

A CRITICAL ANALYSIS OF
METHODS OF SELECTING AND STREAMING
SECONDARY SCHOOL PUPILS
AND
SOME SUGGESTIONS TOWARDS SOLVING THE PROBLEM
IN NATAL SCHOOLS

by

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Thesis Approved for the Degree of
Doctor of Philosophy
in the
University of Natal

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ACKNOWLEDGEMENTS

I acknowledge my gratitude to the University of Natal for an AD HOC grant which has enabled me to complete this research.

To Professor W.H.O. Schmidt, my supervisor, I am grateful for his guidance and for his criticism of this report.

I thank the Director of Education of Natal for permission to give tests in schools of the Natal Education Department; I also thank members of that Department and the principals and teachers of schools in which tests were given for their assistance.

My thanks are due to over two thousand school children for having sat uncomplainingly through two days of testing in the November and February heat of Natal.

To Professor D.S. Chapman, Mr. R.D. Griesel, Miss M. Humphries, Mrs. M. Schnetz and Mr. G.H.A. Steyn who have assisted me in various ways, I express my appreciation.

I owe a special debt of gratitude to Dr. A.J. Groenewald for his valued encouragement and help in connection with this investigation.

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INTRODUCTION

SCOPE AND OBJECTIVES OF THE THESIS

It is the function of psychologists to investigate those features which are psychologically beneficial or harmful to individual children, to the school and to society ... They should not feel committed to attack or to support the present system.

P.E. Vernon

We are now passing through one of those periods of transition which see the efflorescence of new theories of education, whose practical realization is dependent upon conditions beyond the control of educators. (Kandel, 1951, p. 17.)

Characterized by increasing knowledge, technological advance, new methods of transportation and transmission, increasing population concentration in the cities, concentration of industry, multiplicity of occupations, rise of standard of living, entry of women en masse into economic life, greater specialization, more leisure, more human contacts, yet greater loneliness of the individual, this period of transition has seen, perhaps has been precipitated by and, in turn, produced two catastrophic world wars; it has felt some of the effects of the emergence of Communism as a rival to Capitalism; it has seen the first successful earth satellite.

So great the impact of this period, so tremendous the challenge to every country, that each has been compelled to adopt measures of adjustment to rapid change. Although the reaction of each country to this impact and challenge has been different, there are, nevertheless, some features which are common to all, viz. each has scrutinized and is recasting many of its agencies of guidance and its systems of constraints. Most important of these agencies and systems is the educational system of each country.

The educational systems of Europe had, until the Second World War, retained the schools more or less in their original patterns. These schools were, briefly, of three distinct kinds:

1. the primary or elementary school which was originally started for the children of the poor; latterly it provided elementary education for the masses up to the age of fourteen years, to which age education had originally been compulsory because this was the age of confirmation in church membership.

ii. the school which prepared the children of the rich for University careers;

iii. the higher grade school in England and the "Mittelschule" in Germany which provided elementary education for the new economic class. This school had developed in the wake of the Industrial Revolution as a result of the realization by this new class of the advantages of education in securing higher paid jobs, and its inability to afford the schools for the rich. Pupils were usually kept at this kind of school until they had turned fifteen years of age. (Kandel, 1951.)

Prior to the period of post-war reconstruction, therefore, there were in most countries in Europe dual systems of education, viz. elementary and secondary, each being regarded as a type different in quantity and quality. Although Russian successes in space had shocked America to severe criticism, with a view to improvement, of its educational system, reconstruction in America has taken a somewhat different trend from that in European countries, for America has, since the first years of the twentieth century, had a common school system with continuity between its elementary and secondary school levels.

From America the western European countries have learnt that money spent on education is a sound investment, that the greatest asset of any nation - its children - should be developed to its full extent and that its wastage should be avoided at all costs. (Kandel, 1951.) Post-war plans for reconstruction have emphasized not only economic values, but idealistic, spiritual and cultural values as well.

In this reconstruction in educational systems of Western Europe three main common tendencies are observable. The first is a movement away from a primary education which is regarded as a distinct type of education to a primary education which is to be considered as the first stage of a continuous process of general education. This first (primary or elementary) stage is followed by the second stage which is that of secondary education provided

equally for everyone. There is, however, to be recognition of the fact that young people of secondary school stage have different abilities, aptitudes and interests. (Elvin, 1961.) The second main common tendency is a search for the most effective means of making an organic connection between these two stages of education, each of which was developed for different purposes and different children. These differences create difficulties in smooth transition and in the organization of a well articulated system of education. (Parkyn, 1961.) The third common tendency consists of the realization, firstly, that the provision of secondary education equally for everyone raises the question of equality of educational opportunity, and with it the question of vocational opportunity, and secondly, that these questions cannot be answered apart from the question of the extension of compulsory school attendance and the raising of the school-leaving age. (Unesco, 1951.)

The introduction in all countries of compulsory school attendance to an age not lower than sixteen years as soon as circumstances permit was advocated by the International Labour Conference in 1945. It recommended that in all cases school attendance should be compulsory up to the minimum age for admission to employment, with continuation of education compulsory up to the age of eighteen years. (Kandel, 1951.)

Turning to the Republic of South Africa and to Natal, in particular, we find that the school-leaving age in 1959 for white pupils in the Cape Province was sixteen years or Standard VIII, in the Orange Free State it was sixteen years with the alternate standard as Standard VIII, while in the Transvaal it was sixteen years with no alternate standard, and in Natal it was fifteen years or Standard VIII. Natal, thus, had a school-leaving age lower than that of the rest of the Republic of South Africa. Such recognition of different school-leaving ages for different parts of a country is not sound policy

for that country. (Kandel, 1951.)¹

The forces which in countries in Europe had brought about the need for reconstruction of their systems of education were felt, too, in the Republic of South Africa, while reforms which had been suggested and/or introduced in those countries had been studied by the Provinces of the Republic. The Cape Province had, from 1953, been experimenting with new courses and syllabi. In 1955 the Transvaal had sent a commission overseas to investigate educational reconstruction in Europe (van Wyk report, 1955), and had introduced a system of differentiation in its secondary schools. In the Orange Free State, since 1954, no pupil who had turned fourteen years of age was to remain in the primary school. This meant that every pupil would be assured of at least two years of secondary education. In 1954, too, the external examination at the end of Standard VIII had been abolished. In 1958 a committee had been appointed to investigate the question of enrichment of the school programme for gifted pupils. (Orange Free State. Education Dept., 1959a.)

In Natal the standard alternative to age of school-leaving had been raised, in January 1951, from Standard VI to Standard VIII. (Natal. Education Dept., 1955b.) A pupil could, nevertheless, still leave school at the end of the year in which he turned fifteen years of age.

The raising of the standard at which a pupil might leave school was in part implementation of one of the recommendations of the Wilks Committee of 1946 (Wilks report, 1946) and of the earlier Broome Commission of 1937 (Broome report, 1938), both of which recommended that the school-leaving age be raised to the end of the year in which a pupil turns sixteen years of age.

The need for reform of the educational system of Natal along the lines suggested in the Hadow Report (Hadow report, 1927) is

1. These school-leaving ages apply only to white pupils of the Republic of South Africa. This legislation is not in respect of other racial groups. It is the education of white pupils only of the Republic of South Africa which forms the basis of this research.

referred to in various reports of the Superintendents of Education, the name being changed in 1938 to that of Director of Education. In the report for the year 1929, Inspector Mr. W.R. Murray Brown mentioned a proposal to solve the over-age problem on the model of the system then followed in England by the automatic transfer of pupils at certain ages, irrespective of their academic status, to schools classified on an age basis. (Murray Brown, 1930.) It was suggested by Mr. Hugh Bryan, Superintendent of Education, that pupils of thirteen years of age should be in the secondary schools.

In this report, too, reference is made to the new Matriculation proposals which introduced different subjects for girls. (Natal. Education Dept., 1930.)

In the report for 1930 Inspector Mr. O.K. Winterton expressed the opinion that within the schools traditional schemes of organization had become obsolete, and that promotion ought to be based entirely upon the pupils' attainments in (i) main language, (ii) arithmetic, and (iii) a group intelligence test. (Natal. Education Dept., 1931.)

In his report for 1933 the Superintendent of Education, Mr. F.D. Hugo, commented on the fact that twenty-nine of the 530 schools of the Department had provided post-primary courses of the academic, commercial and technical types. (Natal. Education Dept., 1934b.)

In the Reports of 1933, 1934, 1936, 1938, 1939, 1943 and 1952, the necessity for a re-organization of the system of education was emphasized. (Natal. Education Dept., 1934b, 1935, 1939, 1941, 1947, 1956a.)

To the problems of (a) raising the school-leaving age to sixteen years, (b) providing standardized tests for Natal schools, (c) the increasing number of choices of subjects for Matriculation, and (d) the provision of differentiated education, frequent and recurring references are made in these reports, i.e. for 1932, 1933, 1935, 1936, 1938, 1939, 1943, 1952. (Natal. Education Dept., 1934a, 1934b, 1937, 1939, 1941, 1947, 1956a.)

In 1946 the Wilks Committee (Wilks report, 1946) had recommended that all schools should be multi-lateral in character. Although there was a choice of various subjects for Matriculation, these subjects were combined in courses which, by and large, were preparatory courses to a University career. With the introduction in 1954 (Natal. Education Dept., 1958b) of the Natal Senior Certificate some provision was made for those pupils who did not wish to proceed to University.

That the question of grouping pupils in their first year of secondary schooling is one which has for long presented difficulties which teachers have tried to overcome is evident from the Report of the Director of Education for 1952. (Natal. Education Dept., 1956a.) In this report mention is made of the examination papers which were drawn up by a group of headmasters, which was known as the "Exodus Club". These were not standardized objective tests but were a composite of papers set by all the schools of the Province and they were to be used at the end of Standard VI. In this report, too, the Director, Mr. C.M. Booysen, expressed the opinion that an investigation into the whole problem of the admission of pupils to secondary education would have to be undertaken.

In his report for 1953/54/55 the Director of Education writes:

The result of the raising of the school leaving age to the end of the year in which the child turns 15 or until he has passed Standard VIII is now being felt in the schools. Standard VI no longer marks the end of the primary school course but becomes the introduction to the secondary course. The Standard VI year is regarded as an exploratory period and new subjects such as Mathematics, General Science or a third language are introduced into the curriculum. In this year, the type of secondary education best suited to the individual is determined. Most pupils, whatever their ability, now enjoy some secondary education. (Natal. Education Dept., 1958b, p.8.)

It is thus obvious that reconstruction of the educational system which raised the questions of extension of the period of compulsory education, the need for further differentiation, the comparability of standards of marks from different schools and

transfer on age, was very much in the minds of the educators of Natal.

In 1959 the schools of Natal introduced the Practical Course, the aim of which was to meet the needs of less gifted pupils in Standards VII and VIII; the courses for all other pupils were unchanged. This new course immediately created the problem of selection of pupils, and the practice adopted was the negative selection of pupils to the Practical Course on the results of an internal old-type examination at the end of Standard VI, (see Part I, Chapter III, "Examinations" in this thesis) i.e. those pupils who fell below a certain mark had a P2 pass and were placed in the Practical Course. (Natal. Education Dept., 1960.)

It was at this stage, i.e. when the first steps had been taken to re-organize secondary education for European children in Natal, that the research leading to this dissertation was commenced. The aim was twofold.

The first aim was to take a good look at the examinations and procedures which formed the basis of selecting the less gifted pupils, and to try to offer something more concrete than suggestions to help the teachers and pupils in Natal schools.

In this connection an attempt was made to understand the educational aims and assumptions of the authorities and spokesmen of the Natal Provincial Education Department, and then to set about making such contribution to an improvement in the examination and classification procedures as seemed necessary and possible at this particular stage in the development of secondary education in Natal. The most valuable immediate contribution appeared to be the construction and standardization of scholastic attainment tests for pupils at the end of their Standard V year and whose average age was about twelve years.

In countries where properly standardized tests of scholastic attainment have long been in use, as an integral component

of selection and streaming procedures, the absence of suitable standardized tests must appear very surprising indeed. There are standardized scholastic tests in South Africa. The National Bureau of Educational and Social Research has constructed a series of tests which has been made available to the schools of all four provinces. It is, however, not advisable to use these tests for selection of pupils to specific streams in the secondary school. A detailed discussion of the reasons will be found in Part I, Chapter III, "Scholastic tests", and in Part II, Chapter I of this work.

The first aim, then, one might say, was a purely technical one: to improve procedures, to do so immediately, and to do so with the understanding of the aims and assumptions of the authorities responsible for, and guiding secondary schooling in Natal, but without questioning those aims and assumptions.

The second aim was to take a broader look at secondary education, with a view to analysing the relationship between what education is to achieve, on the one hand, and procedures for selecting, grouping, and streaming pupils on the other.

Ideas of the educational authorities in Natal concerning the best ways of educating the less gifted pupils were in a state of flux even when this research was started, and changes have been made since then. Reference to some of these changes will be made in the next chapter which attempts to describe those facets of education in Natal which are relevant to the topic of this research. The "broader look" was intended to bring into the orbit of discussion in Natal, at this vital stage in the evolution of a new system of secondary education, two sets of data:

i. some of the implications of developments in the other provinces of the Republic of South Africa and in other countries that have faced, or are facing, a situation similar to that of Natal;

ii. some of the recently expounded ideas that play a

prominent part in the thinking and experimentation of educational psychologists, child psychologists, social psychologists, mental hygienists, as well as in the fields of mental testing and in research on creativity and gifted pupils.

To deal with the implications of developments elsewhere I have selected for special scrutiny the practices of the following: the Orange Free State, the Cape Province, the Transvaal; Scotland; England; the Central African Federation; the Netherlands; Norway; Sweden. The information relevant to the discussion is presented systematically in Part I, Chapter II, Sections B and D.

Recently expounded ideas that play a prominent part in the thinking and experimentation of psychologists are presented systematically in Part I, Chapter II, Sections A and C and in Chapter III.

