring too high in relation to older 8 and 9 year-olds. (See Table XX).

It was decided to publish normalised standard scores with mean at 100 and standard deviation of 15 (so-called "deviation I.Q.'s") for each group. These were derived as follows:

Normalised scores were obtained after the manner described in "The Theory of Mental Tests" by Gulliksen (p.282) for each six-monthly group of each series. The values in raw scores of the percentiles corresponding to every fifth "I.Q." from 55 to 145 were interpolated and the results plotted to give a family of curves - one for each of the selected I.Q. scores. These curves were smoothed by fitting straight lines or second degree curves (using orthogonal polynomials) and the norms were read from the smoothed curves. The norms for the Non-Verbal and Verbal tests were tabled for every quarter, but those for the entire test quarter were listed for each month of age. The bias in the case of the 8 year-olds was corrected for by eliminating the youngest age group and carrying the smoothed curves down to the age 8.0.

RELIABILITY AND STANDARD ERRORS OF MEASUREMENT.

The reliability of the tests as calculated by the Kuder-Richardson formula 21, known to give an under-estimate, are given in Table XX. The values obtained after applying Tucker's correction are also given. The lowest obtained were .85 and .86 for English and Afrikaans Senior Non-Verbal tests.

Standard errors of measurement appear in the same table. These are expressed in terms of standard scores, not raw scores, and were calculated from the more conservative estimate of reliability.

TABLE XX.

Means, Standard Deviations and Medians per age group.

ENGLISH: JUNIOR.

NON-VERBAL TESTS.

| Age Group | \bar{x} | $\bar{\sigma}$ | median | N |
|--------------|-----------|----------------|--------|-----|
| 8.0 - 8.2 | 23.2 | 13.9 | 20.6 | 205 |
| 8.3 - 8.5 | 25.1 | 14.4 | 23.1 | 245 |
| 8.6 - 8.8 | 26.2 | 14.0 | 25.9 | 227 |
| 8.9 - 8.11 | 28.1 | 15.4 | 26.6 | 299 |
| 9.0 - 9.2 | 30.5 | 15.1 | 30.5 | 188 |
| 9.3 - 9.5 | 33.7 | 17.0 | 33.1 | 214 |
| 9.6 - 9.8 | 36.6 | 16.0 | 36.6 | 195 |
| 9.9 - 9.11 | 38.1 | 15.4 | 38.2 | 202 |
| 10.0 - 10.2 | 39.9 | 15.8 | 42.9 | 195 |
| 10.3 - 10.5 | 41.7 | 16.5 | 44.6 | 201 |
| 10.6 - 10.8 | 44.4 | 15.6 | 47.2 | 206 |
| 10.9 - 10.11 | 46.5 | 14.3 | 49.1 | 198 |
| 11.0 - 11.2 | 49.3 | 13.9 | 51.6 | 201 |
| 11.3 - 11.5 | 48.7 | 15.0 | 51.1 | 187 |
| 11.6 - 11.8 | 53.3 | 13.1 | 56.6 | 215 |
| 11.9 - 11.11 | 52.4 | 13.5 | 55.4 | 197 |

NON-VERBAL TESTS.

| Age Group | \bar{x} | $\bar{\sigma}$ | median | N |
|--------------|-----------|----------------|--------|-----|
| 8.0 - 8.5 | 24.20 | 14.2 | 22.1 | 450 |
| 8.6 - 8.11 | 27.31 | 14.8 | 26.2 | 526 |
| 9.0 - 9.5 | 32.2 | 16.2 | 31.6 | 402 |
| 9.6 - 9.11 | 37.4 | 15.7 | 37.6 | 397 |
| 10.0 - 10.5 | 40.9 | 16.2 | 43.3 | 396 |
| 10.6 - 10.11 | 45.4 | 15.0 | 47.9 | 404 |
| 11.0 - 11.5 | 49.0 | 14.4 | 51.3 | 388 |
| 11.6 - 11.11 | 52.9 | 13.3 | 56.0 | 412 |

Estimates of Reliability (1) $r_{tt} = .95$ (K-R 21)
 (2) $r_{tt} = .96$ Tucker's correction added.

Error of Measurement
 (using (1)) $S_m = 3.2$

TABLE XX (CONTD).

ENGLISH: INTERMEDIATE.

NON-VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 10.0 | - 10.5 | 25.9 | 12.4 | 24.6 | 452 |
| 10.6 | - 10.11 | 30.3 | 11.9 | 30.9 | 482 |
| 11.0 | - 11.5 | 32.8 | 12.1 | 33.3 | 501 |
| 11.6 | - 11.11 | 36.0 | 12.6 | 36.8 | 486 |
| 12.0 | - 12.5 | 37.9 | 11.6 | 38.7 | 489 |
| 12.6 | - 12.11 | 42.1 | 11.8 | 43.3 | 499 |
| 13.0 | - 13.5 | 42.0 | 12.3 | 44.4 | 455 |
| 13.6 | - 13.11 | 44.2 | 12.4 | 46.3 | 506 |
| 14.0 | - 14.5 | 47.2 | 10.2 | 48.5 | 377 |
| 14.6 | - 14.11 | 47.6 | 10.7 | 48.3 | 423 |

Estimates of Reliability: (1) $r_{tt} = .91$ (K-R 21)

(2) $r_{tt} = .92$ (Tucker's correction added).

Error of Measurement:
(from (1))

$S_m = 4.5$

VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 10.0 | - 10.5 | 23.3 | 10.6 | 22.3 | 452 |
| 10.6 | - 10.11 | 27.1 | 10.6 | 28.0 | 482 |
| 11.0 | - 11.5 | 29.2 | 10.8 | 29.1 | 501 |
| 11.6 | - 11.11 | 32.9 | 11.0 | 33.1 | 486 |
| 12.0 | - 12.5 | 35.2 | 11.1 | 35.8 | 489 |
| 12.6 | - 12.11 | 38.9 | 11.5 | 39.2 | 499 |
| 13.0 | - 13.5 | 39.7 | 11.1 | 40.6 | 455 |
| 13.6 | - 13.11 | 41.8 | 12.0 | 42.8 | 506 |
| 14.0 | - 14.5 | 45.6 | 10.3 | 47.0 | 377 |
| 14.6 | - 14.11 | 45.6 | 11.2 | 46.8 | 423 |

Estimates of Reliability: (1) $r_{tt} = .91$ (K-R 21)

(2) $r_{tt} = .92$ Tucker's correction added

Error of Measurement:
(from (1))

$S_m = 4.6$

TABLE XX (CONTD.)

ENGLISH: INTERMEDIATE.

TOTAL SCORES.

| Age Group | \bar{x} | σ | median | N |
|--------------|-----------|----------|--------|-----|
| 10.0 - 10.5 | 49.1 | 21.4 | 47.1 | 452 |
| 10.6 - 10.11 | 57.4 | 20.8 | 58.4 | 482 |
| 11.0 - 11.5 | 62.0 | 21.5 | 61.2 | 501 |
| 11.6 - 11.11 | 68.9 | 22.1 | 70.1 | 486 |
| 12.0 - 12.5 | 72.7 | 21.1 | 73.4 | 489 |
| 12.6 - 12.11 | 81.0 | 21.7 | 83.4 | 499 |
| 13.0 - 13.5 | 81.7 | 21.9 | 85.3 | 455 |
| 13.6 - 13.11 | 86.0 | 23.3 | 89.4 | 506 |
| 14.0 - 14.5 | 92.9 | 19.1 | 95.7 | 377 |
| 14.6 - 14.11 | 93.5 | 20.6 | 95.1 | 423 |

Estimates of Reliability: (1) $r_{tt} = .95$ (K-R 21)
 (2) $r_{tt} = .96$ Tucker's correction added

Error of Measurement: $S_m = 3.4$
 (from (1))

TABLE XX (CONTD.)

ENGLISH: SENIOR

NON-VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 13.0 | - 13.5 | 27.4 | 9.0 | 27.0 | 376 |
| 13.6 | - 13.11 | 28.75 | 9.4 | 29.0 | 424 |
| 14.0 | - 14.5 | 31.01 | 9.3 | 31.2 | 455 |
| 14.6 | - 14.11 | 34.63 | 9.9 | 32.4 | 494 |
| 15.0 | - 15.5 | 32.69 | 9.9 | 33.1 | 505 |
| 15.6 | - 15.11 | 34.26 | 10.2 | 35.0 | 501 |
| 16.0 | - 16.5 | 35.47 | 9.8 | 35.7 | 564 |
| 16.6 | - 16.11 | 35.89 | 9.4 | 35.8 | 457 |
| 17.0 | - 17.5 | 36.31 | 9.6 | 36.3 | 533 |
| 17.6 | - 17.11 | 37.70 | 9.3 | 38.2 | 419 |
| 18.0 | - 18.5 | 37.11 | 10.2 | 37.8 | 368 |
| 18.6 | - 18.11 | 36.84 | 9.8 | 37 | 262 |

NON-VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|------|
| 13.0 | - 13.11 | 28.1 | 9.2 | 28.2 | 800 |
| 14.0 | - 14.11 | 31.5 | 9.6 | 31.9 | 949 |
| 15.0 | - 15.11 | 33.5 | 10.1 | 33.9 | 1006 |
| 16.0 | - 16.11 | 35.7 | 9.6 | 35.7 | 1021 |
| 17.0 | - 17.11 | 36.9 | 9.5 | 37.1 | 952 |
| 18.0 | - 18.11 | 37.0 | 10.0 | 37.4 | 630 |

Estimates of Reliability: (1) $r_{tt} = .83$ (K-R 21)
 (2) $r_{tt} = .85$ Tucker's correction added

Error of Measurement: $S_m = 6.1$
 (from (1))

TABLE XX (CONTD).

ENGLISH: SENIOR.

VERBAL TESTS.

| Age Group | \bar{x} | σ | median | N |
|--------------|-----------|----------|--------|-----|
| 13.0 - 13.5 | 26.6 | 9.6 | 25.7 | 376 |
| 13.6 - 13.11 | 29.2 | 9.8 | 28.8 | 424 |
| 14.0 - 14.5 | 32.1 | 10.6 | 32.1 | 455 |
| 14.6 - 14.11 | 32.7 | 10.9 | 32.9 | 494 |
| 15.0 - 15.5 | 33.9 | 11.4 | 33.9 | 505 |
| 15.6 - 15.11 | 35.6 | 11.1 | 35.6 | 501 |
| 16.0 - 16.5 | 37.0 | 10.9 | 37.0 | 564 |
| 16.6 - 16.11 | 38.0 | 10.1 | 38.8 | 457 |
| 17.0 - 17.5 | 38.7 | 10.9 | 39.2 | 533 |
| 17.6 - 17.11 | 40.3 | 10.2 | 40.9 | 419 |
| 18.0 - 18.5 | 40.3 | 10.3 | 40.8 | 368 |
| 18.6 - 18.11 | 40.0 | 10.2 | 40.8 | 262 |

VERBAL TESTS.

| Age group | \bar{x} | σ | median | N |
|--------------|-----------|----------|--------|------|
| 13.0 - 13.11 | 28.0 | 9.8 | 27.2 | 800 |
| 14.0 - 14.11 | 32.4 | 10.8 | 32.5 | 949 |
| 15.0 - 15.11 | 34.7 | 11.2 | 34.5 | 1006 |
| 16.0 - 16.11 | 37.5 | 10.6 | 38.1 | 1021 |
| 17.0 - 17.11 | 39.4 | 10.6 | 40.1 | 952 |
| 18.0 - 18.11 | 40.2 | 10.3 | 40.8 | 630 |

Estimates of Reliability: (1) $r_{tt} = .87$ (K-R 21)
 (2) $r_{tt} = .89$ Tucker's correction added

Error of Measurement: $S_m = 5.4$
 (from (1))

TABLE XX (CONTD.)