It is not suggested that none of these implications and ideas has entered into the discussion in Natal; of course some have. With a view to learning from the experience of others the Province of Natal has at various times sent senior educational authorities overseas to report on developments in the field of secondary education in the countries of Western Europe. The Director of Education, Dr. W.G. McConkey, was chosen to proceed overseas in 1953, and Mr. L.J.T. Biebuyck, the present Director of Education, paid a brief visit overseas in 1961. However, a proper stock-taking appeared to offer the prospect of widening and deepening the discussion, and of helping to define the issues more clearly. In particular, the contributions of psychological thought and experimentation in recent years seem to have been neglected. It is for this reason, and also because of their fundamental importance, that these will be emphasized.

It is the second aim, namely, to take a broader look at secondary education and to reflect, in the light of experience, experimentation, and theory, on the possible and probable outcomes of various procedures for selecting, grouping, and streaming of pupils, that is implied in the title of the dissertation: "A critical analysis of methods of selecting and streaming secondary school pupils . . ." It is to be a critical analysis, not

in the sense of being destructive only, for it is so very easy to point to the flaws in any system of education and in any procedure of selection, but in the sense of making us aware of the assumptions underlying, and the consequences of using, various methods of selecting and streaming pupils.

I have said that changes have been made in secondary education in Natal since this research was started. I must add that many more changes are contemplated. It is hoped that this dissertation will help to clarify some of the issues.

It seems appropriate to mention here that the title of this work uses the words "selecting and streaming secondary school pupils . . ." in that order because in the secondary school pupils are first selected and then streamed. In the pattern of the development of educational systems and procedures, however, pupils were originally placed in groups, and this grouping was haphazard. It was only later that scientific methods of selection were developed. Then, too, methods of selecting and streaming have a special connotation when used in connection with procedures in the secondary school. This special connotation is discussed in Part I, Chapter II, Sections A and B. The practice of grouping is older than either selecting or streaming, and because this is so, a discussion of grouping must precede a discussion of streaming used in the special sense in the secondary school. This means that the topics of selecting and streaming are not dealt with in the order in which they appear in the title of this work.

PART I

CHAPTER I

THE PRESENT SITUATION IN NATAL

Reform in one part of the educational system cannot be successful without consideration of the total system, and educationists should have considered the education of infants and juniors before proceeding to the education of the adolescent.

S.J. Curtis

This chapter is devoted to a description of certain aspects of the educational system in Natal as they were when this investigation was started. Any major changes which have been made and have bearing on this work have been indicated.

1. ORGANIZATION OF EDUCATION IN NATAL

The Department of Education, with the Director at its head, is responsible for carrying out the policy of the Provincial Administration, i.e. the Administrator, appointed by and responsible to the Prime Minister, and his Executive Committee. It controls the education for European, Indian and Coloured children (not African children) in the Province of Natal, as well as the training of primary school teachers, and to a certain extent teachers for intermediate classes, for these three groups. For administrative purposes all schools in the Province are divided into the following categories:

- i. Government schools
- ii. Government-aided schools
- iii. Farm schools
- iv. Private schools
- v. Special schools

and these are further divided into schools for European, Coloured and Indian pupils respectively. (Natal. Education Dept., 1949.)

2. CONTROL OF EDUCATION

1. Provincial control

The Provincial education system which is highly centralized divides itself into two main sections:

- a. primary education which extends from Class I to the end of Standard V, i.e. Classes I and II, Standards I, II, III, IV and V.

- b. secondary education which makes provision for Standards VI, VII, VIII, IX and X.

Differences in abilities and needs of pupils have long been recognized by the Education Department which provided, as early as 1917, for the physically handicapped, and 1925 for the mentally handicapped child. (Natal. Education Dept., 1955b.) By 1959 the Practical Course had been introduced for the less gifted pupil, but no special provision had then been made to meet the differing needs of normal and gifted pupils.

ii. The Central Government

The South Africa Act of 1909 conferred on the provinces the responsibility of education, other than higher, for a period of five years. This policy continued until 1925 when, for financial reasons, all vocational education was transferred to the Central Government. The implications of this dichotomy are discussed in Part I, Chapter II, Sections B and C.

iii. Private enterprise

Nursery school (pre-school) education is left to private enterprise as are private schools. These private schools are based on the public schools of England and provide education for boys and girls separately. While some schools are for secondary school pupils only, others are for both primary and secondary school pupils.

Churches of many denominations, excluding the churches of the Afrikaans-speaking section of the population, have also established schools which provide separately for boys and girls, and for various standard ranges. (Steenkamp, 1941.)

Many of these private and church schools receive provincial subsidies so that the province has the right of inspection.

3. SEX

Some schools, both primary and secondary, provide education for boys and girls together, while others provide only for either

boys or girls. The examinations in all classes are used in exactly the same way for boys and girls.

4. WISHES OF THE PARENTS

i. Medium of instruction

The right to choose the medium through which their children will be instructed in school was given to parents by the Language Ordinance No. 13 of 1916, and this right is still upheld in the Ordinance No. 23 of 1942, "The Natal Education Ordinance 1942", as amended on December 31, 1955. (Natal. Provincial Administration, 1956.) Parental choice in the selection of a stream in the secondary school is discussed in Part I, Chapter III.

ii. Schools and courses

An instruction in regard to admission of pupils to secondary schools in the Schools Handbook (Natal. Education Dept., 1955a, p. 168) states: "As much guidance as possible should be given parents in selecting the courses and schools for their children."

Although parental wishes are considered, the parents' choice of a school or a course is not the deciding factor.

5. COMPULSORY SCHOOL ATTENDANCE

It is laid down in the Ordinance mentioned in 4. i, that a pupil must remain at school from the completion of his seventh year until the end of the school year in which he turns fifteen or passes Standard VIII. In practice a child whose fifteenth birthday falls in January of any year would not be compelled to return to school for that year. A child who turns six during the year may be admitted to school during January or February. (ibid.)

The following figures show what different ages of commencing school can mean in a pupil's age on passing Standard V, age of entering Standard VI, and in the number of years of compulsory schooling which can be spent in the secondary school. It is

assumed that the pupil's birthday is on 31st December.

Age of starting school	Age of passing Std. V	Age of entering Std. VI	No. of years in secondary school
5	11	12	3
6	12	13	2
7	13	14	1

In Class I in 1960 the numbers of pupils of various ages were:

No. of pupils	Age in years
2146	under 6
3781	6
483	7
46	8
5	9
2	10

From these figures (Natal. Education Dept., 1961d) it appears that the majority of pupils start school before they have turned seven years of age. This means that the majority of pupils will turn thirteen years of age during the Standard V year (see, also, Table 1), so that the majority of pupils in Natal could have two years in the secondary school.

6. AGE OF PUPILS

In smaller schools, where there is only one class group or division of each standard, all pupils who start school together in the infant classes and who pass every year, remain in the same class group/division throughout their primary school years.

If one takes into account that age of admission can be at the beginning of the year in which a child turns six or seven,

one realizes that in each class there can be a spread of three chronological years, excluding failure, i.e. a child with a date of birth 31/12/1946 admitted 1/2/1952 is 5 years 1 month old; date of birth 1/1/1945 admitted 1/2/1952 is 7 years 1 month old.

The following Age-Standard Table as at June 30th in any year is given in the Schools Handbook. (Natal. Education Dept., 1955a, p. 188.)

Table 1
Median Age for Each Standard

Standard	Median Age (years)	Upper Age Limit to Normality (years)
Class I	6.4	8
Class II	7.6	9
Standard I	8.8	10.5
Standard II	9.8	11.5
Standard III	10.7	13
Standard IV	11.7	14
Standard V	12.7	15

Any pupil whose age at 30th June is greater than that shown in Column II for his class should be considered as deserving of special attention. If, in addition to this, his school work is unsatisfactory in relation to the work of his classmates he should be referred to a psychologist, without much further consideration. (ibid.)

It will be seen in Table 2 that the possible spread of three chronological years in any standard has stretched to eight years at the end of Standard VI, i.e. in Standard V from nine years of age to sixteen years of age and in Standard VI from eleven years of age to eighteen years of age.

Table 2
Ages of Pupils in Standards V and VI

Age	Standard V		Standard VI	
	Boys	Girls	Boys	Girls
Under 6 years				
6 years				
7 years				
8 years				
9 years	1			
10 years	13	17		
11 years	713	755	2	3
12 years	1462	1372	654	673
13 years	633	491	1435	1320
14 years	170	112	565	518
15 years	52	26	267	200
16 years	7	2	77	46
17 years			19	2
18 years			1	

(Natal. Education Dept., 1961d.)

Table 3Ages of Pupils over Thirteen Years in Standard V

No. of pupils	Age in years
9	16
78	15
<u>282</u>	14
<u>369</u>	over 13

The total number of pupils in Standard V was 5826, so that 6% of Standard V pupils were over thirteen years of age. (ibid.)

The ages of pupils who were over thirteen years of age in the primary school, i.e. Class I to Standard V inclusive, are given in the following table.

Table 4Ages of Pupils over Thirteen Years in the Primary School

No. of pupils	Age in years
111	15 years and older
<u>367</u>	14 " " "
<u>478</u>	i.e. older than thirteen

7. PROMOTION1. Promotion in the primary school

In Standards III and IV the promotions are based on internal examination results in the following subjects:

1. Main Language	.....	300
2. Arithmetic	.....	200
3. Second Language	.....	150
4. History	.....	75
5. Geography	.....	<u>75</u>
Total	.....	<u>800</u>

Rigid conditions are not laid down for promotion. It is suggested that suitable conditions would be a pass mark of between 40% and 50% in main language, arithmetic and aggregate. (Natal. Education Dept., 1956b, p. 14.)

ii. Promotion to the secondary school

Promotion to the secondary school will occur from both the end of Standard V and Standard VI, hence special care is necessary to ensure that the results of the examination reflect the suitability of the pupils for promotion. (ibid. p. 16.)

The subjects to be examined for purposes of promotion and the maximum marks are as follows:

1. Main Language	.....	300
2. Arithmetic	.....	200
3. Second Language	.....	200
4. History	.....	100
5. Geography	.....	100
6. Sixth subject	.....	<u>100</u>
Total	.....	<u>1000</u>

The sixth subject referred to above is to be the one of the additional subjects in which the pupil has obtained the highest marks.

In Standard V the additional subjects are nature study and health education. In Standard VI the additional subjects are: general science, mathematics, and (where the subjects are taken) Latin or German (provided that in a special class the sixth subject may be handicraft or housecraft.) (ibid.)

iii. Conditions for Promotion and for Leaving Certificate

Standard	Promotion	Leaving Certificate
Standard V	Main Language 45% Arithmetic 40% Two other subjects 40% each Main Language) Arithmetic) Aggregate Second Language) of six History) subjects Geography) 40% One of Nature Study or Health Education ..)	
Standard VI	P ₁ Course Main Language 45% Arithmetic 33½% Three other subjects from: Second Language) History) 40% Geography) Sixth Subject) Aggregate of six subjects 40% N.B.- Sixth subject to be the best of Latin or German or Mathematics or General Science.	Main Language 35% Two other subjects from: Arithmetic) Second Language) History) 30% Geography) Sixth Subject) Aggregate of six subjects 30% N.B.- Sixth subject to be best of Latin or German or Mathematics or General Science or Home- craft or Handicraft.
Standard VI	P ₂ Course Main Language 40% Arithmetic or Second Language 33½% Two other subjects from: Arithmetic) Second Language) History) 40% Geography) Sixth Subject) Aggregate of six subjects 40% N.B.- Sixth subject to be best of Latin or German or Mathematics or General Science or Homecraft or Handicraft.	
Standard VII	Main Language 33½% Four other subjects 33½% each Aggregate of seven subjects 40%	Main Language 30% Four other subjects 30% each Aggregate of seven subjects 35%
Standard IX	Main Language 33½% Four other subjects 33½% each Aggregate of six subjects 40%	Main Language 33½% Four other subjects 30% each Aggregate of six subjects 35%

8. FAILURE

An amendment to the Schools Handbook states that:

No child should be allowed to remain for more than three years in the infant classes, (i.e. Class I and Class II) unless the case has been investigated and reported on by the Psychologist.

From Standard I to Standard V no pupil should be allowed to remain in any class for more than two years. ... Should a pupil still fail to satisfy the requirements of the school with regard to promotion after two years' attendance in a class, the case should be referred to the Psychologist. (Natal. Education Dept., 1956b, p. 6.)

A pupil may fail Standard V yet leave school if he has turned fifteen years of age. If he has not turned fifteen he must repeat Standard V.

9. GUIDANCE SERVICES

Although Vocational Guidance is highly organized from Standard VI in some secondary schools, in others it is provided only for those pupils who intend to leave school at the end of the year.

An intelligence test, the New South African Group Test, has been given to most but not all pupils by the time they have reached the end of Standard V. There is no planned use of standardized objective tests of attainment in school subjects and no organized educational guidance in the primary school.

School record cards were introduced into the schools in 1948 (Coetzee, 1958), a cumulative record card being kept for every pupil during his stay at school. The use of this kind of record is further discussed in Part I, Chapter III.

10. CERTIFICATES

A school leaving certificate is issued to a pupil who leaves school when he has turned fifteen years of age.

A Junior Certificate is issued on the results of the Departmental examination at the end of Standard VIII.

The Natal Senior Certificate is awarded under regulations approved by the Natal Examinations Board, while Matriculation Exemption is awarded only to those candidates who have selected their subjects according to certain groupings and obtained a minimum pass mark in selected subjects laid down by the Joint Matriculation Board. The possession of this Matriculation Exemption is necessary in the case of students who desire admission to a South African University.

11. SUBJECTS TAKEN IN STANDARD VI

The following fourteen subjects are taken in Standard VI:

Religious Education

Health Education (including Physical Education)

Skill subjects:

Main language

Second language

Arithmetic

Knowledge subjects:

Geography

History

Citizenship

General Science

Exploratory subjects:

Elementary Mathematics

Another language

Aesthetic subjects:

Music

Art

Manual skills:

Handicrafts (woodwork, metal work, domestic science, needlework, practical agriculture.)

Optional. (Natal. Education Dept., 1955a, p. 276.)

The work in this Standard should be looked upon as part of the secondary curriculum, and should be considered as a preparation for the more formal work of the higher standards. With the raising of the school-leaving age comparatively few pupils will be permitted to leave school on completion of this Standard. At the same time it has not yet been possible to transfer all the Standard VI classes in primary

schools to secondary schools. There devolves therefore a serious responsibility on Principals to ensure that the work in this Standard is so directed as to serve the purpose for which it is intended and the Standards of achievement expected of pupils are such that they can be expected to profit from promotion to higher Standards. The curriculum has been devised with this end in view. (ibid. p. 274.)