ENGLISH: SENIOR.

TOTAL SCORES.

| Age Group | \bar{x} | σ | median | N |
|--------------|-----------|----------|--------|-----|
| 13.0 - 13.5 | 54.0 | 17.4 | 52.6 | 376 |
| 13.6 - 13.11 | 57.9 | 17.7 | 58.1 | 424 |
| 14.0 - 14.5 | 63.0 | 18.7 | 63.0 | 455 |
| 14.6 - 14.11 | 64.6 | 19.4 | 65.6 | 494 |
| 15.0 - 15.5 | 66.6 | 19.9 | 67.3 | 505 |
| 15.6 - 15.11 | 69.8 | 20.1 | 71.0 | 501 |
| 16.0 - 16.5 | 72.4 | 19.2 | 72.4 | 564 |
| 16.6 - 16.11 | 73.9 | 17.9 | 74.8 | 457 |
| 17.0 - 17.5 | 75.0 | 19.1 | 75.1 | 533 |
| 17.6 - 17.11 | 78.0 | 18.0 | 79.6 | 419 |
| 18.0 - 18.5 | 77.4 | 19.0 | 78.9 | 368 |
| 18.6 - 18.11 | 76.9 | 18.6 | 77.2 | 262 |

TOTAL SCORES.

| Age Group | \bar{x} | σ | median | N |
|--------------|-----------|----------|--------|------|
| 13.0 - 13.11 | 56.1 | 17.7 | 55.9 | 800 |
| 14.0 - 14.11 | 63.8 | 19.1 | 64.2 | 949 |
| 15.0 - 15.11 | 68.2 | 20.0 | 69.2 | 1006 |
| 16.0 - 16.11 | 73.1 | 18.6 | 75.2 | 1021 |
| 17.0 - 17.11 | 76.3 | 18.7 | 77.0 | 952 |
| 18.0 - 18.11 | 77.2 | 18.8 | 78.0 | 630 |

Measures of Reliability: (1) r_{tt} = .92 (K-R 21)
 (2) r_{tt} = .93 Tucker's correction added

Error of Measurement:
 (from (1)) S_m = 4.4

TABLE XX (CONTD.)

AFRIKAANS: JUNIOR.

NON-VERBAL TESTS.

| Age Group | | | \bar{x} | σ | median | N |
|-----------|---|-------|-----------|----------|--------|-----|
| 8.0 | - | 8.2 | 20.3 | 11.5 | 18.0 | 112 |
| 8.3 | - | 8.5 | 19.9 | 11.4 | 18.1 | 196 |
| 8.6 | - | 8.8 | 19.3 | 11.5 | 16.9 | 279 |
| 8.9 | - | 8.11 | 22.1 | 12.4 | 19.1 | 317 |
| 9.0 | - | 9.2 | 22.6 | 15.3 | 20.9 | 170 |
| 9.3 | - | 9.5 | 25.6 | 14.5 | 24.0 | 196 |
| 9.6 | - | 9.8 | 26.3 | 14.3 | 24.5 | 236 |
| 9.9 | - | 9.11 | 29.1 | 14.6 | 28.5 | 208 |
| 10.0 | - | 10.2 | 31.5 | 14.8 | 30.4 | 189 |
| 10.3 | - | 10.5 | 32.3 | 15.5 | 32.3 | 192 |
| 10.6 | - | 10.8 | 36.5 | 15.2 | 36.8 | 211 |
| 10.9 | - | 10.11 | 36.2 | 15.4 | 36.9 | 211 |
| 11.0 | - | 11.2 | 36.8 | 14.8 | 38.5 | 186 |
| 11.3 | - | 11.5 | 38.5 | 15.7 | 40.6 | 219 |
| 11.6 | - | 11.8 | 41.5 | 15.8 | 44.3 | 217 |
| 11.9 | - | 11.11 | 43.4 | 15.6 | 45.9 | 178 |

VERBAL TESTS.

| Age Group | | | \bar{x} | σ | median | N |
|-----------|---|-------|-----------|----------|--------|-----|
| 8.0 | - | 8.5 | 20.0 | 11.4 | 18.0 | 308 |
| 8.6 | - | 8.11 | 20.8 | 12.0 | 17.9 | 596 |
| 9.0 | - | 9.5 | 24.2 | 14.2 | 22.5 | 366 |
| 9.6 | - | 9.11 | 27.7 | 14.5 | 26.7 | 444 |
| 10.0 | - | 10.5 | 31.9 | 15.1 | 31.8 | 381 |
| 10.6 | - | 10.11 | 36.3 | 15.3 | 36.8 | 422 |
| 11.0 | - | 11.5 | 37.7 | 15.3 | 39.4 | 405 |
| 11.6 | - | 11.11 | 42.4 | 15.7 | 44.8 | 395 |

Estimates of Reliability: (1) $r_{tt} = .94$ (K-R 21)
 (2) $r_{tt} = .95$ (Tucker's correction added)

Error of Measurement: $S_m = 3.6$

TABLE XX (CONTD.)

AFRIKAANS: JUNIOR.

VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N | |
|-----------|---|-----------|----------|--------|------|-----|
| 8.0 | - | 8.2 | 20.6 | 11.2 | 19.5 | 112 |
| 8.3 | - | 8.5 | 21.7 | 11.0 | 20.9 | 196 |
| 8.6 | - | 8.8 | 21.5 | 11.1 | 21.1 | 279 |
| 8.9 | - | 8.11 | 23.7 | 11.6 | 23.6 | 317 |
| 9.0 | - | 9.2 | 25.1 | 13.2 | 23.0 | 170 |
| 9.3 | - | 9.5 | 30.0 | 13.4 | 29.6 | 196 |
| 9.6 | - | 9.8 | 29.3 | 14.2 | 29.0 | 236 |
| 9.9 | - | 9.11 | 31.7 | 13.0 | 31.4 | 208 |
| 10.0 | - | 10.2 | 35.7 | 13.4 | 36.7 | 189 |
| 10.3 | - | 10.5 | 35.9 | 14.4 | 36.9 | 192 |
| 10.6 | - | 10.8 | 38.9 | 14.5 | 39.3 | 211 |
| 10.9 | - | 10.11 | 40.4 | 13.6 | 41.4 | 211 |
| 11.0 | - | 11.2 | 41.0 | 14.3 | 41.7 | 186 |
| 11.3 | - | 11.5 | 42.6 | 14.1 | 43.7 | 219 |
| 11.6 | - | 11.8 | 45.2 | 14.5 | 46.3 | 217 |
| 11.9 | - | 11.11 | 47.5 | 13.6 | 49.9 | 178 |

VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N | |
|-----------|---|-----------|----------|--------|------|-----|
| 8.0 | - | 8.5 | 21.3 | 11.1 | 20.5 | 308 |
| 8.6 | - | 8.11 | 22.6 | 11.4 | 21.8 | 596 |
| 9.0 | - | 9.5 | 27.7 | 13.5 | 26.2 | 366 |
| 9.6 | - | 9.11 | 30.4 | 13.7 | 30.3 | 444 |
| 10.0 | - | 10.5 | 35.8 | 13.9 | 36.7 | 381 |
| 10.6 | - | 10.11 | 39.7 | 14.0 | 40.4 | 422 |
| 11.0 | - | 11.5 | 41.9 | 15.0 | 42.8 | 405 |
| 11.6 | - | 11.11 | 46.2 | 14.1 | 48.4 | 395 |

Estimates of Reliability: (1) r_{tt} = .94 (K-R 21)
 (2) r_{tt} = .95 (Tucker's correction added)

Error of Measurement: S_m = 3.7

TABLE XX (CONTD.)

AFRIKAANS: JUNIOR.

TOTAL SCORES.

| Age Group | | | \bar{x} | σ | median | N |
|-----------|---|-------|-----------|----------|--------|-----|
| 8.0 | - | 8.2 | 40.8 | 21.2 | 36.8 | 112 |
| 8.3 | - | 8.5 | 41.6 | 20.6 | 40.2 | 196 |
| 8.6 | - | 8.8 | 40.7 | 20.3 | 37.6 | 279 |
| 8.9 | - | 8.11 | 45.7 | 22.2 | 43.6 | 317 |
| 9.0 | - | 9.2 | 47.7 | 25.2 | 44.8 | 170 |
| 9.3 | - | 9.5 | 55.6 | 27.2 | 52.1 | 196 |
| 9.6 | - | 9.8 | 55.5 | 25.0 | 54.3 | 236 |
| 9.9 | - | 9.11 | 60.8 | 25.6 | 62.5 | 208 |
| 10.0 | - | 10.2 | 67.2 | 26.1 | 66.6 | 189 |
| 10.3 | - | 10.5 | 68.3 | 28.2 | 65.2 | 192 |
| 10.6 | - | 10.8 | 75.4 | 28.1 | 74.5 | 211 |
| 10.9 | - | 10.11 | 76.7 | 26.8 | 79.7 | 211 |
| 11.0 | - | 11.2 | 77.8 | 27.1 | 77.8 | 186 |
| 11.3 | - | 11.5 | 81.1 | 28.2 | 83.9 | 219 |
| 11.6 | - | 11.8 | 86.7 | 28.6 | 91.3 | 217 |
| 11.9 | - | 11.11 | 90.9 | 27.6 | 96.4 | 178 |

TOTAL SCORES.

| Age Group | | | \bar{x} | σ | median | N |
|-----------|---|-------|-----------|----------|--------|-----|
| 8.0 | - | 8.5 | 41.3 | 20.8 | 38.3 | 308 |
| 8.6 | - | 8.11 | 43.4 | 21.5 | 40.5 | 596 |
| 9.0 | - | 9.5 | 52.0 | 26.0 | 48.4 | 366 |
| 9.6 | - | 9.11 | 58.8 | 25.9 | 56.6 | 444 |
| 10.0 | - | 10.5 | 67.7 | 27.2 | 66.4 | 381 |
| 10.6 | - | 10.11 | 76.1 | 27.4 | 77.3 | 422 |
| 11.0 | - | 11.5 | 79.6 | 27.8 | 82.0 | 405 |
| 11.6 | - | 11.11 | 88.6 | 28.2 | 94.1 | 395 |

Estimates of Reliability: (1) r_{tt} = .97 (K-R 21)

(2) r_{tt} = .97 (With Tucker's correction):

Error of Measurement: S_m = 2.7

TABLE XX (CONTD.)

AFRIKAANS: INTERMEDIATE.