The Natal Education Department is trying to meet the need to accommodate all Standard VI pupils in the secondary school.

12. TRANSITION TO A SECONDARY SCHOOL

This may be at the end of Standard V or the end of Standard VI (Natal. Education Dept., 1955a, p. 274), or not at all, for in some areas the whole primary and secondary range forms one school which is controlled by one principal. All Standard VI pupils, however, follow the same secondary school course and write the same kind of examination, i.e. an "old-type" examination (see Part I, Chapter III) which is set by one or more teachers, sometimes the headmaster alone, of each school separately. Obviously boys and girls take different manual skills.

The last external examination for Standard VI was written at the end of 1948. (Coetzee, 1958.)

13. STANDARD VI AS AN EXPLORATORY PERIOD

The Standard VI year is an exploratory period during which mathematics, general science or a third language are introduced into the curriculum.

14. ADMISSION OF PUPILS TO SECONDARY SCHOOLS

Pupils can only be admitted to secondary schools provided they have been promoted by the principal of their primary school from the class immediately below the lowest class in the secondary school to which they wish to go.

Pupils proceeding to secondary schools should be furnished with transfer cards indicating their promotion and standard of achievement.

Considerable difficulty has been experienced in a number of schools in Durban and Pietermaritzburg doing post-primary ¹ work with regard to the admission of pupils to Standard VII. The applications have in these cases exceeded the number of vacancies and some parents have been disappointed.

In an endeavour to derive a system of admissions which will be fair to all the following procedure has been laid down:

(a) Principals of primary schools must timeously advise the parents of their pupils who will be seeking admission to post-primary schools to apply personally to the Principal of the school of their choice as early as possible during the year prior to transfer.

(b) As much guidance as possible should be given parents in selecting the courses and schools for their children.

(c) Parents should be urged, wherever possible, to select a school in the area of their domicile, if such school offers the course they have chosen for their children. They should also be advised that not every combination of subjects desired can be given and that they should consult the Principal of the school selected in this connection.

(d) Parents should be made to realise that no final decision regarding the admission of a pupil to a school can be made until his promotion has been certified by the Principal of his present school.

(e) Principals of secondary schools are advised to make early contact with the parents of applicants. They are entitled to give sound advice to parents in regard to courses and to suggest alternatives even if this would entail attendance at another school if such is in the interests of the pupil.

The Executive Committee has resolved "that the selection of pupils for admission to secondary schools in Pietermaritzburg and Durban be made from lists arranged in strict order of receipt."

Totally unsuitable pupils do not have to be admitted merely because of their prior position in the order of applications.

Principals should advise parents to apply elsewhere if the names of their children are so low down on the list that their chances of admission are remote. (ibid. pp. 168, 170.)

1. Similar difficulty has also been experienced with regard to pupils who are admitted to Standard VI.

15. ZONING

In those towns or areas where zoning regulations have been applied, principals must see that the limitations imposed by these are observed. Children residing outside the area defined as the zone served by the school may only be admitted with the written authority of the District Inspector. (ibid.)

i. Smaller towns

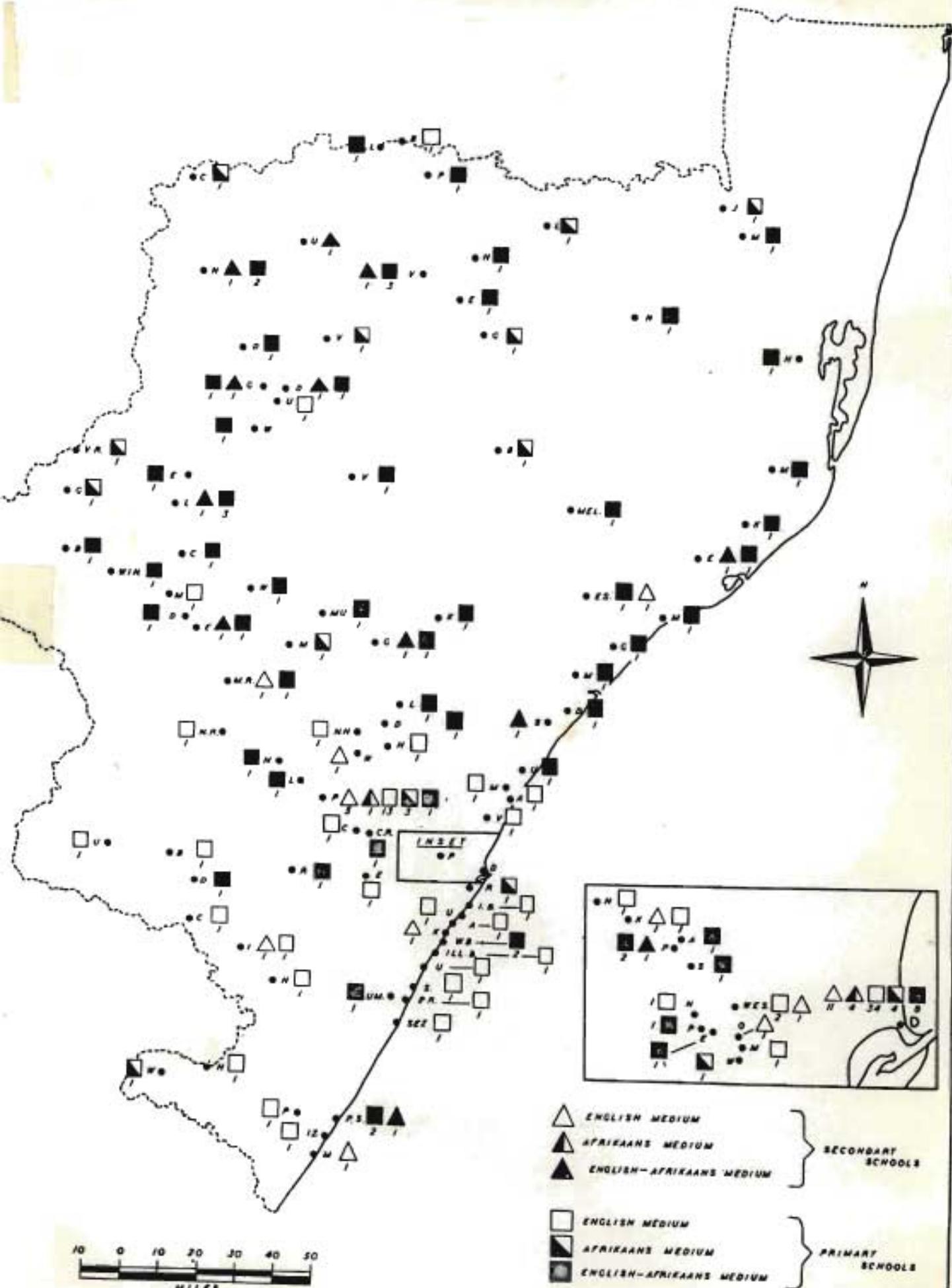
In smaller towns where there is only one secondary school, there is little or no problem with regard to admission of pupils into the lowest standard of the school, i.e. Standard VI or VII. There are, however, two factors that have to be considered here:

- a. Not all subjects are offered at all schools.
- b. More than one primary school may be a feeder school to the secondary school.

ii. Larger centres, particularly Durban and Pietermaritzburg

- a. Zoning regulations have been applied in certain areas. There are, however, certain provincial schools at which pupils pay fees, so that it is not possible at the present time for zoning regulations to be rigidly applied.
- b. In a number of schools in Durban and Pietermaritzburg the applications have exceeded the number of vacancies.
- c. Selection of pupils for admission to secondary schools in Pietermaritzburg and Durban is to be made from lists arranged in strict order of receipt (ibid. p. 170), except where pupils are "unsuitable".
- d. Factors a. and b. mentioned in the previous paragraph i. will, obviously, also operate in the larger centres.
- e. Parents are to be advised to apply personally to the principal of the school of their choice as early as possible during the year prior to transfer.

TOTAL : DISTRIBUTION OF PRIMARY & SECONDARY SCHOOLS



- f. "Principals should advise parents to apply elsewhere if the names of their children are so low down on the list that their chances of admission are remote." (ibid. p. 170.)

16. MAP OF NATAL

The map of Natal which is given here will, it is hoped, make clear the position of the secondary schools in the larger centres, where numerous primary schools send pupils to secondary schools, i.e. there are numerous primary feeder schools to one secondary school.

17. GROUPING OF PUPILS WITHIN A STANDARD

The Schools Handbook (ibid.) makes reference to the placement of retarded, scholastically backward and mentally handicapped pupils, but no instruction is given regarding the grouping within the standard, i.e. in Class I, Class II, Standard I, II, III, IV, V, VI, etc. of normal pupils when there are more pupils than can be accommodated in one room.

Many teachers have expressed the opinion that grouping is a very difficult problem especially at the beginning of the secondary school which starts at Standard VI.

The following are some of the methods that were used in secondary schools at the beginning of 1959 for grouping Standard VI pupils into groups or divisions within a standard:

i. The intelligence quotient from the primary school was used. Where no intelligence quotient was available the pupil was given a temporary place until the intelligence test had been given by the registered tester of the school.

ii. Standard V marks from the previous school were used. Further tests were written within the first week. The Principal of this school commented, however, that "unless the tests are definitely selective they fail in their purpose."

iii. All Standard VI pupils were given a test set by the school in arithmetic, English composition and Afrikaans composition. On the results of these tests the pupils were graded into divisions within the Standard VI.

iv. For pupils who were admitted from one of the feeder schools the marks given in the primary school and intelligence quotients were used. In the same secondary school pupils who were admitted from other feeder primary schools were graded into divisions by the Principal who had, he states: "to act on the report from the primary school, taking into consideration class position and size of the class at the previous school."

v. Pupils were placed in divisions as nearly as possible in order of merit with the very limited information available, because the pupils were recruited from some six different schools.

vi. Pupils were grouped into divisions according to the order in which their names had been entered in the admission register, i.e. the first 36 names were listed for the first division, the next 36 for the following division and so on.

vii. Intelligence quotients were used where these were available, and the results of tests in English and arithmetic which had been set by the teachers of the secondary school were used for all pupils.

viii. The marks from the previous primary school were used, "but", writes the principal of one secondary school, "this is most unsatisfactory."

ix. Some schools grouped Standard VI pupils according to the marks obtained in the primary school, and re-grouped them in August on the results of the school examination written in June.

x. One of my students in the teacher training course was told by a teacher that the pupils in the secondary school where he taught were grouped according to size, i.e. the small were bright, and the large were dull!

At the beginning of Standard VII in 1959, the P1 or P2 pass, (see "The practical course" in this chapter) the courses to be

taken and the choice of subjects available all added to the complexity of grouping.

The ranges of mental and educational ages obtained from:

- a. one class and
- b. three different schools are given in the tables on the following page.

Table 5

Age Ranges within One Standard VID Class

Name	I.Q.	M.A.	C.A.	Reading Age		Spelling Age	Arithmetic Age	
				Vocab.	Parag.		Mechan.	Problem
1	104	14.4	13.8	>15.5	>15.5	14.3	12.7	12.9
2	114	14.1	12.4	>15.5	>15.5	15.2	13.2	14.9
3	72	10.3	14.3	11.7	12.6	12.2	10.8	14.3
4	96	12.6	12.9	14.8	14.3	15.0	12.7	14.3
5	88	12.7	14.5	12.7	13.6	13.3	13.6	> 17.0
6	95	12.6	13.3	>15.5	>15.5	13.4	14.2	13.4
7	89	12.5	14.0	13.8	12.6	13.2	11.2	11.4
8	102	13.3	13.0	14.2	12.6	14.2	11.7	17.0
9	103	13.8	13.4	12.7	14.3	14.1	>17.0	> 17.0
10	94	12.8	13.6	14.2	12.6	12.3	14.2	12.9
11	101	13.3	13.2	<10.5	<10.5	12.2	12.7	> 17.0
12	111	15.2	13.7	>15.5	14.3	10.7	13.6	> 17.0
13	99	16.0	16.2	13.8	12.6	10.8	13.2	17.0
14	97	12.2	12.6	15.1	14.3	>17.0	12.7	14.3
15	87	12.9	14.9	<10.5	<10.5	10.7	13.2	11.4
16	89	12.7	14.4	>15.5	<10.5	13.3	13.2	14.9

In Tables 5 and 6:

- i. I.Q. - intelligence quotient on the New S.A. Group Test; M.A. - mental age; C.A. - chronological age.
- ii. Ages, calculated in decimals, were obtained from standardized intelligence and scholastic tests.
- iii. < and > indicate the age limits of the test.

Table 6

Age Ranges in Standard VI Classes in Three Different Schools

Schol. Std.	I.Q. Range	M.A.	C.A.	Reading Age		Spelling Age	Arithmetic Age	
				Vocab.	Parag.		Mechan.	Problem
1. VI.C	88 - 110	11.3-15.8	12.7-15.4	<10.5->15.5	<10.5->15.5	10.4->17.0	9.8->17.0	12.9->17.0
VI.D	71 - 114	12.5-16.0	12.9-16.2	<10.5->15.5	<10.5->15.5	10.8->17.0	10.8->17.0	11.4->17.0
2. VI.C	73 - 104	*	12.7-13.7	<10.5- 14.2	<10.5->15.5	9.8- 15.0	10.8->17.0	9.8- 14.3
VI.A	78 - 133	*	12.8-14.7	<10.5->15.5	<10.5->15.5	10.7->17.0	11.2->17.0	10.4->17.0
3. VI.A	86 - 133	*	12.8-13.8	<10.5->15.5	<10.5->15.5	12.3->17.0	12.1->17.0	11.0->17.0

* These mental ages could not be estimated because full records were not available.

18. THE PRACTICAL COURSE

In his report for 1958 the Director of Education states:

With the object of solving the problem of retardations in Standard VII, a practical course has been introduced for the less gifted secondary pupil who wishes to proceed to the Junior Certificate stage only. (Natal. Education Dept., 1960, p. 6.)