NON-VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 10.0 | - 10.5 | 20.2 | 10.0 | 18.7 | 418 |
| 10.6 | - 10.11 | 21.4 | 10.3 | 19.3 | 485 |
| 11.0 | - 11.5 | 24.7 | 11.1 | 24.1 | 508 |
| 11.6 | - 11.11 | 27.1 | 11.2 | 27.0 | 496 |
| 12.0 | - 12.5 | 29.4 | 12.0 | 29.6 | 485 |
| 12.6 | - 12.11 | 33.9 | 12.3 | 35.0 | 459 |
| 13.0 | - 13.5 | 34.7 | 12.4 | 35.7 | 489 |
| 13.6 | - 13.11 | 36.0 | 12.1 | 37.2 | 521 |
| 14.0 | - 14.5 | 38.2 | 11.8 | 38.8 | 406 |
| 14.6 | - 14.11 | 39.8 | 12.5 | 40.7 | 394 |

Estimates of Reliability: (1) $r_{tt} = .91$ (K-R 21)

(2) $r_{tt} = .92$ (Tucker's correction added)

Error of Measurement: $S_m = 4.5$

VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 10.0 | - 10.5 | 20.12 | 9.7 | 19.1 | 418 |
| 10.6 | - 10.11 | 22.30 | 9.9 | 21.0 | 485 |
| 11.0 | - 11.5 | 25.32 | 10.4 | 24.2 | 508 |
| 11.6 | - 11.11 | 28.28 | 11.1 | 28.4 | 496 |
| 12.0 | - 12.5 | 31.17 | 11.8 | 31.0 | 485 |
| 12.6 | - 12.11 | 35.45 | 12.5 | 34.5 | 459 |
| 13.0 | - 13.5 | 36.60 | 12.0 | 37.7 | 489 |
| 13.6 | - 13.11 | 38.91 | 12.4 | 39.7 | 521 |
| 14.0 | - 14.5 | 41.26 | 11.7 | 41.7 | 406 |
| 14.6 | - 14.11 | 42.95 | 12.4 | 42.2 | 394 |

Estimates of Reliability: (1) $r_{tt} = .91$ (K-R 21)

(2) $r_{tt} = .92$ (Tucker's correction added)

Error of Measurement: $S_m = 4.4$

TABLE XX (CONTD.)

AFRIKAANS: INTERMEDIATE.

TOTAL SCORE.

| Age Group | \bar{x} | σ | median | N |
|--------------|-----------|----------|--------|-----|
| 10.0 - 10.5 | 40.3 | 18.6 | 38.3 | 418 |
| 10.6 - 10.11 | 43.7 | 18.7 | 41.2 | 485 |
| 11.0 - 11.5 | 50.0 | 20.1 | 48.7 | 508 |
| 11.6 - 11.11 | 55.4 | 20.8 | 55.2 | 496 |
| 12.0 - 12.5 | 60.6 | 22.4 | 60.2 | 485 |
| 12.6 - 12.11 | 69.3 | 23.3 | 68.6 | 459 |
| 13.0 - 13.5 | 71.3 | 22.9 | 72.8 | 489 |
| 13.6 - 13.11 | 74.8 | 22.9 | 77.1 | 521 |
| 14.0 - 14.5 | 79.5 | 22.0 | 79.8 | 406 |
| 14.6 - 14.11 | 82.8 | 23.50 | 81.7 | 394 |

Estimates of Reliability: (1) r_{tt} = .95 (K-R 21)
(2) r_{tt} = .96 (Tucker's correction added)

Error of Measurement: = 3.3

TABLE XX (CONTD.)

AFRIKAANS : SENIOR.

NON-VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 13.0 | - 13.5 | 22.4 | 8.5 | 20.6 | 355 |
| 13.6 | - 13.11 | 22.9 | 9.1 | 21.9 | 445 |
| 14.0 | - 14.5 | 24.9 | 8.9 | 23.6 | 493 |
| 14.6 | - 14.11 | 25.2 | 9.2 | 24.6 | 516 |
| 15.0 | - 15.5 | 25.8 | 9.6 | 25.5 | 512 |
| 15.6 | - 15.11 | 26.1 | 9.5 | 25.8 | 507 |
| 16.0 | - 16.5 | 27.6 | 9.3 | 27.7 | 568 |
| 16.6 | - 16.11 | 29.2 | 9.4 | 29.2 | 527 |
| 17.0 | - 17.5 | 29.8 | 9.4 | 29.9 | 560 |
| 17.6 | - 17.11 | 30.7 | 10.2 | 30.8 | 557 |
| 18.0 | - 18.5 | 31.9 | 10.0 | 32.2 | 514 |
| 18.6 | - 18.11 | 32.4 | 10.0 | 32.1 | 397 |

NON-VERBAL TESTS.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|------|
| 13.0 | - 13.11 | 22.6 | 8.8 | 21.3 | 800 |
| 14.0 | - 14.11 | 24.6 | 9.1 | 24.2 | 1009 |
| 15.0 | - 15.11 | 25.9 | 9.6 | 25.6 | 1019 |
| 16.0 | - 16.11 | 28.4 | 9.4 | 28.6 | 1096 |
| 17.0 | - 17.11 | 30.2 | 9.8 | 30.3 | 1117 |
| 18.0 | - 18.11 | 32.1 | 10.0 | 32.2 | 911 |

Estimates of Reliability: (1) $r_{tt} = .84$ (K-R 21)
 (2) $r_{tt} = .86$ (Tucker's correction added)

Error of Measurement: $S_m = 6.1$

TABLE XX (CONTD.)

AFRIKAANS: SENIOR.

VERBAL TESTS.

| Age Group | | | \bar{x} | σ | median | N |
|-----------|---|-------|-----------|----------|--------|-----|
| 13.0 | - | 13.5 | 23.36 | 9.3 | 22.4 | 355 |
| 13.6 | - | 13.11 | 26.05 | 9.6 | 23.2 | 445 |
| 14.0 | - | 14.5 | 26.72 | 9.7 | 25.9 | 493 |
| 14.6 | - | 14.11 | 28.61 | 10.6 | 28.2 | 516 |
| 15.0 | - | 15.5 | 29.62 | 10.6 | 29.7 | 512 |
| 15.6 | - | 15.11 | 30.68 | 11.0 | 30.0 | 507 |
| 16.0 | - | 16.5 | 33.01 | 11.0 | 32.6 | 569 |
| 16.6 | - | 16.11 | 33.92 | 11.0 | 34.5 | 527 |
| 17.0 | - | 17.5 | 35.36 | 11.1 | 35.3 | 560 |
| 17.6 | - | 17.11 | 37.32 | 12.0 | 38.1 | 557 |
| 18.0 | - | 18.5 | 38.43 | 11.7 | 38.8 | 514 |
| 18.6 | - | 18.11 | 39.24 | 11.8 | 40.4 | 397 |

VERBAL TESTS.

| Age Group | | | \bar{x} | σ | median | N |
|-----------|---|-------|-----------|----------|--------|------|
| 13.0 | - | 13.11 | 24.3 | 9.5 | 22.8 | 800 |
| 14.0 | - | 14.11 | 27.7 | 10.2 | 26.9 | 1009 |
| 15.0 | - | 15.11 | 30.2 | 10.8 | 29.9 | 1019 |
| 16.0 | - | 16.11 | 33.5 | 11.0 | 33.3 | 1096 |
| 17.0 | - | 17.11 | 36.3 | 11.6 | 36.8 | 1117 |
| 18.0 | - | 18.11 | 38.7 | 11.8 | 39.7 | 911 |

Estimates of Reliability: (1) r_{tt} = .88 (K-R 21)
 (2) r_{tt} = .90 Tucker's correction added

Error of Measurement: S_m = 5.1

TABLE XX (CONTD.)

AFRIKAANS: SENIOR.

TOTAL SCORES.

| Age Group | | \bar{x} | σ | median | N |
|-----------|---------|-----------|----------|--------|-----|
| 13.0 | - 13.5 | 44.8 | 16.6 | 42.4 | 355 |
| 13.6 | - 13.11 | 47.9 | 17.3 | 45.9 | 455 |
| 14.0 | - 14.5 | 50.7 | 17.2 | 49.2 | 493 |
| 14.6 | - 14.11 | 53.9 | 18.5 | 52.9 | 516 |
| 15.0 | - 15.5 | 55.4 | 18.9 | 54.9 | 512 |
| 15.6 | - 15.11 | 56.8 | 19.1 | 55.7 | 507 |
| 16.0 | - 16.5 | 60.6 | 18.8 | 59.0 | 569 |
| 16.6 | - 16.11 | 63.1 | 18.9 | 63.9 | 527 |
| 17.0 | - 17.5 | 65.1 | 18.9 | 65.0 | 560 |
| 17.6 | - 17.11 | 68.0 | 20.8 | 68.8 | 557 |
| 18.0 | - 18.5 | 70.1 | 20.2 | 70.2 | 514 |
| 18.6 | - 18.11 | 71.7 | 20.3 | 72.9 | 397 |

TOTAL SCORES.

| Age Group | | \bar{x} | σ | median | N |
|-----------|-------|-----------|----------|--------|------|
| 13.0 | 13.11 | 46.5 | 17.1 | 44.3 | 800 |
| 14.0 | 14.11 | 52.3 | 18.0 | 51.0 | 1009 |
| 15.0 | 15.11 | 56.1 | 19.0 | 55.2 | 1019 |
| 16.0 | 16.11 | 61.8 | 18.9 | 61.6 | 1096 |
| 17.0 | 17.11 | 66.6 | 20.0 | 67.3 | 1117 |
| 18.0 | 18.11 | 70.8 | 20.3 | 71.6 | 911 |

Estimates of Reliability: (1) r_{tt} = .92 (K-R 21)
 (2) r_{tt} = .93 Tucker's
 correction
 added

Error of Measurement: S_m = 4.2

ANNEXURE I.

NEW S.A. GROUP TEST

Final Form

SCHOOLS IN SAMPLE

| <u>No.</u> | <u>Name.</u> |
|------------|---|
| 001 | Brebner High, Bloemfontein |
| 002 | Christian Bros. College (High) Bloemfontein |
| 003 | Cornelia Junior Hoër |
| 004 | Dagbreek Primêr, Welkom |
| 005 | Eunice Primary, Bloemfontein |
| 006 | Fauresmith Hoër |
| 007 | Ficksburg Primêr |
| 008 | Frankfort Hoër |
| 009 | Grey-Kollege Hoër, Bloemfontein |
| 010 | Grey-Kollege Primêr, Bloemfontein |
| 011 | Harrismith Primêr |
| 012 | Hendrik Potgieter Hoër, Reddersburg |
| 013 | Hennenman Hoër |
| 014 | Jacobsdal Hoër |
| 015 | Koot Niemann Hoër, Dist. Bloemfontein |
| 016 | Kroonheuwel Primêr, Kroonstad |
| 017 | Kroonstad Volksskool |
| 018 | Lakeview Primêr, Dist. Bloemfontein |
| 019 | Marquard Hoër |
| 020 | Meadows Primêr |
| 021 | Open Primêr, Reitz |
| 022 | Reitz Hoër |
| 023 | Sarel Cilliers Hoër, Koppies |
| 024 | Senekal hoër |
| 025 | Sentrale Hoër, Bloemfontein |
| 026 | Smithfield Hoër |
| 027 | Theron Primêr, oor Theunissen |
| 028 | Welkom Primêr |
| 029 | Wepener Hoër |
| 030 | Willem Postma Primêr, Bloemfontein |
| 031 | Willem Pretorius Hoër, Heilbron |
| 032 | Zastron Hoër |
| 033 | Addington Infants', Durban |
| 034 | Bellair Primary, Durban |
| 035 | Boys' Model Primary, Pietermaritzburg |
| 036 | Bushlands Primary, Durban |
| 037 | Durban Girls' High |
| 038 | Durban High |
| 039 | Durban Preparatory High |
| 040 | Epsom Rd. Boys' Secondary, Durban |
| 041 | Estcourt Augustinian Convent |
| 042 | Fynnland Primary, Durban |
| 043 | Girls' College, Durban |
| 044 | Glencoe High |
| 045 | Glencoe Primary |
| 046 | Glenwood Infants', Durban |
| 047 | Greytown High, Greytown |
| 048 | Hlobane Primary |
| 049 | Holy Rosary Convent, Dundee |
| 050 | Kingsway High, Amanzimtoti |
| 051 | Malvern High, Malvern |
| 052 | Malvern Junior |
| 053 | Margate Primary |
| 054 | Maritzburg College, Pietermaritzburg |