A pupil who obtained a P2 pass was assigned to the Practical Course in which he might proceed only as far as Standard VIII. If he wished to proceed to Standard X he had to repeat Standard VI and gain a P1 pass, for only a pupil who obtained a P1 pass was allowed to proceed to Standard X in the usual way.

The examination by means of which these pupils were assigned to the Practical Course was one of the "old-type" (see Part I, Chapter III of this work), set internally in each school, sometimes by the headmaster alone, sometimes by one, sometimes by more than one teacher, and marked by the teachers in each school separately, each teacher usually marking the papers of his particular class.

The pupil had to obtain certain percentages in certain subjects, and the average (aggregate) of marks gained in certain subjects was also taken into consideration. All marks were left as raw scores.

Details of this Practical Course which was put into effect for Standard VII from the beginning of 1959 are given in the Natal Education Department Circular Minute. (Natal. Education Dept., 1958a.)

Pupils in Standard VI and their teachers appeared to be faced with many difficulties:

i. Standard VI was, and still is, attached to

- a. some primary schools,
- b. some secondary schools, and
- c. some full primary and secondary schools.

ii. Where b. was (is) the case, pupils proceeded (proceed) from as many as ten or more different primary schools to one secondary school. Some principals of these secondary schools

expressed the desire for help and/or guidance in equating the marks from so many different sources.

iii. Pupils were being passed "P1 or P2" on marks from many different primary schools.

iv. In the belief that they were acting in the best interests of their pupils, some principals passed all their Standard VI pupils P1.

v. The Technical High School in Durban would not admit pupils with a P2 pass.

vi. In small secondary schools where only one course was authorized, promotion requirements for the academic course could be relaxed to allow those who had qualified for promotion to the Practical Course to take an academic course.

The following is an extract from the report of the Director of Education for the year 1959:

The Practical Course in Std. VII was introduced at the beginning of the year. Promotion schedules for Std. VI at the end of 1958 showed that in many schools too few pupils had been restricted to a P2 pass. (This impression is borne out by the results shown in Std. VII schedules for 1959). This was probably due to the fact that the instructions relating to Std. VI promotions were issued rather late in 1958. Judging from the latest schedules, these instructions are now being more judiciously applied.

During the year, inspections of work and discussions with Principals have shown that in those subjects for which special syllabuses have been compiled, the differentiated course in (is) serving its purpose satisfactorily. In the remaining subjects where the less gifted pupil has to cover the same ground as the more intelligent pupil he is handicapped and frequently meets with failure. If differentiation is to be effective, it should be extended to all subjects and the consequent problem of certification faced. (Natal. Education Dept., 1961c, p. 6.)

19. DIFFERENTIATION IN SECONDARY COURSES

Circular Minute No. 109/61 N.E.D. No. 59/6 was sent to schools on 20th June, 1961, in order to provide courses of study suited to the capabilities of individual pupils. (Natal. Education Dept., 1961a.) (See Appendix B.)

There are two streams, Ordinary and Advanced, from the beginning of the 7th Standard, i.e. the second year in the secondary school, with Standard VI as an exploratory year. The differentiated courses were introduced into Standard VII at the beginning of 1962.

The general principle which would be followed in the two courses was that the Advanced Course would be much the same as the present syllabuses and that the Ordinary Course would follow the same broad outline, but not in such depth. The pupils in the Ordinary Course would therefore be able to cover the main points more slowly while the others would be able to explore the possibilities of those points more thoroughly. (Cameron-Ford, 1961, p. 30.)

At the end of Standard VI there are three standards of pass - Advanced, Ordinary and Leaving - assessed by means of the following:

Subjects and Marks

1. Main Language	.....	300
2. Arithmetic	.....	200
3. Second Language	.....	200
4. History	.....	100
5. Geography	.....	100
6. General Science	.....	100
7. One other subject	....	100

N.B. This seventh subject will be selected from third language (German or Latin), Mathematics and Health Education in considering a pass into the Higher Stream. If the pupil fails to qualify for promotion to the Advanced Stream then for the Ordinary Stream or the Leaving Certificate the selection will be from the above subjects and Housecrafts or Handicrafts. The subject in which the pupil obtains his best marks shall be included in the schedule. (Natal. Education Dept., 1961a, p. 5.)

From 1961 promotion to Standard VII and to either stream has been decided on the results of the Standard VI examination at the end of the year, according to the following:

i. Advanced Stream:

Main language	45%	} (6 subjects)
Arithmetic	40%	
2nd language	35%	
Three other subjects	40%	
Aggregate of seven subjects	50%	

ii. Ordinary Stream:

Main language	40%	} (4 subjects)
Arithmetic or 2nd language	30%	
Two other subjects	40%	
Aggregate of seven subjects	35%	

iii. Leaving Certificate Requirements:

Main language	35%	} (3 subjects)
Two other subjects from the seven listed subjects	30%	
Aggregate of seven subjects	30%	

A pupil may pass Standard VI at the:

- i. Advanced level which leads to a Senior Certificate (Advanced Grade) with Matriculation Exemption or a Senior Certificate (Advanced Grade);
- ii. Ordinary level which leads to a Senior Certificate (Ordinary Grade);
- iii. School leaving level and may leave school.

If he has failed and has turned 15 years of age, he may leave school; if he has failed and has not turned 15 years of age, he must repeat Standard VI.

If he has passed on the "O" level but wishes to follow an Advanced Level Course he may repeat Standard VI in the hope that he may obtain a pass on the (A) Advanced level.

In Natal our primary object is to exclude from the academic course those pupils who have clearly shown their inability to cope with it. ... We have of necessity, with our acute shortage of manpower, to be more generous in our selection than more thickly populated countries ... Our aim is to provide

for our weaker pupils a course which, while extending them to the full, will yet give them a recognised qualification. ... We relegate only 40% of our pupils to the ordinary stream. (Natal. Education Dept., 1961b, p. 50.)

20. HUMAN RESOURCES

Originally closely linked with that of England and Scotland, education in Natal has, since 1910, increasingly been affected by what is happening in the other three provinces of the Republic of South Africa. As part of a small white minority in a multi-racial country, Natal has to face the implications of "Job Reservation" which is part of the policy of the present Government. One of the effects of this regulation is that white pupils with low educational qualifications are debarred from certain occupations which are reserved for Bantu, Coloureds and Indians.

Natal is faced, too, with another difficulty in that this province has the largest number of non-whites (2,593,154) and the smallest number of whites (340,293) of all four provinces of the Republic of South Africa (Bureau of Cens. & Stat., 1960, Sp. report no. 234), and in the present situation it is from this small number of whites that the needs for professional and technical leadership for the whole province will have to be provided. This point is discussed further in Part I, Chapter II, Section C.

21. SUMMARY OF CHAPTER I

i. Education in Natal. The Natal education system is highly centralized.

ii. Control of education. While there is no division horizontally, i.e. between primary and secondary education, there is division vertically in that vocational education is controlled by the Central Government, while primary and secondary education is controlled by the provinces.

iii. Sex. No difference is made between the sexes in the interpretation of examination marks.

iv. Parental choice. Parents have the right to choose the medium of instruction for their children.

Parents have a choice, but no right, in the decision regarding the school or course in which their children will be enrolled.

v. Compulsory school attendance. Attendance at school is compulsory from the beginning of the child's eighth year until the end of his fifteenth year. Although this total period may be spent in the primary school, the majority of pupils spend some time in the secondary school.

vi. Age. There is no age limit in the primary school.

vii. Promotion. In the primary school, which includes Standard V, promotion is on the results of the internal examination, together with the year's record, assessment of the teacher and the headmaster. At the end of Standard VI, however, promotion and selection to the Advanced or to the Ordinary stream is on the result of one internal "old-type" examination which is set by each individual school. Two different subjects are controlled each year by the Natal Education Department.

viii. Failure. A pupil has to spend two unsuccessful years in one standard before he is referred to a psychologist. It is only if, in the middle of a year, a pupil is retarded to the extent shown in Table 1, that he is considered deserving of special attention. It is only when his school work is also unsatisfactory in relation to that of his classmates, that he is referred to the psychologist.

ix. Guidance services. Organized guidance is usually restricted to Vocational Guidance in the secondary schools where it is often given to pupils only during the year in which they intend to leave school.

x. Certificates. A school leaving certificate is issued to a pupil who leaves school when he has turned fifteen years old. A Junior Certificate is issued to a pupil who is successful in the external examination at the end of Standard VIII. At the end of Standard X certificates of two different levels are issued on external examination results. The Standard X Certificate is

either equivalent to the Matriculation Examination Certificate, possession of which is necessary for entrance to University, or to a Leaving Certificate which is not equated with the Matriculation Certificate, but completes the school course of those pupils who do not wish to proceed to University.

xi. Standard VI. This is the first year of that secondary education which is intended to meet the needs of the adolescent. There is, however, no regulation which states that all adolescents, that is those pupils who are twelve to thirteen years and older, should be in the secondary school. Standard VI is regarded as an exploratory year.

xii. Transition from the primary to the secondary school. The year of transition is complicated further by the fact that Standard VI is still attached to some primary schools, and that the chronological age range in Standard VI can be as great as eight years.

xiii. Zoning. Other factors which have to be considered in regard to transition at the beginning of Standard VI are:

- a. rejection of totally unsuitable pupils by some schools,
- and
- b. admission of pupils from ten primary schools or more to one secondary school.

xiv. Grouping of pupils. Eleven different criteria, at least, were used as bases for grouping Standard VI pupils into divisions within the standard.

xv. The practical course. The Practical Course made special provision for the less gifted with the object of solving the problem of retardation in Standard VII. (Natal. Education Dept., 1960.) This differentiation left the majority of pupils still following the same courses at the same level at the same pace. In addition, the selection of pupils to the Practical Course was made on the results of one internal old-type examination, set independently by each school.

xvi. The two stream policy. The less gifted pupils are allowed to proceed to Standard X, but on the Ordinary level. The method of selection is an old-type examination, set by each school separately, but with control by the Department of Education of two different subjects every year.

xvii. Human resources. Natal has to make provision in the labour market for its dullest pupils, and from its gifted it has to produce sufficient leaders for a population in which the whites and non-whites are in the ratio of one to seven.

22. CONCLUSIONS. CHAPTER I

i. Control of education. In common with the other provinces of the Republic, Natal is faced with the difficulty of divided control of education.

ii. Transition. As long as there are Standard VI pupils in the primary school, there will be many disparities attendant on the conditions of promotion to secondary schools.

The fact that many primary schools feed one secondary school makes fair and effective grouping at the beginning of Standard VI extremely difficult if there is no basis of comparison.

The use of so many different criteria of grouping emphasizes this difficulty.

iii. Age. A range in chronological age of eight years could mean a range of more or less fourteen years in mental age.

No provision is made to ensure that every child enjoys some secondary schooling, for there is no age limit to primary school attendance.

iv. Needs of the pupil. Apart from two or perhaps three new subjects, there does not appear to be a planned programme of exploration of the pupil's needs, abilities, ways of thinking etc., during the exploratory year.

v. Failure. The median chronological age for Standard V is 12.7, and 6% of Standard V pupils are 14 years and older.

This means that at least 6% of Standard V pupils are backward and/or retarded. (Burt, 1952.) The Practical Course was originally introduced with the object of solving the problem of retardation in Standard VII. It would seem that measures to combat retardation are required much earlier than Standard VII.

Help comes too late when a pupil has had to fail twice before he is referred to a psychologist.

vi. Types of children. Pupils in both the Advanced and Ordinary streams follow much the same syllabi, but the dull are excluded from the academic stream and certain subjects. It would seem that pupils are streamed according to two of the three hypothetical types of ability which are discussed in Part I, Chapter II, Section C.

vii. The comprehensive school. The Province has, it would seem, already accepted the idea of a bilateral or a type of comprehensive school as part of the solution to the problem of providing equal educational opportunity for all.

All schools will have to provide the same subjects if there is rigid zoning.

viii. Selection vs. allocation. There has always been a measure of selection to secondary education (see Part I, Chapter II) and when Natal introduced the Practical Course it was an attempt to make provision for those who were not selected for the academic course. The process of providing for the less gifted pupils has been continued in the new two stream policy, the differences being that two levels of instruction are provided in certain subjects, and that pupils are able to proceed to Standard X, and not only to Standard VIII as was previously the case. The method of selection, however, remains the result of one "old-type" examination (see Part I, Chapter III) and no special provision is made for the gifted pupils of Natal.

Faith is still placed in the powers of the old-type examination which has to be elective, selective and detective.

None of the criteria used for grouping in the schools, with the exception of the Intelligence Test, is a valid or reliable

method of selection. Unless the predictive value of the Intelligence Test is known, and the criterion of success is clearly stated, the use of the intelligence quotient is not a satisfactory means of selection. In addition, unless there are at least two results of intelligence tests and these have been obtained within twelve months at most, of the selection, such selection is not likely to be accurate or just. One has to be certain, too, that the tests were given by persons qualified to give such tests.

The wishes of the parents are not paramount in the choice of a stream.

The fact that totally unsuitable pupils can be rejected by principals of secondary schools implies that certain schools may have so few Ordinary level pupils that the compulsory provision of such a stream can be an embarrassment to the small number of pupils who are singled out.

Rejection of these totally unsuitable pupils will not be possible if zoning is rigidly carried out.

Natal is the only province which still retains an external examination at the end of Standard VIII.

ix. Education for girls. If selection to the Advanced stream is on marks only, and if no consideration is given to the difference in rate of development between the sexes, it would seem reasonable to suppose that proportionately more girls than boys will reach this stream.

x. Human resources. When consideration is given to the small number of intellectual "elite" in proportion to the large number for which it has to provide, it is obvious that there is in Natal a serious neglect of its gifted and talented pupils. (See Part I, Chapter II, Section C.)

xi. The teachers. The teaching of one subject on two levels in one classroom, which is what may well happen in the smaller schools, will place extra demands on teachers, both in the schools and in training.

xii. Research. Adequate differentiation raises so many issues that it would seem necessary for special research facilities to be available to the Natal Education Department.

In the following chapter the problems of grouping are discussed. The methods of streaming and selection which have been adopted in nine other educational systems are described. The problems which arise in connection with streaming are considered in relation to the conclusions which have been reached in regard to the problem in Natal, and suggestions in this connection are offered.