| <u>No.</u> | <u>Name.</u> |
|------------|---|
| 055 | Merchiston Preparatory, Pietermaritzburg |
| 056 | Middelrus Primêr |
| 057 | Mont Clair Primary, Durban |
| 058 | Newcastle Junior |
| 059 | Northlands Boys' High, Durban |
| 060 | Northlands Girls' High, Durban |
| 061 | Nuwe Republiek Primêr, Vryheid |
| 062 | Open Air Primary, Durban |
| 063 | Park Rynie Primary |
| 064 | Park View Primary, Durban |
| 065 | Pietermaritzburg Girls' High |
| 066 | Port Natalse Hoër, Durban |
| 067 | Port Shepstone High |
| 068 | Port Shepstone Primary |
| 069 | Red Hill Primary, Durban |
| 070 | Richmond Primary |
| 071 | St. Agnes' Primary, Durban |
| 072 | St. Anne's Diocesan College, Hilton Road |
| 073 | St. Joseph's Primary, Durban |
| 074 | St. Mary's Primary, Pietermaritzburg |
| 075 | Scottsville Primary, Pietermaritzburg |
| 076 | Voortrekker Hoër, Pietermaritzburg |
| 077 | Vryheid High |
| 078 | Westville Primary |
| 079 | The Grahamstown Training College |
| 080 | The Johannesburg College of Education |
| 081 | Die Pretoriase Normaalkollege |
| 082 | Opleidingskollege, Wellington |
| 083 | Constantia-Verbeteringskool, Pk. Retreat |
| 084 | Elizabeth Conradie-skool, oor Kimberley |
| 085 | Hoërberoepskool vir Seuns, oor Kimberley |
| 086 | Hoër Handelskool, Paarl |
| 087 | Hoër Huishoudskool, Christiana |
| 088 | Hoër Tegniëse Skool, Drostdy, Worcester |
| 089 | Hoër Tegniëse Skool Tom Naude, Pietersburg |
| 090 | Hoër Huishoudskool, Bethlehem |
| 091 | Nywerheidskool Dewetsdorp |
| 092 | Nywerheidskool Oudtshoorn |
| 093 | Nywerheidskool Queenstown |
| 094 | Nywerheidskool Tempe |
| 095 | Carinus Nursing College, Cape Town |
| 096 | Pretoriase Verpleegsters |
| 097 | Nursing College, Durban |
| 098 | Witwatersrandse Verpleegstersopleidingskollege, Germiston |
| 099 | Arcadia Primary, Pretoria |
| 100 | Benoni High School |
| 101 | Benoni West Primary School |
| 102 | Bloemhof Sekondêre Skool |
| 103 | Boksburg Central Primary School |
| 104 | Boksburg High School |
| 105 | Brakpan E.M. High School |
| 106 | Brakpan-Oos A.M. Laerskool |
| 107 | Brandwag Hoër, Benoni |
| 108 | Brentwood Park Laer, Benoni |
| 109 | Brits Laer |
| 110 | Burgher Right Primary, Pretoria-West |
| 111 | Burghersdorp Laer, oor Lichtenburg |
| 112 | Burghurshoop Laer, Krugersdorp |
| 113 | Capital Park Primary School, Pretoria |
| 114 | Christiaan Beyers Laerskool, Springs |
| 115 | Cottesloe Laerskool, Johannesburg |
| 116 | Crosby Hoërskool, Johannesburg |
| 117 | Cullinan Laer |

| <u>No.</u> | <u>Name.</u> |
|------------|--|
| 118 | Cyrildene Primary School, Johannesburg |
| 119 | Dalview Laerskool, Brakpan |
| 120 | Danie Malan Laer, Pretoria-Noord |
| 121 | Derby Laer |
| 122 | Die Eendrag Laerskool, Germiston |
| 123 | Die Fakkel Hoërskool, Johannesburg |
| 124 | Die Kleine Fleur Laerskool, Johannesburg |
| 125 | Die President Hoërskool, Germiston |
| 126 | Discovery Laerskool |
| 127 | Doornfontein Primary School, Johannesburg |
| 128 | Edenvale Laerskool, oor Germiston |
| 129 | Eldorado Laerskool |
| 130 | Eloffsdal Laer, Pretoria |
| 131 | Elsburg Laer |
| 132 | E.P. Baumann Primary School, Johannesburg |
| 133 | Euclid St. Laerskool, Vanderbijlpark |
| 134 | Ferndale Laerskool, Johannesburg |
| 135 | Florida Hoër, Florida |
| 136 | Forest High School, Johannesburg |
| 137 | Franklin D. Roosevelt Park Primary School, Johannesburg |
| 138 | Gen. Andries Brink Laer, Voortrekkerhoogte |
| 139 | Gen. Nicolaas Smit, Pk. Hercules |
| 140 | Gen. Smuts High School, Vereeniging |
| 141 | Germiston Boys' High School, Germiston |
| 142 | Germiston Central Primary School |
| 143 | Germiston Girls' High School |
| 144 | Goedehoop Hoërskool, Germiston |
| 145 | Greenside Extension Primary School, Johannesburg |
| 146 | Groblersdal Laer |
| 147 | Gravelotte Laer |
| 148 | H.A. Jack Primary School, Johannesburg |
| 149 | Hamilton Primary, Pretoria |
| 150 | Handhaver Laerskool, Vereeniging |
| 151 | Heidelberg Hoër Volksskool |
| 152 | Helpmekaar Hoër Meisieskool, Johannesburg |
| 153 | Helpmekaar Hoër Seunskool, Johannesburg |
| 154 | Hercules Hoër, Pk. Hercules |
| 155 | Hill Extension Primary School, Johannesburg |
| 156 | Hoogenhout Hoërskool, Bethal |
| 157 | Hugenote Hoër Meisieskool, Springs |
| 158 | Hugenote Hoër Seunskool, Springs |
| 159 | Jeppe Boys' High School, Johannesburg |
| 160 | Jeppe Girls' High School, Johannesburg |
| 161 | Johannesburg Girls' High School |
| 162 | Johann Rissik Laerskool, Johannesburg |
| 163 | John Mitchell Primary School, Johannesburg |
| 164 | Kenilworth Junior School, Johannesburg |
| 165 | Kensington Hoërskool, Johannesburg |
| 166 | Kensington Ridge Primary School, Johannesburg |
| 167 | Kensington South Primary School, Johannesburg |
| 168 | King Edward VII High School, Johannesburg |
| 169 | King Edward VII Preparatory School, Johannesburg |
| 170 | Kingswood Laer No. 159 |
| 171 | Kleinspan Laerskool, Ermelo |
| 172 | Klerksdorp Hoër |
| 173 | Kromdraai Laerskool No. 76, Kromdraaistatie |
| 174 | Krugersdorp High School |
| 175 | Krugersdorp-Noord Skool |
| 176 | Lagersdrift Sekondêre |
| 177 | Leicester Road Primary School, Johannesburg |
| 178 | Lichtenburg Hoër |
| 179 | Louis Trichardt Laer |
| 180 | Louis Trichardt Hoër |

| <u>No.</u> | <u>Name.</u> |
|------------|--|
| 181 | Lyndhurst Sekondêre Skool, Johannesburg |
| 182 | Malvern High School, Johannesburg |
| 183 | Margaret Brammer Primary School, Germiston |
| 184 | Maricodraai Laer No. 74, Pk. Maricodraai |
| 185 | M.W. de Wet Laerskool, Germiston |
| 186 | Michael Brink Hoër, Pretoria |
| 187 | Modderbee Laerskool, Benoni |
| 188 | Monument Hoërskool, Krugersdorp |
| 189 | Mooirivier Laerskool, Potchefstroom |
| 190 | Naauwpoort Laer No. 214, Rustenburg |
| 191 | Nelspruit Hoër |
| 192 | Newlands A.M. Hoër, Johannesburg |
| 193 | Noord-Oos Rand Hoërskool, Pk. Petit |
| 194 | Nu-Muckleneuk Laer, Pretoria |
| 195 | Nuwe Bethal Laerskool, Pk. Bethalstasie |
| 196 | Nuwe Boons Sentraal Laer, Boons |
| 197 | Nylstroom Hoër |
| 198 | Oliver Lodge Primary School, Van der Bijlpark |
| 199 | Oom Paul Sekondêre Skool, Rustenburg |
| 200 | Oost Eind Laer, Pretoria |
| 201 | Orange Grove Primary School, Johannesburg |
| 202 | Orban Laerskool, Johannesburg |
| 203 | Park Senior School, Turffontein |
| 204 | Parktown Boys' High, Johannesburg |
| 205 | Parktown Girls' High, Johannesburg |
| 206 | Parkview Junior School, Johannesburg |
| 207 | Peacehaven Laerskool, Vereeniging |
| 208 | Piet Retief Laer |
| 209 | Pietersburg A.M. Laer |
| 210 | Pietersburg E.M. Primary School |
| 211 | Pietersburg Hoër |
| 212 | Pongola Laerskool, oor Vryheid |
| 213 | Potchefstroom Boys' High |
| 214 | Potchefstroom Gimnasium |
| 215 | Potchefstroom Girls' High |
| 216 | President Kruger Laer, Pretoria |
| 217 | Pretoria Afrikaanse Hoër Meisieskool. |
| 218 | Pretoria Afrikaanse Hoër Seunskool. |
| 219 | Pretoria Boys' High |
| 220 | Pretoria Girls' High |
| 221 | Pretoria-Noord Hoër |
| 222 | Pretoria-Wes Hoër |
| 223 | Primrose E.M. Primary School, oor Germiston |
| 224 | Primrose-Oos A.M. Laerskool, Primrose |
| 225 | Rapportryer Laer, Randfontein |
| 226 | Riebeeck Hoër, Randfontein |
| 227 | Riviera A.M. Laer, Pretoria |
| 228 | Robert Hicks Primary, Pretoria |
| 229 | Roodepoort A.M. Laer, Roodepoort |
| 230 | Roodepoort Town Primary School |
| 231 | Rooseveld High School, Johannesburg |
| 232 | Rosettenville Central Primary School, Johannesburg |
| 233 | Rossmore E.M. Primary School, Johannesburg |
| 234 | Rust-der-Winter, oor Pretoria |
| 235 | Rustenburg Junior |
| 236 | Rustenburg Hoër |
| 237 | Saxonwold Primary School, Johannesburg |
| 238 | Shebamyn Laer, Pk. Sheba |
| 239 | Simon Bekker Laer, Pretoria-Wes |
| 240 | Sir John Adamson High School, Johannesburg |
| 241 | Spes Bona Primary School, Johannesburg |
| 242 | Springs Boys' High, Spring |
| 243 | Springs Girls' High |
| 244 | Springs West Primary School |

| <u>No.</u> | <u>Name.</u> |
|------------|--|
| 245 | Stoffberg Hoër Meisieskool |
| 246 | Stoffberg Hoër Seunskool |
| 247 | Struben Laerskool, Langlaagte |
| 248 | (South Hills E.M. School (Suidheuwels Laerskool, Johannesburg |
| 249 | Sundra Laerskool |
| 250 | Sunnyside Primary, Pretoria |
| 251 | Toitskraal Laer, Marble Hall |
| 252 | Tonteldoos Laer, Pk. Tonteldoos |
| 253 | Turffontein Laer A.M., Johannesburg |
| 254 | Tweefontein Laer, Pk. Coalville |
| 255 | Unie Laer, Pk. Klerksdorp |
| 256 | Vaalkop Laer No. 66 |
| 257 | Van der Merwe, Ermelo |
| 258 | Venterspos Laer |
| 259 | Vereeniging Hoër |
| 260 | Villieria Laer, Pretoria |
| 261 | Volksrust Hoër |
| 262 | Volksrust Pionier Laer |
| 263 | Voortrekker Hoër, Boksburg |
| 264 | Warmbad Laer |
| 265 | Welverdiend Laer |
| 266 | Westonaria Laer |
| 267 | Wolmaranstad Hoër |
| 268 | Yeoville Boys' Primary, Johannesburg |
| 269 | Zebediela Laer |
| 270 | Zeerust Hoër |
| 271 | Aberdeen Laer |
| 272 | Alexandria Hoër |
| 273 | Amalinda Primary, East London |
| 274 | Andalusia Laer |
| 275 | Assumption Convent, Grahamstown |
| 276 | Barkley-Oos Hoër |
| 277 | Beaufort-Wes Hoër |
| 278 | Beaufort-Wes Meisies Laer |
| 279 | Beaufort-Wes Seuns Laer |
| 280 | Bellevue Hoër Meisie, Somerset-Oos |
| 281 | Bellville Laer |
| 282 | Bergvliet Primary |
| 283 | Berlin Sekondêre |
| 284 | Bloemhof Hoër Meisie, Stellenbosch |
| 285 | Bredasdorp Hoër |
| 286 | Buitekant St. High (Cape Town High School) |
| 287 | Burghersdorp Laer |
| 288 | Caledon Laer |
| 289 | Cambridge High |
| 290 | Cambridge Junior |
| 291 | Charlie Hofmeyer Hoër |
| 292 | Clarendon Park Primary, Port Elizabeth |
| 293 | Claremont Primary |
| 294 | Collegiate High, Port Elizabeth |
| 295 | Collegiate Primary, Port Elizabeth |
| 296 | De Aar Hoër |
| 297 | De Aar Laer |
| 298 | Despatch Hoër |
| 299 | Diamantveld Hoër |
| 300 | Diamantveld Laer, Kimberley |
| 301 | Dirkie Uys Laer, Morreesburg |
| 302 | |
| 303 | Dr. Viljoen Laer, Port Elizabeth |
| 304 | Durbanville Hoër |
| 305 | East London Girls' High |
| 306 | East London Girls' Prep. |
| 307 | Elandsfontein Laer, Pk. Heights |
| 308 | Mjanyana Engcoba Primary School, via Idutywa |

| <u>No.</u> | <u>Name.</u> |
|------------|--|
| 309 | Ethel Valentine Laer, Port Elizabeth |
| 310 | Excelsior Laer, Port Elizabeth |
| 311 | George Meisies Laer |
| 312 | George Seuns Laer |
| 313 | Gill Kollege, Somerset-Oos |
| 314 | Goedgeloof Laer, Humansdorp |
| 315 | Goedgenoeg Laer |
| 316 | Goodwood Laer |
| 317 | Graeme College, <u>Grahamstown</u> |
| 318 | Green and Sea Point Boys' Junior |
| 319 | Grens Hoër, Oos-Londen |
| 320 | Grens Laer, Oos-Londen |
| 321 | Grey High, Port Elizabeth |
| 322 | Hendrik Louw Laer, Strand |
| 323 | Hoër Volksskool, Graaff-Reinet |
| 324 | Hogsback Primary, Via Alice |
| 325 | Humansdorp Hoër |
| 326 | Hugorust Oefenskool |
| 327 | Jan van Riebeeck Hoër |
| 328 | Jan van Riebeeck Laer, Kaapstad |
| 329 | Junior Grey, Port Elizabeth |
| 330 | Karatara Laer, dist. Knysna |
| 331 | Karredouw Hoër |
| 332 | Kimberley Boys' High |
| 333 | Kimberley Girls' High |
| 334 | Kirkwood Laer |
| 335 | Klipfontein Laer, Calvinia |
| 336 | Kokstad Hoër |
| 337 | Krigestasië Laer, Oor Caledon |
| 338 | Kuruman Laer |
| 339 | Stulting Primary School, Humansdorp |
| 340 | Ladismith Hoër, Ladismith, K.P. |
| 341 | Lansdowne Hoër |
| 342 | La Rochelle Girls' Primary, Paarl |
| 343 | Lehating Laer, Kuruman |
| 344 | Leipoldville Laer, oor Sandberg |
| 345 | Libode Laer |
| 346 | Mafeking Laer |
| 347 | Muir College, Uitenhage |
| 348 | Maitland Hoër |
| 349 | Martin Oosthuizen Hoër, Kakamas |
| 350 | Mc.Lachlan Laer, Joubertina, K.P. |
| 351 | Molteno Hoër |
| 352 | Montagu Hoër |
| 353 | Montagu Laer |
| 354 | Mount Currie Primary |
| 355 | Murraysburg Hoër |
| 356 | Namakwaland Hoër, Springbok, K.P. |
| 357 | Nassau Hoërskool, Mowbray, K.P. |
| 358 | North End Grey Primary, Port Elizabeth |
| 359 | Oatlands Rd. Prep., Grahamstown |
| 360 | Observatory Boys' High, Mowbray, C.P. |
| 361 | Observatory Girls' High |
| 362 | Orange Grove Sekondêre, East London |
| 363 | Oranje Laer, Maitland |
| 364 | Parow Hoër |
| 365 | Paul Kruger Hoër, Steynsburg |
| 366 | Paul Roos Hoër Seuns, Stellenbosch |
| 367 | Pearson Hoër, Port Elizabeth |
| 368 | Pinelands Primary |
| 369 | Plumstead Primary |
| 370 | Porterville Hoër |
| 371 | Quenstown Voorbereidingskool |
| 372 | Raymond Laer, Parow |
| 373 | Regent St. Primary, Woodstock |

| <u>No.</u> | <u>Name.</u> |
|------------|--|
| 374 | Retreat Hoërskool |
| 375 | Rhenish Girls' High, Stellenbosch |
| 376 | Riebeeck College, Uitenhage |
| 377 | Riviersonderend Hoër, Caledon |
| 378 | Rondebosch Boys' High |
| 379 | Rondebosch Boys' Junior |
| 380 | Rustenburg Girls' High, Rondebosch |
| 381 | Rustenburg Girls' Junior, Rondebosch |
| 382 | Sacred Heart R.C. Primary |
| 383 | Selborne High, East London |
| 384 | Sentraal Laer, Kimberley |
| 385 | Sevenfountains Laer, via Grahamstad |
| 386 | South African College School, Cape Town |
| 387 | Southdene Laer, Port Elizabeth |
| 388 | St. Agnes Primary, Woodstock |
| 389 | St. Michael's Primary, Rondebosch |
| 390 | Sydenham Primary |
| 391 | Tamboerskloof Primary |
| 392 | Umtata High |
| 393 | Union High, Graaff-Reinet |
| 394 | Vaalhartz Hoër, Andalusia |
| 395 | Victoria Girls' High, Grahamstown |
| 396 | Victoria Park Grey Primary, Port Elizabeth |
| 397 | Victoria-Wes Hoër |
| 398 | Vincent Laer, East London |
| 399 | Voorspoed Laer |
| 400 | Vredehoek Primary |
| 401 | Vryburg Hoër |
| 402 | Waterford Laer, oor Wolwefontein |
| 403 | Westlake Primary, Muizenberg |
| 404 | Woodstock High |
| 405 | Worcester Seuns Laer |
| 406 | |
| 407 | Wynberg Boys' High |
| 408 | Wynberg Girls' High |
| 409 | Ysterplaat Laer |
| 410 | Potchefstroom Universiteit |
| 411 | Rhodes University |
| 412) | |
| 413) | Stellenbosch University |
| 414) | |
| 415) | Witwatersrand University |
| 416 | Hoër Handelskool Bethlehem |
| 417 | Christian Brothers' College, Sea Point |
| 418 | Assumption Convent High, Grahamstown |
| 419 | Convent of the Holy Rosary, Springfield |
| 420 | Convent of the Sacred Heart, Cradock |
| 421 | Diocesan School for Girls, Grahamstown |
| 422 | Holy Cross Convent, Aliwal North |
| 423 | Holy Cross Convent, Maitland |
| 424 | Micklefield School |
| 425 | Nazareth House, Kimberley |
| 426 | St. Andrew's College, Grahamstown |
| 427 | St. Joseph's College, Rondebosch |
| 428 | St. Mary's Convent, Cape |
| 429 | Convent High, Durban |
| 430 | Marist Brothers', Durban |
| 431 | Michaelhouse |
| 432 | Kearsney College, Natal |
| 433 | Kingsmead, Johannesburg |
| 434 | Nazareth House, Johannesburg |
| 435 | Randfontein Business College |
| 436 | The Ridge Prep., Johannesburg |
| 437 | St. Dominic's Convent |

| <u>No.</u> | <u>Name.</u> |
|------------|---|
| 438) | |
| 439) | St. John's College, Johannesburg |
| 440) | |
| 441 | St. Paul's, Johannesburg |
| 442 | St. Ursula's Convent, Krugersdorp |
| 443 | Uplands Preparatory |
| 444 | Crescent Private School |
| 445 | Cape Technical College |
| 446 | Commercial School, Johannesburg |
| 447 | East London Technical College |
| 448 | Natal Technical College |
| 449 | Pietermaritzburg Technical College |
| 450) | |
| 451) | Pretoria Technical College |
| 452 | Trade School, Johannesburg |
| 453 | Vrystaatse Tegniese Kollege |
| 454 | Assumption Convent High, Bedford |
| 455 | Loreto Convent, Sea Point |
| 456 | Technical College of the Northern Cape |
| 457 | Ingmagstasie |
| 458) | |
| 459) | St. John's Preparatory School, Johannesburg |
| 460 | St. Mary's D.S.G., Pretoria |
| 461) | |
| 462) | Pretoria Tech. Part-time students |
| 463) | |
| 464) | |

ANNEXURE II.

School _____ School Board District _____

STANDARDIZATION OF NEW SOUTH AFRICAN GROUP TEST.

BIOGRAPHICAL INVENTORY.