A description and evaluation of the methods of selection and further suggestions will be found in Part I, Chapter III.

CHAPTER II

STREAMING AND SELECTION

Psychologists should realize - and should try to educate the public to understand - the wider background of selection.

P.E. Vernon

INTRODUCTION

Many educationists have revealed their faith in the influence of innate inheritance and in the need to condition by education (Holmes, Lauwerys and Russell, 1961) and have urged that all should receive not only adequate education but also equality of educational opportunity, yet this conditioning by education has, until recent times, been regarded as the need of the favoured few. It has taken the Second World War and the rise to dominance of the United States of America and the U.S.S.R. to give decisive practical support to these notions of equality and of universal access to secondary and, perhaps, higher education. The acceptance in varying degrees by different countries of this ideal of equality of educational opportunity as a guide to practical reform has been involved in educational debate which is "mixed up with discussions about class hierarchies, social organization, political doctrine, economic policy" (ibid. p. 7) and divergent philosophies.

New thinking has also brought the recognition that it is not only the intellectual side of the child which is important; provision must also be made for his physical needs and physical growth, his emotional needs and his emotional development, his social needs and the development of his human relationships, and for his future occupational needs and his later vocational training. There has been recognition, too, that each of these needs is as varied as are the differences among, between and within individuals, and as are the demands of society upon those individuals.

The first concession to those who believed that education was not for the favoured few only was the introduction of elementary education compulsory to the age of fourteen years. The experience of teachers in trying to teach all children up to this age gave rise to the problem of measurement of and provision for mental differences, a problem which has been one of the most persistent in education.

This provision for and adequate measurement of individual differences was primarily the concern of elementary education in which different kinds of grouping, usually by ability, were tried.

The development of scientific measurement and the implicit belief in the predictive powers of the Intelligence Test by means of which ability was assessed made possible the placing of pupils in so-called homogeneous ability groups. This meant that pupils were selected for ability groups, with the brightest being selected for the A group, the dullest for the C group, while the average or border-zone pupils from the A and C groups were usually placed in the B group.

The introduction of compulsory elementary education to the age of fourteen, then, meant that the need for catering successfully for individual differences became more urgent. It meant, too, that selection of those who were to benefit by elementary education became unnecessary, yet selection to the schools for the favoured few, nevertheless, remained. This selection was made on the basis of various traditional devices, such as birth, social position, parental expectations, family incomes and social traditions. (ibid.)

Two kinds of educational provision were, thus, in force, viz., one kind for the children of the privileged and one for the children of the poor. In addition, two criteria of selection were being used: (i) selection to a type of education on traditional criteria, although assessment by some kind of examination was frequently used in addition, and (ii) selection to an ability group in which the criteria were the results of standardized tests, i.e., intelligence tests.

While the problem of grouping of pupils of widely differing abilities remained largely that of elementary education, the increase in the period of compulsory schooling in many countries, the implementation of a policy of equality of educational opportunity and the resultant attempt to provide some secondary education for all have made change inevitable. Part of this change has resulted in a movement up from the primary to the secondary school, like the higher reaching of a wave, of the whole problem of providing for widely differing abilities. The secondary school, no longer the preserve of the privileged, has now to shoulder the responsibility which was formerly that of the primary school.

It would seem that as the period of compulsory schooling is increased and a curriculum of general education is extended from the primary school further and further up the secondary school course, the problem of selection for differentiation will reach ever higher in the educational system.

The result of all this is that the secondary school is now faced, more insistently than it has ever been, with the additional tasks of finding really effective methods of grouping pupils for instruction and of developing scientific and equitable methods of selection.

Grouping and selection in the secondary school are attended by many of the same difficulties which accompanied them in the primary school; three complications, at least, are added. In the secondary school not only have individual differences in general ability widened from approximately four years in the infant classes to seven or eight years in Standard VI, but differences in abilities, which first appear in late pre-adolescence and early adolescence, become increasingly more pronounced, while the demands of the world of work become ever more insistent. These demands require, in part, earlier specialization so that young people will, while still at school, have to be trained for specific occupations. If, however, the overall needs of children and adolescents as persons, rather than just those needs which arise from the orientation of persons towards the world of specialized work, are regarded as paramount, then the time of selection for specialized training will have to be delayed.

This chapter traces briefly the change in thought and policy in regard to grouping as an educational device, analyses factors involved in grouping, outlines the methods of streaming and selection used in the countries studied, discusses conclusions reached on streaming, and makes suggestions.

The techniques, procedures and methods of selection are considered in Part I, Chapter III.

SECTION A. STREAMING

1. DEFINITIONS

i. Streaming and grouping

The term streaming is frequently used as a synonym for grouping. Both streaming and grouping can mean ability streaming or ability grouping, interest streaming or interest grouping; in addition, homogeneous grouping can mean homogeneous ability grouping. Because confusion can arise from failure of different people to use terms in the same sense it seems wise to define the use of the terms in this work.

ii. A group

This is the looser concept and unless it is prefixed by a qualifying adjective its meaning is that which is given in the Concise Oxford Dictionary, viz. "A number of persons or things standing near together, knot, cluster", so that grouping implies simply the placing of persons together.

iii. A stream

This is defined by the Concise Oxford Dictionary as "a body of water running in a bed"; the verb "to stream" means "moving or situated upwards or downwards". A stream, then, is restricted yet fluid; it is moving in a definite direction. Metaphors in education can be misleading unless their implications are clear (Scheffler, 1960), so that the term streaming is reserved to cover that grouping of pupils in secondary schools who are placed together in an attempt by education authorities to implement a policy of equality of educational opportunity. Pupils in a stream will be considered to work at the same level, to follow the same course, to move at the same pace towards a common goal. There will be one or more streams in any school population according to the size and kind of school. Different kinds of streams or streaming will be discussed in this chapter.

2. DEVELOPMENT OF IDEAS IN REGARD TO GROUPING

i. One teacher to many grades

As soon as the situation arises in which there are more pupils than teachers, pupils have to be taught in groups, that is, the classroom group is a planned learning situation. At one time children of different ages and grades (standards in this country) of attainment were regularly taught by one teacher.

ii. One teacher to one class

In England, the system of having as many as six grades under the direction of one teacher changed with the introduction of the payment-by-results system, while in America it was replaced, largely as a result of German influence, by the assignment of one teacher to a class.

iii. Grades (standards)

As late as 1880 school superintendents in America "were bringing home to their constituencies the gospel of school improvement through more careful and complete grading of subject matter and more homogeneous grouping of pupils into grades." (Reisner, 1936, p. 34.) This grade system with its courses of study, graded textbooks, annual assignments to be mastered, passing grades, final examinations, grouping of pupils on a basis of annual promotion that would suit bright, average and dull pupils brought with it the defects which represent a large part of the inadequacy of schools of the present time. (Reisner, 1936.)

iv. Problems consequent on compulsory education to fourteen years of age

The introduction of compulsory education for the entire body of children from ages six to fourteen made necessary the provision of a system of instruction more or less well adapted to the needs of dull, average and bright children. This was quite a different matter from providing a suitable school experience for the average and bright who, before education was made compulsory, had comprised the school population. (ibid.)

v. Recognition of intellectual differences

In order to try to solve some of the problems created in schools in England by the introduction of compulsory education, the assistance of Sir Francis Galton was sought. He was requested to devise some scientific means of discovering which pupils were educable and which were not.

In 1904 Binet, whose work was influenced by that of Galton, was invited to develop a scientific method of distinguishing between the insane and the feeble-minded. These pupils were in the schools of France as a result, partly, of the more humanitarian approach to the mentally ill which was one of the outcomes of the teachings of French philosophers during the Revolution (Anastasi, 1954), and their presence created a new problem for teachers.

As early as 1897 Rice in America had been engaged on research on the differences of examination results in various schools. In 1903, in that country, too, Preston W. Search in his book, "An Ideal School", had revealed his vision of the potentialities of individualization. (Search, 1903.)

It was as a product of the scientific studies of human nature that the widespread and increasing recognition of the part played by individual differences in determining the outcomes of any educational procedure developed.

vi. Disillusionment in the infallibility of mental measurement

Originally the emphasis had been on measurement of ability, by means of intelligence tests, i.e. on the purely intellectual functioning (the cognitive or directive side) of the individual. (Fleming, 1946; Rudd, 1956.)

During 1910-1935 the extensive development of methods and wide application of tests and mental measurements (Rudd, 1956) made it possible to describe more accurately what children were learning in schools and what their ability was to profit by school instruction. The wide diversity of abilities and achievement in

a given school grade was indisputably revealed (Burt, 1921), and these revelations led to various attempts to suit the differing abilities of individual pupils.

From the work of Burt in 1917 it has been concluded that there is no way of forming homogeneous groups except with respect to one subject at a time. (Vernon, 1957a.) By the middle of 1930 it was becoming increasingly clear that the problems attending classification by ability were not easily solvable and evidence of some misgivings as to the desirability of organizing pupils into ability groups can be found in the writings of this period. (Rudd, 1956.)

vii. Other factors of importance in grouping

These years of disillusionment in the panacea of mental measurement and quantitative measures for the ills of education saw a significant reorientation in educational thought generally, for it was being realized that the affective (conative or dynamic) side of the individual was quite as important as the intellectual side. Interest was also being directed to the work of social anthropologists who emphasized the effects of membership of a society upon child development (ibid.) as well as the need to consider not only grouping of pupils into sociological groups which would have cohesiveness and dynamic purpose (Coxe, 1936), but also the human relations within the group (Montagu, 1957) and the leadership of the group. (Fleming, 1955; Lewin, Lippitt and White, 1939.)

3. DIVERGENT PHILOSOPHIES UNDERLYING GROUPING

The contributions of the National Society for the Study of Education Thirty-fifth Yearbook (Nat. Soc. Stud. Educ., 1936), in which a great part of the book is devoted to the divergent philosophies which underlie the grouping of pupils, indicate this change in educational thought.

i. Cornell (1936) found:

The results of ability grouping seem to depend less upon the fact of grouping itself than upon the philosophy behind the

grouping, the accuracy with which grouping is made for the purposes intended, the differentiations in content, method, and speed, and the technique of the teacher, as well as upon more general environmental influences. (p. 304.)

ii. Boyer (1936) states:

Ability grouping must be defined in such a way as to preclude the possibility of rigidly standardized procedure on any group level. It must promote the effective educational growth of pupils by providing social settings significant for both group and individual activity Temporary or supplementary groupings for specific purposes can and should be formed within the several ability groups, or they may cut across these groups. (p. 214.)

iii. Engelhardt (1936) states:

Problems of pupil classification are inextricably woven into the fabric that constitutes the organization created for carrying on the educational program. School officials need again and again to be halted in their discussion of educational problems and made to realize that changes in one phase of school organization must be related to the whole organization if smoothness, effectiveness, economy and continuity are to prevail The problem of pupil classification must be attacked through carefully planned experimentation. (p. 29.)

iv. Reisner (1936) states:

The needs of our heterogeneous school population will be met only as we succeed more and more completely in getting the right children together to follow those school experiences that are adapted to their abilities and their economic future. (p.38.)

v. Raup (1936), one of those who disapproved of ability grouping, states:

The most usual objection to ability grouping is that it is not democratic Three lines of development -

- (1) a quest for bases of authority in uniformities supposed to exist in human relations,
- (2) a confusion of social intelligence with the wide acquisition of the highly abstract subject matters in our intellectual tradition, and
- (3) the unwitting entrenchment, through educational practice, of unwholesome social procedures, -

have converged in our policy of grouping to make it an agency far from desirably consistent with the purpose of a democratic society. (ibid., p. 55.)

.... Those judging would be ... wary of the domination of standards and norms and fear nothing so much as arbitrary and fixed classifications in the face of the variable, uncertain, and creative forces that will always make the year that is ahead. (ibid., p. 56.)

vi. Albery and Brim (1936) state:

It would seem that ability grouping as commonly practiced leaves much to be desired as an effective tool for achieving the values of the new education. It has served a very useful purpose in attempting to break the lock step in education by calling attention to the fact that individuals vary in abilities, interests and needs. It has helped to bolster up the time-honored conception of education as the achievement of fixed goals, and undoubtedly has actually proved its value in attaining those goals. As a device of transition from the old to the new, it has proved its worth. Undoubtedly it will continue to serve a useful purpose for a long time to come. Yet as we succeed in capturing the new spirit of creative education, we shall develop new and more effective techniques for recognizing interests and abilities - techniques that will be more consistent with our growing concept of a dynamic social education that bids fair to salvage much from our sorry experiment in democratic living. (pp. 132, 133.)

The modern concept of democracy implies a recognition of the uniqueness of the individual - a basic respect for the full and complete development of personality. This means that differences among individuals are cherished and nurtured. In practice, therefore, the school must recognize various types of grouping for the purpose of achieving social sensitivity, and for fostering the all-round growth of the individual. The most desirable group activities, then, are those in which each individual is stimulated to make his unique contribution to common ends. The true social group cannot function effectively if all individuals possess the same talents. In a school activity, as in a social activity outside the school, there is need for a wide diversity of talent. (ibid., p. 130.)

vii. Coxé (1936) states:

People function in groups; thus human relationships and human understandings that grow out of experiences with other persons are important. The thesis could be defended that the way in which pupils are grouped for instruction is as important for the pupils as the subject matter they study Individual and group differences must be emphasized rather than minimized in our educational procedures. (p. 18)

viii. Chapin and Conway (1936) state:

If "school is life and not just preparation for life", the acquisition of habits, attitudes, and techniques that will facilitate adaptation to life in a changing world, rather than

detailed information, should constitute the paramount aim of education. Since that world is peopled by individuals organized into functional units, every child should be trained to live and participate in the activities of groups; and since the fact that individuals differ in their abilities to perform the various necessary functions in group life has been established, every child should likewise be trained to evaluate his own abilities in terms of the requirements of changing situations. (p.77.)

4. INDIVIDUAL NEEDS AND GROUPING

Various studies seemed to show that as long as individual needs were being met by the teacher, the kind of grouping was not material. (Rudd, 1956.) Emphasis was moving from academic success to the needs of the pupil as a person.

5. COMBINATION OF METHODS OF GROUPING

Two studies which are reported by Rudd (1956) and which are particularly worthy of mention are those of Kvaraceus and Wiles (1938) and of De Long (1938) in which pupils were grouped homogeneously, as far as possible, in the tool subjects, i.e. English reading, language, spelling and arithmetic and heterogeneously in other work. The writers claimed that during the year there had been more than the average amount of growth among their pupils.

6. THE SOCIAL NATURE OF CLASSROOM GROUPS

Rudd (1956) describes research which emphasizes the importance of the structure of groups within the classroom in the belief that effective learning cannot take place in conditions of social and emotional stress, the kinship of interests and attitudes which are involved in children's groups and the fact that geographical proximity alone is not sufficient basis for the formation of groups. (See, also, Section C, "Social psychology and grouping in schools".)

From evidence in the findings of Blanchard (1947) it is clear that difficulties in establishing friendships in the forms to which they have transferred are likely to be experienced by pupils who are moved from one form to another, and that regularly promoted groups showed happier peer group relations than did those groups in which there were members who had been retarded, i.e. failed.

7. SUB-GROUPING

Cook (1948) and Jones (1948) suggest sub-grouping on the basis of achievement in specific subjects, or "learning areas". This would involve different grouping in each subject area.

8. NEWER APPROACHES TO GROUPING

Goodlad and Anderson (1959) strongly recommend non-grade types of organization. In England 'standards' have been almost entirely abandoned in the primary schools. (Wall, 1955b.)

Trump (1959) suggests three kinds of activities around which the secondary school of the future will be built: large-group instruction, small-group discussion, and individual study.

Although the value of being a part of a group is often regarded as a goal, research has emphasized the performance and behaviour of the child as a single isolated component, so that while the mechanical device of grouping facilitates individualization, it cannot guarantee it. Grouping is not a method of teaching. It is only quality teaching which uses methods appropriate to the individuals comprising the group which will result in the desired achievement of each individual pupil. (Davis, 1960.)

This quality teaching will need to be based on a freer living and more vital growing experience for children, and a more creative thinking. (Reisner, 1936.)

Davis (1960) discusses the need for groups and sub-groups within class groupings for specific purposes. The success of this kind of division is dependent on class size, pupil-teacher ratio and pupil-teacher relationships. Groups should be flexible as to size, duration and purpose.

Daniels (1961) found that dull pupils in a heterogeneous group showed greater improvement than did dull pupils in a homogeneous ability group. He does not, however, state by what criteria the latter were grouped, and he emphasizes the fact that the pupils in the former group received individual attention. Such evidence is inconclusive.

Husén (1962) reports the findings of research in Sweden in which pupils in different kinds of schools were followed up for two years. These findings do not support the beliefs held by many educators (ibid., p. 313) "that an early selection for the academic type of secondary school would be of benefit both to those who are selected and to those who are not." They seem to indicate that if the intellectual development of pupils is measured by reading, writing, arithmetic and English tests, it does not matter so much whether a bright boy is in a comprehensive or selective environment. An undifferentiated environment, in which the whole range of interests and abilities is represented, produces higher gain in pupils of lower scholastic aptitude than does an educational environment in which they have no contact with bright and school-motivated classmates.

9. DIFFERENT KINDS OF GROUPING HAVE BEEN TRIED

Sometime, somewhere, someone has tried out any plan that can be proposed. (Olson, 1960.) Some of the plans which have been tried out are:

i. Homogeneous grouping

- a. Classroom grouping is an attempt to deal with pupils in the respects in which all children are alike;
- b. Sub-groups are used in order to treat pupils in the way in which they are like some others.

ii. Individualization

This is introduced for the purpose of dealing with a pupil in the respects in which he/she is unlike other children. (ibid.)

iii. Heterogeneous grouping

In this kind of grouping the only basis for grouping is that the group consists of children.

iv. Special grouping

- a. Dull pupils: Special classes or schools are provided for those children who are so exceptional that it is easier to meet their needs in special classes or schools. These are the mentally and physically

handicapped children whose separate groupings may add to the comfort and convenience of all concerned.

- b. Gifted pupils: Some enthusiasts contend that special classes for gifted children are the ideal and necessary way for meeting their needs. (ibid.)

v. Ability grouping

The following types of ability grouping have been used:

- a. Ordinary grade divisions (using the term grade in the sense in which it is used in the United States) in so far as ability to learn improves with age and correlates with grade.
- b. Homogeneous grouping, or ability groups within the grade; dividing the class into sections on the basis of ability to learn. The sections are supposed to be more homogeneous than the larger group from which they are made.
- c. Special classes or institutions for the feeble-minded.
- d. Opportunity rooms for the gifted or bright pupils.
- e. Ungraded rooms, theoretically built for dull children or restoration cases.
- f. Teachers' subjective grouping within a class.
- g. Entrance requirements of various sorts, e.g. admit to kindergarten under five years if mental age is five or over.
- h. Mutual aid groups.
- i. Subject groups.
- j. Grouping for specialized activities, such as physical education, music, art, etc.

In groups a, b, c, d, e and g, h, i, the criterion of mental ability is fundamental.

* 10. SOCIAL PSYCHOLOGY AND GROUPING IN SCHOOLS

i. Confusion in the social order

One of the functions of education is to prepare people for participation in other social organizations. Because, however, there is confusion within the social order and the school is culturally vulnerable it is difficult for education to carry out

this function. Education is not able to define its purposes sharply or to show the necessary firmness of discipline in the full development of the pupils within the school. (Goodson, 1960.) This point is touched on again in Section C, "General or special education", and "Types of children" in this chapter.

ii. Value conflicts

There is conflict within the changing norms of society which, in many cases, oppose the individual and the group, so that here, too, is uncertainty and some confusion. It is, nevertheless, true that there is a gradual recognition of the complementary nature of the individual and the group; of the freedom of the individual to act and to commit himself. It is coming to be accepted that the greater the opportunity of voluntary action the stronger is the group organization. Acceptance of the idea that an individual is a "man" and not a "cog" without the opportunity of voluntary action emphasizes the detrimental effects of too early specialization. (See "General or special education" and "Types of children" in this chapter.)

iii. Classroom groups

In the classroom group pupils come together for the purpose of learning, which is the primary reason for the group's being together at all. In this situation the pupils have no choice, for attendance in classroom groups is compulsory, and the goal, usually, is dictated from without or above.

From the point of view of the individual within it, the composition of the classroom group is casual and haphazard. The pupil may find that he is among strangers who comprise an accidental social environment and, in most cases, if he is disturbed by these involuntary associations, he has no recourse. Yet if he is disturbed, the greater part of his working hours may be focussed on getting along with these disturbing associates.

The learning process is affected by the nature of social interaction so that the compulsory and random selection of pupils will have an effect on what is learned. (Getzels and Thelen, 1960.)

In the ordinary school most instruction is given in the group situation. If learning is to take place, however, there must be motivation, whether at the conscious or unconscious level. Motivation, in turn, is interfused with the relationships of the individual and the group. A pupil can be carried along by the group motivation, but only when he identifies with the group. Diagnosis and guidance of the individual-group relationship is, therefore, of vital concern to teachers. Without an understanding of group attitudes the teacher, and consequently the class, loses much of the motivational power which springs from group relationships.

iv. The individual and the group

a. General. In trying to understand group attitudes it has to be remembered that the meaning of the group atmosphere for the individual is determined by his personality and his attraction to the group.

b. Acceptance. Most children and adolescents need to be accepted members of the classroom group, and there is, therefore, a need to conform to group standards. The feeling of belonging which an individual develops within the group is accompanied by increased feelings of security for all the members of the group. The greater this feeling of belonging, the greater is the ease of more significant communication between the teacher and the pupils as well as between and among the pupils themselves; the greater, too, is the shared pride in the achievement of both individual and common goals. (ibid.)

The more an individual identifies with the group, the more of his behaviour will it influence. He will respond to the group attitude of acceptance by accepting its learning goals. (Morse, 1960.) This means that socially accepted pupils are more successful in school work and in social relationships. It should nevertheless be mentioned that Hunter (1953) found that pupils who are successful in school are less dependent on group acceptance than are pupils who are unsuccessful. In this apparent contradiction it is necessary to comment that (i) Hunter does not state that

pupils who are successful in school are successful in social relationships. It might be assumed that pupils do not mind whether they are successful here or not. On the other hand it would appear that (ii) those pupils who are unsuccessful in school are dependent on group acceptance (Hunter) and that unless they are socially accepted (Morse) they will not succeed in their school work. This seems to mean that cognizance of the forces within the groups of pupils who have failed, as well as of those who feel that they have failed by being in the O-level, is imperative.

c. Rejection. The need to be approved, valued or esteemed by others is one of the basic psychological needs of all human beings. If, therefore, the individual does not perceive and feel that he is accepted and valued by other members of the group, his emotional responses may lead to the restricting of his participation in the affairs of the group. The pupil who feels different or left out becomes anxious; this anxiety may mean that the pupil will struggle neurotically to be accepted. It is important to note that pupils who fear that they will be left out or rejected are more productive on the competitive type than on the co-operative type of task. (Morse, 1960.)

The more cohesive the group, the greater is the rejection of the deviates and thus the less successful is the rejected pupil likely to be on matters requiring co-operation so that a "vicious circle" is created. (Shiels, 1951.)

Although in those classrooms where there is low mutual affiliation and the individual is free of criticism, he is also free of support, and the potential of the group force is lost as a motivation to learning. This means that a pupil who is forced to do group work with peers who reject him is not likely to be motivated by the experience. (Morse, 1960.)

d. Fear. Fear of loss of prestige and social acceptability underlies the emotional life of groups. The persons who are largely responsible for this fear are those who determine the feats which members have to perform to retain acceptability and the rewards and punishments which will follow one's performance or behaviour. In the classroom it is the teacher who holds the

authority and power which can directly contribute to the intensity of the fear which group members will experience. This means that fear, which is one of the manifestations of the authority and power of the group, can impede or facilitate work, depending on the authority and relationships within the group. (Jensen, 1960; Lewin, Lippitt and White, 1939.)

v. Variety of goals of the group.

Classroom groups have many goals. For assimilation of content, the individual may learn faster out of a group pattern; for problem-solving, however, the group gets more solutions, rejects more incorrect ones, and provides more effective learning, and the more complex the problem, the greater is the advantage of group effort. The group may enhance learning for the less able or average students, but when problem-solving is the learning task in hand the brighter pupils are likely to be able to solve their problems faster by themselves. (Morse, 1960.)

Because any system of grouping merely reduces but does not eliminate heterogeneity, and the degree of overlapping is more significant than the size of the average differences between the groups, and because there has been confirmation of the hypothesis of multi-potentiality (Fleming, 1958), it would seem that all rigidity in any system of grouping should be avoided. It would seem, too, that there is need for many sub-groups and re-groupings, i.e. that setting in separate subject areas supplies part of the machinery of providing for individual differences and interests.

vi. The peer group at pre-adolescence

At pre-adolescence, the last year of which is roughly twelve (Blair and Burton, 1951), when his task is predominantly one of social adjustment, the child attaches tremendous importance to acceptance in the gang, i.e. his peer group of like age and sex. His success in finding the approval of his peers is likely to affect the confidence with which he begins his adjustment to his peers and the opposite sex at adolescence. (ibid.) During adolescence, as well as during pre-adolescence, between which no sharp division can be drawn, approval and disapproval by the peer group are strong forces which may become so great that they out-

weigh the influence of parents and teachers in many areas of the young person's life. (Jersild, 1957.) This topic is touched on again in Section C, "Failure", and in Part I, Chapter III, "Age".

11. SUMMARY OF SECTION A, CHAPTER II

i. Definitions

- a. Grouping. This means a placing together of persons.
- b. Streaming. This term is used with a special meaning in that pupils are placed together, and move at the same level and pace towards a common goal, the pupils being similar in one or more respects.

ii. Development of ideas in regard to grouping

- a. Pupils were first grouped so that one teacher taught different ages and grades.
- b. This kind of grouping was replaced by the assignment of one teacher to a class, and
- c. by grouping of pupils into grades.
- d. The introduction of compulsory education and the growth of the scientific movement in education emphasized individual differences.
- e. During 1910-1935 pupils were grouped on "ability" which was usually measured by examination results, and/or intelligence tests.
- f. It was realized that mental tests were not infallible and that homogeneous groups can be formed for only one subject at a time.
- g. Work of social anthropologists emphasized the effects of membership of a society upon child development.

iii. Divergent philosophies underlying grouping

- a. Grouping depends on the philosophy behind it. (Cornell, 1936.)
- b. Rigidity and standardization of procedure must be precluded in ability grouping. (Boyer, 1936.)
- c. School officials must realize that changes in one phase of school organization must be related to the whole organization. Planned experimentation is essential. (Engelhardt, 1936.)
- d. Right children must be grouped together to follow school experiences that are adapted to their abilities and economic future. (Reisner, 1936.)

- e. Ability grouping is not democratic. Arbitrary and fixed classifications should be feared. (Raup, 1936.)
- f. Ability grouping has been useful as a device of transition from the old (lock step) to the new. New and more effective techniques more consistent with the concept of a dynamic social education must be developed. Differences among individuals must be cherished and the all-round growth of the individual is to be fostered in a true social group which requires diversity of talent. (Alberty and Brim, 1936.)
- g. Human relations are important because individuals function in groups. (Coxe, 1936.)
- h. School is life, not just a preparation for it. Every child should be trained to live and participate in activities of groups and to evaluate his own abilities. (Chapin and Conway, 1936.)

iv. Needs of individuals have to be met and as long as this is done the grouping is not material.

v. The advantages of alternating homogeneous with heterogeneous grouping have been shown experimentally.

vi. The social nature of classroom groups is emphasized

- a. Emotional needs of the pupil in the group are stressed.
- b. Friendship groups are important.
- c. Transfer makes friendships difficult.
- d. Regular promotion makes for happier peer groups.

vii. Sub-grouping in each subject area has been suggested.

viii. There are new approaches to the problem of grouping.

ix. Different kinds of grouping have all been tried.

x. Social psychology and grouping in schools

- a. Confusion in the social order makes it difficult to define sharply the purposes of education.
- b. There is a value conflict between individualism and collectivism.