1. Name _____ Standard _____
 2. Which test are you doing? (Ask the tester and underline.)
Junior, Intermediate or Senior; Form A, Form B or Form C.
 3. (i) Home language _____ (ii) Which language other than your home language could you speak before you went to school? _____ (iii) Which language is mostly spoken in the area where you live? (Underline)
Afrikaans, English, Afr. and Eng. to the same extent, Another language.
 4. (i) Which standards, if any, have you failed? _____
(ii) Which standards, if any, have you skipped? _____
(iii) Which two standards, if any, did you complete in one year? _____
 5. (i) Have you attended a farm school? (Yes or No) _____
Which standards? _____
(ii) Have you attended a town school? (Yes or No) _____
Which standards? _____
(iii) Have you attended a city school? (Yes or No) _____
Which standards? _____
 6. (i) How many different schools, excluding nursery school, have you attended? _____
(ii) Have you attended a nursery school? (Yes or No) _____
(iii) Do you live in a school boarding house while you are at school?
(Yes or No) _____
 7. (i) Where did your parents live when you were born? (Underline)
Farm, town or city. Name of town or district _____
(ii) Where did you live most of the time before you went to school?
(Underline) Farm, town or city. Name of town or district _____
(iii) Where do you parents live now? (Underline)
Farm, town or city. Name of town or district _____
 8. (i) Is your father still alive? (Yes or No) _____ and your mother? _____
(ii) Have you a step-father? (Yes or No) _____ or a step-mother? _____
(iii) Do you live with a guardian or foster parents? (Yes or No) _____
If you do, how long? _____ years.
(iv) Do you live in an orphanage or similar institution? (Yes or No) _____
If you do, how long? _____ years.
 9. (i) How many children have you parents, including yourself? _____
(ii) What is your position, or where do you come in the family? _____
 10. (i) Did your father study further than Std. 6? (Underline) Yes, No, Don't know.
Did your father study further than Std.10? (Underline) Yes, No, Don't know.
(ii) Did your mother study further than Std. 6? (Underline) Yes, No, Don't know.
Did your mother study further than Std.10? (Underline) Yes, No, Don't know.
- N.B. Leave out questions 11 and 12 if your parents are boarding, or for any other reason not keeping house any more.
11. (i) How many rooms are there in your house of flat, not counting pantry and bathroom? _____
(ii) How many people live in your house including boarders? _____
 12. Underline each of the following which you have at home: Electricity, vacuum cleaner, washing machine, refrigerator, radio, telephone, motor car, bathroom, house servant, garden boy.

TURN OVER.

N.B. Answer the following questions by drawing a circle round the letter in front of the correct answer.

13. How often do you go to bioscope (not counting school shows).
- a. Twice or more often a week.
 - b. About once a week.
 - c. Once or twice a month.
 - d. Less than once a month.
 - e. Never.
14. How far would your parents like you to study?
- a. Only until you are allowed to leave school.
 - b. Standard 6.
 - c. Standard 8.
 - d. Standard 10.
 - e. Teachers' training college.
 - f. University.
 - g. You don't know.
15. When would you start working if you had your own way?
- a. Before reaching standard 6.
 - b. Just after standard 6.
 - c. After standard 8.
 - d. After standard 10.
 - e. After further study at a university or college.
 - f. You don't know.
16. What, do you think, is the value of studying as far as possible?
- a. No value - it keeps you from earning a living.
 - b. More education enables you to earn more money.
 - c. More education makes other people esteem you more highly.
 - d. Education is necessary for advancement in life.
 - e. Other (state) _____
17. (i) Which of the following occupations or fields do you intend entering when you leave school?
- a. Farming.
 - b. Factory work, skilled trades or mines.
 - c. Office work, civil service, banks or shops.
 - d. Further study.
 - e. Other work.
 - f. You don't know.
- (ii) If you have already decided on a specific occupation, name it _____
18. (i) Which one of the following (groups of) subjects do you like most?
- a. English.
 - b. Afrikaans.
 - c. Arithmetic.
 - d. A foreign language such as Latin, German or a Native language.
 - e. Learning subjects such as History or Geography.
 - f. Sciences such as Mathematics, Physics, Chemistry.
 - g. A practical subject as Woodwork, Needlework, Drawing or Typing.
- (ii) Which one of these (groups of) subjects do you like least? (Mark below).
- a. b. c. d. e. f. g.

DO NOT TURN OVER.

WAIT UNTIL YOU ARE TOLD WHAT TO DO.

(FOR COMPLETION BY CLASS TEACHERS).

Name of pupil _____ Standard _____

The information on this inventory is required for each pupil being tested, to determine:

- (i) whether the sample is representative of the school population of the whole country, and
- (ii) whether any factors in the pupils' background influence their performance to such an extent that they have to be taken into account when interpreting test results.

The wholehearted co-operation of class teachers would be greatly appreciated. Please answer questions 19 to 28, and control questions 4 and 10 and the name of the school, which had to be done by the pupil himself/herself.

19. Pupil's date of birth _____ Age _____ years _____ months.

20. Age on entering first school, excluding nursery school _____ years _____ months.

21. Total period at school, excluding nursery school _____ years _____ months

22. (i) Occupation of father or guardian _____
(Describe clearly and specifically, e.g. first grade clerk in civil service.

If in business, state whether owner, manager, clerk, etc., and the nature of the business.)

(ii) If retired or out of work (Underline).

state previous occupation _____

(iii) Is he (Encircle letter in front of answer)

a. An employer of more than 10 persons.

b. An employer of 6-10 persons.

c. An employer of less than 6 persons, or working for himself.

d. A person drawing a monthly salary.

e. A person drawing weekly or other wages.

23. Occupation of mother if gainfully employed. _____

24. Which occupational group predominates in the area in which the parents live (Underline) Professional, Commercial, Industrial, Farming, Other.

25. (i) What is his/her condition of health? (Underline).

Excellent, good, average, poor, very poor.

(ii) If he/she suffers from any sensory or physical defects or chronic disease, state:

26. Number of days absent during the first half of 1954 _____

27. (i) What conditions, if any, do you regard as being unfavourable for his/her educational opportunities? (Encircle letter in front of answer/s.)

a. Too many changes from school to school.

b. Frequent absence from school due to illness or other reasons.

c. Too old or too young on entering school.

d. Unfavourable opportunities at home.

e. Other (State) _____

(ii) How favourable were his/her educational opportunities? (Underline).

Very favourable, favourable, average, unfavourable, very unfavourable.

28. (i) Quality of school work. (Underline.)

Excellent, good, average, weak, very weak.

(ii) I.Q. if known _____

N.B. Kindly return these inventories to the tester, for despatch together with the other testing material.

Skool _____ Skooldistrik _____

STANDAARDISERING VAN NUWE SUID-AFRIKAANSE GROEPTOETS

BIOGRAFIESE VRAELYS.

1. Naam _____ Standard _____
2. Watter toets doen jy? (Vra die toetsafnemer en onderstreep)
Junior, Intermediêr of Senior; Vorm A, Vorm B of Vorm C.
3. (i) Huistaal _____ (ii) Watter ander taal as jou huistaal
het jy voordat jy skool toe is, leer praat? _____
(iii) Watter taal word meestal in die omgewing waar jy woon, gepraat?
(Onderstreep). Afrikaans, Engels, Afrikaans en Engels omtrent eweveel,
'n Ander taal.
4. (i) Watter standerds, indien enige, het jy al gedruip? _____
(ii) Watter standerds, indien enige, het hy oorgeslaan? _____
(iii) Watter twee standerds, indien enige, het jy in een
jaar voltooi? _____
5. (i) Was jy in 'n plaasskool? (Ja of Nee) _____ Watter standerds? _____
(ii) Was jy in 'n dorpskool? (Ja of Nee) _____ Watter standerds? _____
(iii) Was jy in 'n stadskool? (Ja of Nee) _____ Watter standerds? _____
6. (i) Hoeveel verskillende skole behalwe kleuterskool het jy
bygewoon? _____
(ii) Het jy 'n kleuterskool bygewoon? (Ja of Nee) _____
(iii) Loseer jy in 'n skoolkoshuis gedurende die kwartaal?
(Ja of Nee) _____
7. (i) Waar het jou ouers gewoon toe jy gebore is? (Onderstreep)
Plaas, dorp of stad. Naam van dorp of distrik _____
(ii) Waar het jy meestal gewoon voordat jy skool toe is? (Onderstreep)
Plaas, dorp of stad. Naam van dorp of distrik _____
(iii) Waar woon jou ouers nou? (Onderstreep)
Plaas, dorp of stad. Naam van dorp of distrik _____
8. (i) Leef jou vader nog? (Ja of Nee) _____ en jou moeder? _____
(ii) Het jy 'n stiefvader? (Ja of Nee) _____, of 'n stiefmoeder? _____
(iii) Woon jy by 'n voog of aangenome ouers? (Ja of Nee) _____
Indien wel, hoelank? _____ jaar.
(iv) Woon jy in 'n weeshuis of soortgelyke inrigting? (Ja of Nee)
Indien wel, hoelank? _____ jaar.
9. (i) Hoeveel kinders het jou ouers saam met jou?
(ii) Die hoeveelste kind is jy?
10. (i) Het jou vader verder as st. 6 geleer? (onderstreep) Ja, Nee of
Jy weet nie.
Het jou vader verder as st.10 geleer? (onderstreep) Ja, Nee of
Jy weet nie.
(ii) Het jou moeder verder as st. 6 geleer? (onderstreep) Ja, Nee of
Jy weet nie.
Het jou moeder verder as st.10 geleer? (onderstreep) Ja, Nee of
Jy weet nie.
- N.B. Laat vrae 11 en 12 uit as jou ouers loseer of om enige ander rede
nie meer 'n huishouding het nie.
11. (i) Hoeveel verstreke is daar in julle huis of woonstel?
(nie badkamer of spens nie.) _____
(ii) Hoeveel mense woon in julle huis, saam met loseerders?
12. Onderstreep elkeen van die volgende wat julle tuis het:
Elektrisiteit, stofsuier, wasmasjien, yskas, radio, telefoon, motor,
badkamer, huisbediende, tuinjong.

N.B. Beantwoord die volgende vrae deur net 'n sirkeltjie om die letter voor die regte antwoord te trek.

13. Hoe dikwels woon jy bioskope by? (Nie skoolvertonings nie)
- Twee of meermaal per week
 - Omtrent eenmaal per week
 - Een of tweemaal per maand
 - Minder as eenmaal per maand
 - Nooit
14. Hoe ver wil jou ouers hê dat jy moet leer?
- Net totdat jy die skool mag verlaat
 - Standerd 6
 - Standerd 8
 - Standerd 10
 - Opleidingskollege of normaalkollege
 - Universiteit
 - Jy weet nie.
15. Wanneer sou jy gaan werk as jy self kon kies?
- Voor standerd 6
 - Net na standerd 6
 - Na standerd 8
 - Na standerd 10
 - Na verder studie aan 'n Universiteit of Kollege
 - Jy weet nie.
16. Wat dink jy is die waarde daarvan om so ver as moontlik te leer?
- Geen waarde - dit hou 'n mens van 'n verdienste af
 - Met geleerdheid kan 'n mens meer geld verdien
 - Geleerdheid bring 'n mens in hoër aansien by ander mense
 - Geleerdheid is nodig vir vooruitgang in die lewe
 - Ander (Noem dit)
17. (i) In watter EEN van die volgende rigtings wil jy gaan as jy die skool verlaat?
- Boerdery
 - Fabriekswerk, ambagte of myne
 - Kantoorwerk, staatsdiens, banke of winkels
 - Verder studie
 - Ander werk
 - Jy weet nog gladnie.
- (ii) Watter spesifieke beroep gaan jy volg indien jy reeds gekies het?
18. (i) Van watter EEN van die volgende (groepe) vakke hou jy die meeste:
- Afrikaans
 - Engels
 - Rekenkunde
 - 'n Vreemde taal soos Latyn, Duits of 'n Naturelle taal
 - Leervakke soos Geskiedenis of Aardrykskunde
 - Wetenskappe soos Matesis, Natuurkunde of Skeikunde
 - 'n Praktiese vak soos Houtwerk, Naaldwerk, Tekene of Tik
- (ii) Van watter een van hierdie (groepe) vakke hou jy die minste? (Merk hieronder)

a., b., c., d., e., f., g.

MOENIE OMBLAAI NIE.

WAG TOTDAT AAN JOU GESE WORD WAT JY MOET DOEN.

(VIR VOLTOOIING DEUR KLASONDERWYSERS)

Naam van leerling _____ Standaard _____

Die inligting op hierdie vraelys word benodig vir elke leerling wat getoets word, om na te gaan:

- (i) of die monster verteenwoordigend is van die hele land se skoolbevolking en
- (ii) of enige faktore in die agtergrond van die leerling sy prestasies in so 'n mate beïnvloed dat dit gekontroleer moet word by die interpretasie van toetsresultate.

Die heelhartige samewerking van klasonderwysers(esse) sal hoog waardeur word.

Beantwoord asseblief vrae 19 tot 28, en kontroleer vrae 4 en 10 en die naam van die skool bo-aan wat deur die leerling self ingevul moes word.

19. Leerling se geboortedatum _____ Ouderdom _____ jr. _____ mde.

20. Ouderdom by toelating tot eerste skool, uitgesonderd kleuterskool _____ jr. _____ mde.

21. Totale tydperk op skool, uitgesonderd kleuterskool _____ jr. _____ mde.

22. (i) Beroep van vader of voog _____
(Omskryf duidelik en spesifiek bv. eerstegraadse klerk in staatsdiens. Indien in besigheid, meld eienaar, bestuurder, klerk, ens., en die aard van die besigheid.)

(ii) Indien afgetreë of werkloos, (onderstreep) _____
meld vorige beroep _____

(iii) Is hy (omsirkel die letter voor die regte antwoord)

- a. 'n werkgewer aan meer as 10 mense
- b. 'n werkgewer aan 6-10 mense
- c. 'n werkgewer aan minder as 6 mense, of werker vir homself
- d. 'n persoon wat 'n maandelikse salaris trek
- e. 'n persoon wat 'n weeklikse of ander loon trek?

23. Beroep van moeder indien sy beloende werk doen _____

24. Watter beroepsgroep is oorwegend in die omgewing waar ouers woon?
(Onderstreep)

Professioneel, Kommersieel, Industriële, Boerdery, Ander.

25. (i) Hoe is sy/haar gesondheidstoestand? (Onderstreep)

Baie goed, goed, middelmatig, swak, baie swak.

(ii) Indien hy/sy aan enige senuwige of liggaamlike gebreke of kroniese kwale ly, noem dit _____

26. Getal dae afwesig gedurende eerste helfte van 1954 _____

27. (i) Wat, indien enigiets, was volgens u opinie ongunstig in sy/haar opvoedkundige geleenthede? (Omsirkel letter voor antwoord/e).

- a. te veel rondtrekkery van een skool na 'n ander.
- b. te veel afwesigheid van skool weens siekte of ander redes.
- c. te oud of te jonk by toelating tot skool.
- d. gebrekkige geleenthede tuis.
- e. ander (Meld) _____

(ii) Hoe gunstig was sy/haar opvoedkundige geleenthede? (Onderstreep)
Baie gunstig, gunstig, middelmatig, ongunstig, baie ongunstig.

28. (i) Gehalte van skoolwerk. (Onderstreep)

Baie goed, goed, middelmatig, swak, baie swak.

(ii) I.K. indien bekend _____

N.B. Oorhandig asseblief hierdie vraelyste aan die toetsafnemer vir versending saam met die ander toetsmateriaal.

QUESTIONNAIRE USED IN NATAL.

STANDARDISATION OF NEW S.A. GROUP TEST

QUESTIONNAIRE FOR COMPLETION BY CLASS TEACHERS

Name of pupil _____ Standard _____

(The information on this Questionnaire is required for each pupil being tested to determine whether the sample is representative of the school population of the whole country. The whole-hearted co-operation of class teachers will be greatly appreciated).

1. Pupil's date of birth _____ Age _____ years _____ months
2. Age on entering first school excluding nursery school _____ years _____ months
3. Total period at school excluding nursery school _____ years _____ months
4. (i) Occupation of father or guardian _____
(Describe clearly and specifically e.g. first grade clerk in civil service. If in business state whether owner, manager, clerk, etc. and the nature of the business.
(ii) If retired or out of work (underline) state previous occupation _____
(iii) Is he (encircle letter in front of answer)
a. an employer of more than 10 persons
b. an employer of 6-10 persons
c. an employer of less than 6 persons or working for himself
d. a person drawing a monthly salary
e. a person drawing weekly or other wages.
5. Occupation of mother if gainfully employed _____
6. Which occupational group predominates in the area in which the parents live? (Underline). Professional, Commercial, Industrial, Farming, Other.
7. (i) What is his/her condition of health? (Underline).
Excellent, good, average, poor, very poor.
(ii) If he/she suffers from any sensory or physical defects or chronic disease state: _____
8. Number of days absent during the first half of 1954 _____
9. (i) What conditions, if any, do you regard as being unfavourable for his/her educational opportunities? (Encircle letter in front of answer/s)
a. Too many changes from school to school.
b. Frequent absence from school due to illness or other reasons.
c. Too old or too young on entering school.
d. Unfavourable opportunities at home.
e. Other (state) _____
(ii) How favourable were his/her educational opportunities (Underline).
Very favourable, favourable, average, unfavourable, very unfavourable.
10. (i) Quality of schoolwork (Underline)
Excellent, good, average, weak, very weak.
(ii) I.Q. if known. _____
11. Which standards did he/she pass in each of the following types of school?
Farm school _____ Standards _____
Town school _____ Standards _____
City school _____ Standards _____
12. (i) How many children have his/her parents? _____
(ii) What is his/her position in the family? _____

N.B. Kindly return these questionnaires to the tester for dispatch together with the other testing material.

ANNEXURE III.

MEANS, STANDARD DEVIATIONS, AND STANDARD ERRORS BY TEST AND AGE.

AFRIKAANS: JUNIOR.

| | N | 8 yrs. | 9 yrs. | 10 yrs. 803 | 11 yrs. 800 | Total |
|----------|-----------------|--------|--------|----------------|----------------|-------|
| Test I | rxx | | | 0.85 | 0.86 | |
| | \bar{x} | | | 9.88 | 12.08 | |
| | σ | | | 5.81 | 6.03 | |
| | $\sigma\bar{x}$ | | | 0.21 | 0.21 | |
| Test III | rxx | | | 0.91 | 0.91 | |
| | \bar{x} | | | 13.04 | 15.18 | |
| | σ | | | 6.87 | 6.81 | |
| | $\sigma\bar{x}$ | | | 0.24 | 0.24 | |
| Test V | rxx | | | 0.78 | 0.78 | |
| | \bar{x} | | | 11.33 | 12.75 | |
| | σ | | | 4.98 | 5.01 | |
| | $\sigma\bar{x}$ | | | 0.18 | 0.18 | |
| Test II | rxx | | | 0.79 | 0.80 | |
| | \bar{x} | | | 10.87 | 13.04 | |
| | σ | | | 5.07 | 5.17 | |
| | $\sigma\bar{x}$ | | | 0.18 | 0.18 | |
| Test IV | rxx | | | 0.78 | 0.79 | |
| | \bar{x} | | | 13.41 | 15.36 | |
| | σ | | | 4.97 | 5.00 | |
| | $\sigma\bar{x}$ | | | 0.18 | 0.18 | |
| Test VI | rxx | | | 0.84 | 0.85 | |
| | \bar{x} | | | 13.58 | 15.63 | |
| | σ | | | 5.75 | 5.71 | |
| | $\sigma\bar{x}$ | | | 0.20 | 0.20 | |

rxx estimated from the Kuder-Richardson "formula 21" which gives an under-estimate.

ANNEXURE III (CONTD.)

AFRIKAANS: INTERMEDIATE.

| | N | 10 yrs. 904 | 11 yrs. 1004 | 12 yrs. 944 | 13 yrs. 1010 | 14 yrs. 800 | Total 4662 |
|----------|-----------------|----------------|-----------------|----------------|-----------------|----------------|---------------|
| Test I | rxx | 0.73 | 0.73 | 0.75 | 0.72 | 0.72 | 0.78 |
| | \bar{x} | 6.45 | 8.32 | 10.13 | 11.23 | 12.26 | 9.63 |
| | σ | 4.02 | 4.29 | 4.63 | 4.46 | 4.46 | 4.83 |
| | $\sigma\bar{x}$ | 0.13 | 0.14 | 0.15 | 0.14 | 0.16 | 0.07 |
| Test III | rxx | | | 0.76 | | | |
| | \bar{x} | 7.42 | 9.10 | 11.27 | 12.55 | 14.01 | |
| | σ | 4.22 | 4.53 | 4.83 | 4.84 | 4.72 | |
| | $\sigma\bar{x}$ | 0.14 | 0.14 | 0.16 | 0.15 | 0.17 | |
| Test V | rxx | | | 0.77 | | | |
| | \bar{x} | 6.96 | 8.44 | 10.18 | 11.58 | 12.75 | |
| | σ | 3.96 | 4.31 | 4.77 | 4.72 | 4.86 | |
| | $\sigma\bar{x}$ | 0.13 | 0.14 | 0.16 | 0.15 | 0.17 | |
| Test II | rxx | | | 0.70 | | | |
| | \bar{x} | 6.87 | 8.57 | 10.57 | 12.04 | 13.27 | |
| | σ | 3.59 | 3.82 | 4.31 | 4.32 | 4.33 | |
| | $\sigma\bar{x}$ | 0.12 | 0.12 | 0.14 | 0.14 | 0.15 | |
| Test IV | rxx | | | 0.70 | | | |
| | \bar{x} | 6.78 | 8.40 | 10.24 | 11.63 | 13.17 | |
| | σ | 3.44 | 3.76 | 4.29 | 4.36 | 4.45 | |
| | $\sigma\bar{x}$ | 0.11 | 0.12 | 0.14 | 0.14 | 0.16 | |
| Test VI | rxx | | | 0.80 | | | |
| | \bar{x} | 7.62 | 9.81 | 12.44 | 14.12 | 15.66 | |
| | σ | 4.31 | 4.82 | 5.16 | 5.02 | 4.82 | |
| | $\sigma\bar{x}$ | 0.14 | 0.15 | 0.17 | 0.16 | 0.17 | |

rxx is reliability as estimated by Kuder-Richardson "formula 21" which gives an under-estimate.

ANNEXURE III (CONTD.)