- c. Conditions within the classroom which must be noted are:
- (i) The structure of the group is haphazard, casual, yet compulsory.
 - (ii) The individual has to adjust to his accidental milieu.
- d. The individual and the group:
- (i) The motivational power of the group in the learning situation should be understood by educators.
 - (ii) Acceptance by the group makes for greater success in school work.
 - (iii) Rejection by the group may lead to neurotic behaviour, unco-operativeness in the pupil and loss of the group motivation to work.
 - (iv) Fear underlies feelings of rejection. It is dependent on the authority, atmosphere and human relationships within the group.
- e. Groups have various goals, and the brighter pupil may, in some tasks, work more quickly by himself.
- f. The pre-adolescent needs acceptance in his group of peers in sex and age.

12. CONCLUSIONS. SECTION A, CHAPTER II

i. A change in one phase of education needs to be related to the total organization which must provide for planned experimentation.

ii. Grouping of itself solves no problems.

iii. "Careless, indiscriminate assignment to class groups cannot be condoned any more than can rigid placement according to general ability." (Davis, 1960, p. 215.)

iv. There must be rethinking on all ideas of grouping because flexibility in the grouping of pupils is essential.

v. It is necessary for educators to become aware of the emotional learnings which are produced by instructional groups.

vi. Unless the work relationships within the group, i.e. authority, informal or friendship relationships, social accep-

tance, are in harmony with the group organization and action for achieving given learning goals, a teacher will not be successful in instituting such a group organization.

vii. Success of the group depends on the adaptation of curricula, on the syllabus, method, content and on the attitude of the teacher.

viii. In using the dynamics of social groups in the learning situation, an attempt should be made to meet the needs of the individual.

ix. It is impossible to emphasize too strongly the importance of human relations within the group.

x. A child whose growth pattern places him at the extremes either in size or functional maturity in his peer group, so that he is accelerated or delayed, may face grave difficulties of adjustment in his group.

xi. Regular promotion makes for happier peer groups.

xii. The adolescent needs acceptance in his peer group of like age and sex.

xiii. The susceptibility of the adolescent to group pressures may make the high school class a more powerful or significant group than is the elementary class. (Jersild, 1957; Morse, 1960.)

xiv. Brighter pupils need the opportunity of working on their own when the learning task is one of problem-solving.

xv. While dull children need individual teaching, super-normal children need an ampler opportunity for individual work. (Burt, 1921.) There does not appear to be opportunity for either when classes are too large. In the Natal Education Department an infant class may cater for up to forty pupils; a primary class may be for 36-40 pupils, and a Standard VI class may have from 32-36 pupils. A schoolmaster once described himself as a "Circus Master" if he taught more than 30 pupils in one class. One would hesitate to apply the metaphor to the teacher of infants! Too often grouping practices place pupils in the Procrustean bed of the average, and pupils are graded down to their worst and not up to their

best subject. (ibid.) Size of classes is discussed further in Section C of this chapter under the heading, "Increasing demands on the teacher".

xvi. Adequate differentiation in the secondary school will be facilitated by the grouping of pupils in the primary school in accordance with modern psychological knowledge of pupil growth and maturation processes.

13. SUGGESTIONS. SECTION A, CHAPTER II

i. Flexibility should be the keynote in any grouping policy.

ii. There should be large groups for some kinds of instruction, small groups for some kinds of learning and individual assignments for some kinds of work.

iii. Provision should be made for bright pupils who work better on their own where "problem-solving" is the task in hand.

iv. Pupils should be placed in "sets" for separate subject areas.

v. Grouping of pupils in the primary school according to age-grade (standard) should be replaced by grouping on the basis of modern psychological knowledge of pupil growth and maturation processes.

vi. The physical, intellectual, emotional and social needs of the individual should be considered in the grouping of pupils.

vii. The dynamics of the social group should be used in the learning situation.

viii. Grouping should take into account the fact that boys in pre-adolescence (9 to 12+ years) generally need to be with men.

ix. In grouping pupils for instruction cognizance should be taken of the importance which pre-adolescents and young adolescents attach to membership in a group of sex and age peers.

SECTION B. METHODS OF STREAMING AND SELECTION

In this section a description is given of the methods of streaming and selecting used in the ten educational systems which are under review. The order of description has been determined by the fact that it is necessary to understand the circumstances of the four provinces of the Republic of South Africa to be able to appreciate some of their difficulties, and particularly those of Natal. Although Natal is not the oldest province the methods and procedures which it uses will be described first to facilitate constant reference to the situation in this province.

A summary of the findings and conclusions will be found at the end of the section.

1. INTRODUCTORY REMARKS ON THE PRESENT POSITION IN THE REPUBLIC OF SOUTH AFRICA

1. Control of education

South Africa has a highly centralized system of education which dates back, in the case of each province, to its earliest history. Centralization of authority was confirmed by the South Africa Act of 1909 which provided for the union of the four provinces, viz. the Cape of Good Hope, Natal, the Orange Free State and the Transvaal.

It is interesting to note that each of the two main groups, i.e. the Dutch and the British, which have been responsible for transplanting and developing western ideas in South Africa, has a strong attachment to a decentralized system of education. The Netherlands has a strong tradition of tolerance and freedom; so much so that in 1950 Idenburg could write: "The Government is not a Schoolmaster-in-Chief ... The great decentralization which characterizes our educational system is in keeping with this principle of liberty. Our people are averse to any excessive intervention by the central authorities." (p. 8.) Of education in England Alexander (1954) writes: "The most important principle on which the English system of education rests is ...

the distribution of power" (p. 2); in keeping with this principle, the power of the Minister of Education is limited. (ibid.)

This policy of non-intervention by the Central Government could not be successfully transplanted into the new territories. Only the large cities had a sufficient number of pupils to permit separate schools for post-primary education, while the rural communities, which could barely afford to maintain one-teacher primary schools, had to be consolidated into bigger units and the administrative system had to be more centralized. (Hurwitz, 1952.) This population distribution which has tended to persist, i.e. concentration of the population in the relatively few large cities, continues to play an important part in education in South Africa, and complicates the provision of adequately differentiated courses.

The South Africa Act of 1909 which provided for the union of the provinces stated that the responsibility for education, other than higher education, was entrusted to the provinces for a period of five years, and thereafter until Parliament otherwise provided. (van Wyk report, 1955.) For financial reasons, however, it was not possible for the provinces to provide adequate facilities for vocational education, particularly in the rural areas with their scattered populations, so that control of vocational education was taken over by the Central Government in 1925. (de Villiers report, 1948.)

Vocational education which is defined as: "instruction and training in commerce, agriculture, housecraft or any trade or industry" in Section 20 of Act No. 29 of 1928, (ibid. p. 1) is administered by the Department of Education, Arts and Science. This dichotomy is not present in the Central African Federation, Norway, Sweden, Holland, England or Scotland. In fact, so strenuous is Scottish resistance to any kind of division which could result in a tripartite system that it has tended, on the whole, to discourage technical education at the secondary stage. (Knox, 1953.)

ii. Provincial education

Each of the provinces has recognized that secondary education starts in Standard VI (average age 13+ years), although Natal does not transfer pupils to Standard VI on age. There is, however, a clear line of demarcation between primary and secondary schools. The reorganization necessary, particularly in regard to the accommodation in the high (secondary) schools, is still incomplete. (Parkyn, 1961.)

The upward trend of compulsory school-leaving age means that almost all normal children spend from two to three years in a secondary school. While the Orange Free State and the Transvaal transfer their pupils to the secondary school on achievement and age, the age being not later than fourteen, but usually thirteen in the former and thirteen plus in the latter, the Cape Province makes provision that no pupil of sixteen years and older is in the primary school. In Natal there is no age limit in the primary school. (See Tables 2, 3, 4.)

There is a trend towards the provision of a general education with a compulsory core of subjects in the three years up to and including Standard VIII, with Standard VI as an exploratory year. The further two years, making altogether a five-year secondary course, are a continuation of the middle school, with a decrease in the number of compulsory subjects.

In all four provinces secondary education is provided in the secondary school which is regarded as the appropriate place for greater differentiation. Each province has progressed on its own, though somewhat similar, lines in providing for such differentiation; each is handicapped in the same way by the divided control of education which allows not more than two vocational subjects in their curricula; each is limited to providing two different courses which are, broadly, one course which is preparatory to a University career, and one course which is not; none can have a truly comprehensive or a multi-lateral school.

In each province, too, pupils of the two main language groups, viz. Afrikaans and English, are taught in separate schools or in

separate classrooms within one school. This makes even more difficult the provision of a wide variety of courses, particularly in the sparsely populated areas.

iii. Vocational education

Further difficulties in South Africa result from the general attitude of the layman and many teachers to vocational education which is that it is the dumping ground for those who cannot progress in the provincial school (de Villiers report, 1948), that vocational education is for "trades and apprenticeships", that the technical college apprenticeship classes are the same as classes in the technical, commercial, housecraft, and agricultural high schools.¹ These ideas have arisen partly as a result of the origins of vocational schools in 1893 when the so-called "poor schools", in which manual instruction took precedence over cultural subjects, were established in the Cape Province, partly because white-collar jobs have been regarded as being the only worthwhile avenue of employment for white men. These ideas persist because of the prevalent ignorance among teachers in provincial schools and in vocational schools of each other's work, and there is, as a result, complete lack of appreciation of each other's specific objectives and special problems. (ibid.) A further difficulty is added as a result of the misguided, though still too general, belief that those pupils who are intellectually dull must, by the law of compensation, be able to succeed in practical or manual work.

In England the technical high school has not yet achieved parity of esteem with the grammar school. (Moehlman and Roucek, 1952.) (See, also, "England", in this section.)

Primary schools have been and still are usually considered to be feeder schools for the provincial secondary schools. Standard V pupils in the Transvaal transfer automatically to Standard VI in the Departmental secondary schools. Although the principle of

1. The Department of Agriculture administers the Agricultural Colleges and the Department of Mines subsidizes the School of Mines. (de Villiers report, 1948.)

having Standard VI attached to secondary schools in Natal has been accepted, it has not yet been fully implemented. It was only from the beginning of 1963 that a Standard VI class was provided at the Technical High School in Durban.² Prior to 1963, however, a pupil might have had to transfer from Standard V in the primary school to a Departmental secondary school for his Standard VI year, and then to move again at the beginning of the following year to the Technical High School for Standard VII. A further difficulty in Natal is that the number of places in technical high schools does not meet the demand. Selection is, therefore, competitive and admission is possible for the brighter boys only.

In 1948 there appeared to be no scientifically conducted vocational service which might provide a wholesome relationship between general and vocational education. (de Villiers report, 1948.) The position has not obviously altered since 1948; this impression is given by the following extract from a reply to my letter in which information was sought on selection methods.

Provincial vocational guidance officers should bring these opportunities to the notice of pupils in provincial schools. Some provincial education departments supply information which can be obtained from handbooks of courses and syllabuses of the Department of Education, Arts and Science, to their vocational guidance officers.

2. Students and pupils coming to technical colleges and ... technical high schools have already made a definite choice as regards the career (vocation) they want to follow. (Letter No. E2 to me from the Secretary for Education, Arts and Science. Examinations, 23/2/1962.)

Many schools of the provincial Departments of Education, too, appear to evince a certain reluctance to "lose" any of their pupils to the technical high schools and colleges; only when the pupils are considered "too dull" for the provincial schools is it suggested that they try technical education.

It is against this background that the methods of streaming and selection in the provinces of the Republic are given in the

2. From 1963 this school has been under the control of the Department of Education, Arts and Science; it is no longer controlled by an independent governing body.

following pages.

2. NATAL

Secondary education in Natal includes Standards VI to X. A policy of streaming pupils in secondary schools was introduced in 1961, with the new courses coming into use in the schools at the beginning of 1962. The two streams in which pupils are placed are:

- i. the Advanced stream (or level) which prepares pupils for university, and
- ii. the Ordinary stream (or level) which is to cater for the weaker pupils.

The main difference between the two levels is that the former covers the same syllabus in greater depth than does the latter, and excludes from certain subjects the less gifted pupils. The object of streaming is to exclude from the academic course those pupils who have shown their inability to succeed in it. (Natal. Education Dept., 1961b.)

Pupils are promoted to Standard VI which may be attached to a secondary or a primary school on the results of the school examination at the end of Standard V.

Selection procedures

Standard VI, the first year of secondary school education, is an exploratory year at the end of which an examination is written. This examination is set by each school for its own pupils, and is usually marked by the class teachers. In 1961, however, the Natal Education Department set papers of the old-type of examination in main language and arithmetic, which were written by all Standard VI pupils and marked by the teachers in the schools according to schedules. It is the intention of the Department of Education to control examinations in two subjects every year, the subjects varying from year to year. (Natal. Education Dept., 1961a.)

On the results of this examination pupils are placed in the "Advanced" or "Ordinary" stream, borderline cases being referred to the Inspector of Schools.

Parents whose child is placed in the "O" stream, may allow their child to repeat Standard VI in the hope that he may pass it on the "A" level should they not wish him to be in the "O" stream. Parents also have the right of appeal to the District Inspector, but "would be well advised to heed the principal's advice, based as it is upon an exact assessment of a pupil's ability as shown in class, in examination and by comparison with his fellow pupils." (Natal. Education Dept., 1961b, p. 50.)

The Director of Education stresses the fact that the scheme has been "evolved solely for the sake of the pupils in order to give them the best possible chances of obtaining the maximum benefit from their schooling and all decisions taken will have only this end in view." (Natal. Education Dept., 1961e, p. 3.)

There is a further finer selection implicit in the instruction in the Schools Handbook (Natal. Education Dept., 1955a, p. 170) that totally unsuitable pupils do not have to be admitted merely because of their prior position in the order of applications. In practice this means that the more popular schools can reject certain pupils. The parents of such pupils have then to apply to other schools until the children are eventually accepted somewhere.

3. THE ORANGE FREE STATE

Secondary education includes Standards VI to X, during which pupils may follow an academic, commercial, technical or agricultural course. At the beginning of Standard VI the highly intelligent pupil chooses an academic course which will lead to a University entrance examination.

For those pupils who are not sure which course they wish to follow, Standard VI provides exploratory experiences in a commercial subject and/or a manual skill. (Orange Free State, Education Dept., 1959b.) In this case the Standard VI year is regarded as a bridge year. Choice of subjects is, however,

largely determined by the available staff which means that the pupil may have to make his final choice of subjects at the beginning of Standard VI. It is, nevertheless, a cherished ideal of the Orange Free State to make provision for its gifted children. (Orange Free State. Education Dept., 1959a.)