AFRIKAANS: SENIOR.

| | N | 13 yrs. 800 | 14 yrs. 1009 | 15 yrs. 1019 | 16 yrs. | 17 yrs. | 18 yrs. | Total |
|----------|-----------------|----------------|-----------------|-----------------|---------|---------|---------|-------|
| Test I | rxx | 0.65 | 0.66 | 0.66 | | | | |
| | \bar{x} | 7.63 | 8.46 | 8.78 | | | | |
| | σ | 3.74 | 3.89 | 3.92 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.12 | 0.12 | | | | |
| Test III | rxx | | | 0.61 | | | | |
| | \bar{x} | 6.77 | 7.59 | 8.14 | | | | |
| | σ | 3.24 | 3.56 | 3.64 | | | | |
| | $\sigma\bar{x}$ | 0.11 | 0.11 | 0.11 | | | | |
| Test V | rxx | | | 0.60 | | | | |
| | \bar{x} | 7.81 | 8.57 | 9.02 | | | | |
| | σ | 3.57 | 3.47 | 3.72 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.11 | 0.12 | | | | |
| Test II | rxx | 0.63 | | 0.68 | | | | |
| | \bar{x} | 8.07 | 9.17 | 10.10 | | | | |
| | σ | 3.71 | 3.92 | 4.15 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.12 | 0.13 | | | | |
| Test IV | rxx | | | 0.66 | | | | |
| | \bar{x} | 7.41 | 8.56 | 9.15 | | | | |
| | σ | 3.51 | 3.77 | 3.94 | | | | |
| | $\sigma\bar{x}$ | 0.12 | 0.12 | 0.12 | | | | |
| Test VI | rxx | | | 0.68 | | | | |
| | \bar{x} | 8.82 | 9.95 | 10.91 | | | | |
| | σ | 3.79 | 3.94 | 4.18 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.12 | 0.13 | | | | |

Reliability calculated from Kuder-Richardson "formula No. 21" which gives an under-estimate.

ANNEXURE III (CONTD.)

ENGLISH: JUNIOR.

| | N | 8 yrs. | 9 yrs. | 10 yrs. 800 | 11 yrs. 800 | Total |
|----------|-----------------|--------|--------|----------------|----------------|-------|
| Test I | | | | 0.88 | 0.85 | |
| | \bar{x} | | | 13.18 | 16.22 | |
| | σ | | | 6.32 | 5.62 | |
| | $\sigma\bar{x}$ | | | 0.22 | 0.20 | |
| Test III | | | | 0.91 | 0.90 | |
| | \bar{x} | | | 15.90 | 18.66 | |
| | σ | | | 6.62 | 5.73 | |
| | $\sigma\bar{x}$ | | | 0.23 | 0.20 | |
| Test V | | | | 0.78 | 0.77 | |
| | \bar{x} | | | 14.08 | 16.14 | |
| | σ | | | 4.94 | 4.67 | |
| | $\sigma\bar{x}$ | | | 0.17 | 0.17 | |
| Test II | | | | 0.76 | 0.75 | |
| | \bar{x} | | | 10.98 | 13.13 | |
| | σ | | | 4.74 | 4.74 | |
| | $\sigma\bar{x}$ | | | 0.17 | 0.17 | |
| Test IV | | | | 0.77 | 0.78 | |
| | \bar{x} | | | 12.85 | 15.07 | |
| | σ | | | 4.93 | 4.94 | |
| | $\sigma\bar{x}$ | | | 0.17 | 0.17 | |
| Test VI | | | | 0.84 | 0.81 | |
| | \bar{x} | | | 14.25 | 16.82 | |
| | σ | | | 5.68 | 5.05 | |
| | $\sigma\bar{x}$ | | | 0.20 | 0.18 | |

ANNEXURE III (CONTD.)

ENGLISH: INTERMEDIATE.

| | N | 10 yrs. 934 | 11 yrs. 987 | 12 yrs. 988 | 13 yrs. 961 | 14 yrs. 800 | Total |
|----------|------------|----------------|----------------|----------------|----------------|----------------|-------|
| Test I | rxx | 0.77 | 0.76 | 0.72 | 0.74 | 0.65 | |
| | \bar{x} | 8.95 | 11.20 | 13.04 | 14.04 | 15.31 | |
| | σ | 4.66 | 4.75 | 4.48 | 4.64 | 3.96 | |
| | σ_x | 0.15 | 0.15 | 0.14 | 0.15 | 0.14 | |
| Test III | | | | 0.73 | | | |
| | \bar{x} | 9.70 | 11.73 | 13.64 | 14.85 | 16.25 | |
| | σ | 4.82 | 4.72 | 4.54 | 4.67 | 4.18 | |
| | σ_x | 0.16 | 0.15 | 0.14 | 0.15 | 0.15 | |
| Test V | | | | 0.75 | | | |
| | \bar{x} | 9.51 | 11.44 | 13.36 | 14.29 | 15.83 | |
| | σ | 4.76 | 4.88 | 4.70 | 4.83 | 4.32 | |
| | σ_x | 0.16 | 0.16 | 0.15 | 0.15 | 0.15 | |
| Test II | | | | 0.64 | | | |
| | \bar{x} | 8.17 | 9.82 | 11.81 | 12.85 | 14.18 | |
| | σ | 3.81 | 3.87 | 4.00 | 4.05 | 3.92 | |
| | σ_x | 0.12 | 0.12 | 0.13 | 0.13 | 0.14 | |
| Test IV | | | | 0.67 | | | |
| | \bar{x} | 7.97 | 9.73 | 11.34 | 12.71 | 14.59 | |
| | σ | 3.60 | 3.88 | 4.13 | 4.42 | 4.20 | |
| | σ_x | 0.12 | 0.12 | 0.13 | 0.14 | 0.15 | |
| Test VI | | | | 0.76 | | | |
| | \bar{x} | 9.11 | 11.48 | 13.89 | 15.26 | 17.03 | |
| | σ | 4.83 | 4.87 | 4.74 | 4.74 | 4.13 | |
| | σ_x | 0.16 | 0.15 | 0.15 | 0.15 | 0.15 | |

rxr is reliability as estimated by Kuder-Richardson "formula 21" which gives an under-estimate.

ANNEXURE III (CONTD.)

ENGLISH: SENIOR.

| | N | 13 yrs. 810 | 14 yrs. 949 | 15 yrs. 1006 | 16 yrs. | 17 yrs. | 18 yrs. | Total |
|-------------|-----------------|----------------|----------------|-----------------|---------|---------|---------|-------|
| Test I | rxx | 0.58 | 0.61 | 0.61 | | | | |
| | \bar{x} | 9.90 | 10.96 | 11.45 | | | | |
| | σ | 3.71 | 3.86 | 3.89 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.13 | 0.12 | | | | |
| Test III | | | | 0.68 | | | | |
| | \bar{x} | 8.45 | 9.66 | 10.40 | | | | |
| | σ | 3.58 | 3.95 | 4.14 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.13 | 0.13 | | | | |
| Test V | | | | 0.59 | | | | |
| | \bar{x} | 9.81 | 10.85 | 11.63 | | | | |
| | σ | 3.63 | 3.76 | 3.81 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.12 | 0.12 | | | | |
| Test II | | | | 0.65 | | | | |
| | \bar{x} | 10.23 | 11.55 | 12.15 | | | | |
| | σ | 3.68 | 3.92 | 4.07 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.13 | 0.13 | | | | |
| Test IV | | | | 0.70 | | | | |
| | \bar{x} | 7.98 | 9.30 | 10.25 | | | | |
| | σ | 3.70 | 4.14 | 4.28 | | | | |
| | $\sigma\bar{x}$ | 0.13 | 0.13 | 0.13 | | | | |
| Test VII | | | | 0.69 | | | | |
| | \bar{x} | 9.74 | 11.53 | 12.33 | | | | |
| | σ | 3.89 | 4.11 | 4.27 | | | | |
| | $\sigma\bar{x}$ | 0.14 | 0.13 | 0.13 | | | | |

ANNEXURE IV.

NEW SAGT.

CORRELATION BETWEEN JUNIOR AND INTERMEDIATE TESTS.

10 YEAR-OLDS.

I. GROUP OF 89 PUPILS WHO DID THE JUNIOR TEST ON THE FIRST DAY.

NON-VERBAL TEST:

Junior Test : Average = 100.37, Std. Dev. = 13.2
Intermediate Test: Average = 107.84, Std. Dev. = 14.9

$r = 0.85 \rightarrow$

VERBAL TEST:

Junior Test : Average = 101.0, Std. Dev. = 16.0
Intermediate Test: Average = 105.7, Std. Dev. = 13.9

$r = 0.86 \rightarrow$

TOTAL TEST:

Junior Test : Average = 100.6, Std. Dev. = 14.3
Intermediate Test: Average = 107.75, Std. Dev. = 14.1

$r = 0.91 \rightarrow$

II. GROUP OF 88 PUPILS WHO DID THE INTERMEDIATE TEST ON THE FIRST DAY.

NON-VERBAL TEST:

Intermediate Test: Average = 97.6, Std. Dev. = 15.5
Junior Test : Average = 103.7, Std. Dev. = 15.5

$r = 0.85 \rightarrow$

VERBAL TEST:

Intermediate Test: Average = 98.4, Std. Dev. = 15.8
Junior Test : Average = 102.8, Std. Dev. = 17.0

$r = 0.90 \rightarrow$

TOTAL TEST:

Intermediate Test: Average = 98.1, Std. Dev. = 15.7
Junior Test : Average = 103.3, Std. Dev. = 16.2

$r = 0.91 \rightarrow$

NUWE SAGT.

KORRELASIE TUSSEN INTERMEDIÊRE EN SENIOR TOETSE.

14 JARIGES.

I. GROEP VAN 90 LEERLINGE WAT DIE INTERMEDIÊRE TOETS OP DIE EERSTE DAG AFGELÊ HET.

NIE-VERBALE TOETSE:

| | | |
|---------------------|--------------------------|-----------------|
| Intermediêre Toets: | Gemiddelde = 108.0, Std. | Afwyking = 14.5 |
| Senior Toets : | Gemiddelde = 115.7, Std. | Afwyking = 17.3 |

$$r = 0.83 \longrightarrow$$

VERBALE TOETSE:

| | | |
|---------------------|--------------------------|-----------------|
| Intermediêre Toets: | Gemiddelde = 108.6, Std. | Afwyking = 15.4 |
| Senior Toets : | Gemiddelde = 112.1, Std. | Afwyking = 15.3 |

$$r = 0.90 \longrightarrow$$

TOTAAL:

| | | |
|---------------------|--------------------------|-----------------|
| Intermediêre Toets: | Gemiddelde = 108.9, Std. | Afwyking = 15.2 |
| Senior Toets : | Gemiddelde = 115.1, Std. | Afwyking = 16.0 |

$$r = 0.92 \longrightarrow$$

II. GROEP VAN 94 LEERLINGE WAT DIE SENIOR TOETS OP DIE EERSTE DAG AFGELÊ HET.

NIE-VERBALE TOETS:

| | | |
|---------------------|--------------------------|-----------------|
| Intermediêre Toets: | Gemiddelde = 112.6, Std. | Afwyking = 16.3 |
| Senior Toets : | Gemiddelde = 106.8, Std. | Afwyking = 16.7 |

$$r = 0.89 \longrightarrow$$

VERBALE TOETSE:

| | | |
|---------------------|--------------------------|-----------------|
| Intermediêre Toets: | Gemiddelde = 110.4, Std. | Afwyking = 16.1 |
| Senior Toets : | Gemiddelde = 107.8, Std. | Afwyking = 16.6 |

$$r = 0.86 \longrightarrow$$

TOTAAL:

| | | |
|---------------------|--------------------------|-----------------|
| Intermediêre Toets: | Gemiddelde = 112.0, Std. | Afwyking = 16.3 |
| Senior Toets : | Gemiddelde = 108.1, Std. | Afwyking = 17.0 |

$$r = 0.91 \longrightarrow$$

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