Selection procedures

i. Transfer to the secondary school is on achievement and age, usually thirteen, but no pupil is to remain in the primary school beyond the age of fourteen years.

ii. Standard VI is an exploratory or "bridge" year. Standard VI is, therefore, a clearing house from where the pupil, on the grounds of revealed abilities (intellectual, study, physical, etc.), aptitudes, potentialities, etc. is guided or directed into appropriate courses.

iii. The ability and aptitude which the child showed in the primary school has to be ascertained.

iv. Subject choice at the end of Standard VI is largely determined by availability of staff. (Orange Free State. Education Dept., 1958.) Consideration is given to preferences of the pupil and her/his parents and to the cumulative record.

v. The results of intelligence tests are used.

vi. Standardized scholastic tests of the National Bureau of Educational and Social Research are given in Standard VI. (Letter to me dated 10/3/62.)

vii. The Principal who is guided by the preferences of the pupil and her/his parents, the cumulative record of the pupil, and her/his future aspirations in the field of further study and vocational choice usually gives assistance in the selection of subjects. (Letter to me dated 2/8/61.)

Summary

Pupils may follow one of four courses, i.e. academic, commercial, technical or agricultural. Choice of subjects is limited

by availability of staff, and bright pupils select their course at the beginning of Standard VI which is an exploratory year (bridge year) for those who are uncertain in regard to their choice of course.

Unlike Natal, the Orange Free State transfers pupils to the secondary school on age, and provides for subject choice, if made at the beginning of Standard VI, on a broad basis, including the primary school record. The wishes of the pupil and his parents are considered. The final streaming does not rest on the result of one examination.

4. THE CAPE PROVINCE

School attendance is compulsory until a pupil has turned sixteen, so that secondary education is the birthright of every child. (Cape Province. Education Dept., 1955.) This secondary education which is of a general nature is provided in two courses:

i. the Junior secondary course which includes Standards VI, VII, and VIII for pupils aged twelve and a half to fifteen and a half years of age.

ii. the Senior secondary course which includes Standards IX and X.

In the Junior secondary course the Standard VI year, i.e. the first in the secondary school, is exploratory, so that every child will be able, at the end of Standard VI, to select subjects according to his abilities, aptitudes and interests. (ibid.)

In Standards VII and VIII courses are differentiated according to the choice of subjects as well as the scope of the syllabus. This means that, in practice, considerable latitude is allowed in the selection of the subject matter for the teaching of every subject in the curriculum. In the case of the less gifted pupil the instruction may be limited to the basic content of a prescribed syllabus, yet for the brighter child it may be extended. In the syllabus for general science every section has been revised and graded in order to indicate which parts are

basic and which may be included as a further field of study in the subject for either the average pupil or the more gifted pupil. (Cape Province. Education Dept., 1960.)

Further differentiation within the Junior secondary course is being considered by the Department. By this differentiation a course restricted in the number of subjects offered is contemplated for the dull-normal pupils who have difficulty in mastering the requirements of the Junior Certificate examination. (Cape Province. Education Dept., 1961.)

The whole Junior secondary course is to be considered as a means of providing educational opportunities which will meet the special needs of each pupil.

The Senior secondary course includes three main choices:

- a. an academic choice, including Latin (German) and mathematics,
- b. a commercial choice, limited to two full commercial subjects,
- c. a practical choice, including woodwork, needlework and/or domestic science, and/or music and art.

An Agricultural course, i.e. a course with a definite vocational bias, is offered at two ordinary high schools and at three agricultural high schools. The Standard VI course which is offered at these schools is practically the same as that which is offered at ordinary high schools. This provision makes it possible for a pupil to transfer to an ordinary high school at the end of Standard VI. (Cape Province. Education Dept., 1958.)

Transition to the secondary course is at the end of Standard V while choice of subjects takes place at the end of Standard VIII. This means that there are two processes of assessment.

With the introduction of the Junior secondary course in 1953, Standard VI became the first year of the secondary course. There were, however, still some Standard VI pupils in primary schools, so that a uniform examination at the end of the first year of the secondary course, i.e. at the end of Standard VI, appeared necessary. Accordingly, examination papers in the basic subjects, i.e.

Afrikaans, English, general mathematics, general science and social studies were set, printed and sent to the circuit inspectors. These papers were used by secondary and primary schools. (Cape Province. Education Dept., 1955.) Now that all Standard VI classes are attached to secondary schools, this examination is no longer written. (ibid.)

Selection procedures

The following is the procedure of promotion to the Junior secondary course which was followed in 1960.

Promotions which were made in consultation with the inspector of schools in each circuit were based on:

i. The marks from a comprehensive test at the end of the primary school course, together with the marks awarded throughout the year.

ii. Intelligence test results)
 iii. Standardized scholastic test results) if available.

iv. Age (twelve and a half years) and maturity, in spite of inadequate attainment. No pupil is more than one year retarded; no pupil of sixteen years of age may remain in the primary school (Cape Province. Education Dept., 1953), although promotion is not normally on age. (Letter No. L10/25/3 to me dated 11/8/61.)

Principals of primary schools have to keep contact with principals of secondary and high schools to which their pupils have gone and have to inquire about their progress. (Cape Province. Education Dept., 1959.)

The choice of the parents is decisive, although the vast majority of parents accept the guidance and advice of the school.

The capability, interests and aptitude of each pupil are to be discovered during the exploratory year; thereafter pupils select their subjects, the limitation being the range of subjects which the school is able to offer. (Cape Province. Education

Dept., 1958.)

Summary

Differentiation is on the basis of subject choice and scope of the syllabus.

Three courses, broadly, academic, commercial or agricultural and practical or modern are provided from Standard VII.

Consideration is being given to special provision for a course to Standard VIII for the dull-normal pupils.

Pupils are assessed on a broad basis at the end of Standard V and transfer to a secondary course may take place on age. This is not the usual procedure in Natal. In addition, in the Cape Province, principals of primary schools are required to "follow-up" their pupils.

Choice of secondary school courses, as in Natal, takes place at the end of Standard VI which is an exploratory year, but in the Cape Province there are three courses from which pupils may choose. This means that in the Cape Province, in the larger schools, pupils may be grouped according to "type" (see Section C, "Types of children" in this chapter), i.e. the bright may take the academic course, the dull may take the practical course, and the middle group may take the commercial course.

In the Cape Province, too, as in Natal, a syllabus has been provided on more than one level, but in the Cape Province provision is made for three, not only two levels. At present the syllabus has been revised in this way for general science only.

There is not so much a policy of streaming as a provision for a choice of subjects.

5. THE TRANSVAAL

Secondary schools of the Transvaal include Standards VI to X. In the ordinary secondary school pupils are divided into three ability groups, each group being more or less homogeneous with regard to scholastic attainment, mental capacity, general aptitude

and interest. Of these three groups, A, B and C, the

A group follows the matriculation (academic) course,

B group follows the Standard X course which is not a preparation for university, and

C group follows the Standard VIII course.

In each subject three different syllabi have been constructed up to the Standard VIII level, one for each of the three ability groups. The three syllabi for each subject consist of a common core of subject content which is to be mastered by every pupil and a differentiated subject content which aims at providing for the particular educational needs of the different groups and for the individual differences between the various groups of pupils concerned. (Transvaal. Education Dept., 1960.)

The two syllabi for each subject in Standards IX and X concentrate on (i) preparation for admission to university or (ii) preparation for a place in the working community. The two courses differ in respect of object in view, subject combinations, subject content and accentuation and presentation of subject content.

Selection procedures

Promotion is on school achievement, but transfer to the secondary school becomes automatic, irrespective of achievement, at "13+" years. (Groenewald, 1956.)

Standard VI is treated as an exploratory year during which pupils determine the nature of their individual aptitudes and discover in which subjects they will do best at school. This they do by taking a wide range of subjects. Pupils are grouped at the end of the first six months of this year on the basis of their primary school records and intelligence test results, the latter being regarded only as indicators and not final bases of assignment.

Advice with regard to choice of course and/or subjects is given to pupils by the guidance officers of the Department, while the larger schools have at their disposal the services of two guidance teachers for this specific task. The guidance teacher

collects all the available information about the pupil's school record, mental capacity, aptitude, interests, socio-economic background, etc. (Transvaal. Education Dept., 1960.)

The wishes of the parents, although often ascertained after the pupils have been placed in groups (courses), are paramount, although parents are advised to reverse their decisions if these appear to run counter to the advantage of the pupil.

Summary

The Transvaal provides differentiation of two kinds, viz. choice of different subjects and three different levels of subject content. There is, however, a common core of subject matter which is to be mastered by all pupils. The course provided for the lowest ability group does not proceed beyond Standard VIII, although there is such flexibility as will allow of frequent changes of course, so that, provided the subject combination is correct, a pupil is limited only by his own lack of ability.

Pupils are not streamed into a special subject combination because of lack of ability. This differentiation could mean that all pupils could take the same subjects but at different levels. (See Section C of this chapter, "Types of children".)

Selection is on a broad basis, and the wishes of the parents are paramount. Pupils are transferred to the secondary school at "13+" years. Streaming takes place in the middle of Standard VI.

In Natal there is a choice of subjects, although only some may be taken on different levels, there being only two levels of ability for which syllabi have been drawn up. The lower ability group may proceed to Standard X without change of course. If a pupil wishes to change to the advanced course/stream/level he has to repeat a standard.

Both provinces regard Standard VI as an exploratory period, but the Transvaal groups pupils after six months; both provinces have two processes of assessment, i.e. at the end of Standard V and prior to streaming. Natal, however, takes neither the primary school record nor the opinions of primary school headmasters into

account in the procedures for streaming, nor does it regard the parents' wishes as paramount, as does the Transvaal.

6. SCOTLAND

Secondary education is provided by:

i. The Senior secondary course of five to six years for those who will leave school at seventeen or eighteen years of age.

ii. The Junior secondary course of three to four years for those who will leave school at fifteen years of age. An attempt is being made to eliminate the three-year course and to introduce a five-year course into all schools.

iii. The Modified secondary course of three years for those who will leave school at fifteen years of age. (Great Britain. Scottish Education Dept., 1955.) This course is planned to be complete in itself and is provided for pupils of inferior ability. (Unesco, 1955.) It is possible for pupils who have completed a three-year course with credit to transfer to a suitable five-year course. (Great Britain. Scottish Education Dept., 1955.)

In Scotland, however, it has been traditional to assign the ablest pupils in any age-group to a course including two foreign languages and the next in ability to a course with one foreign language, regardless of whether such courses are likely to be in accordance with particular aptitudes, individual interests and future requirements of the pupils concerned. This rather narrow and artificial classification has led to undue rigidity of curriculum and to excessive emphasis on the literary side. (Great Britain. Scottish Education Dept., 1959.)

There is a strenuous resistance to a highly selective scheme of secondary schools on the lines of the English "tripartite" system. (Knox, 1953.) This means that in every school which is of the comprehensive type (Unesco, 1958) there can be three different courses, in each of which the pupil receives a general education and there is provision for choice of academic or literary, commercial, technical, domestic and rural courses. (Unesco, 1955.)

Transfer from primary school to secondary school usually takes place at about the age of twelve, i.e. between eleven and a half and twelve and a half years.

Selection procedures

No pupil is normally retained in a primary department after the age of twelve and a half years. (Unesco, 1958.)

A promotion board has the task of assigning pupils to the secondary course, and although there is no uniform scheme of promotion for the country as a whole, each approved scheme usually includes one or more of the following:

- i. Intelligence tests, at least two of these being given at intervals of six months towards the end of the primary schooling.
- ii. Objective attainment tests in English and arithmetic. Different areas vary in the relative emphasis which they place on the different tests.
- iii. The teachers' estimates of the pupils' ability which are based on class records. (McIntosh, 1959.)
- iv. Parents' wishes and any circumstances which may have had an adverse effect on the pupil's performance in tests. These are taken into account in the final decision of the board. The parents, who must be consulted before allocations are made, may appeal to the Secretary of State and his decision is final. (Great Britain. Scottish Education Dept., 1958.)
- v. A follow-up and comparison of results by heads of primary and secondary schools. (Great Britain. Scottish Education Dept., 1959.)

With Scotland's desire to avoid the tripartite system and the competitive type of selection of England, pupils are allocated to courses and are transferred if the original allocation proves to have been wrong. The allocation is on as broad a basis as possible, and entry to the various types of secondary courses is in no way limited by difficulties of accommodation. (Unesco, 1958.)

In this matter of selection there is a general desire for methods of allocation to be as simple as is consistent with efficient assessment and for transfer between courses to be possible wherever it is appropriate. There is also the desire for allocation procedures to disturb the pupils as little as possible. (Great Britain. Scottish Education Dept., 1958.)

The aim of selection is the elimination of the poorest pupils who are unfit for advanced secondary work. (Vernon, 1940.)

Summary

Secondary education is provided in three courses:

- i. The Junior secondary course of three to four years.
- ii. The Senior secondary course of five to six years.
- iii. The Modified secondary course of three years. This course is complete in itself.

An attempt is being made to eliminate the course listed as (i) and to introduce a five-year course into all schools.

The tripartite system is not favoured at all, and all three courses can be provided in each school. The pupils receive a general education and there is a choice of five different streams although there has been a tendency to type pupils. This practice is discussed in Section C, "Types of children" in this chapter.

There is no one promotion system for the whole country and pupils are assigned to their courses at the beginning of the secondary course by a promotion board which uses standardized tests of intelligence, English and arithmetic, as well as primary school records. There has to be close contact and co-operation between the heads of primary and secondary schools.

Parents have the right of appeal to the Secretary of State whose decision is final.

Reversal of allocations is possible and no pupils are normally retained in the primary department after they have turned twelve and a half years of age.

Scotland aims at the elimination of the poorest pupils who are unfit for advanced secondary school work. This aim coincides with that of the differentiation policy of Natal which is the separation of the less gifted pupils from the rest, with the differences that while in Scotland there are three courses and five streams, in Natal there are only two different levels or streams; that pupils in Scotland are not required to repeat a year if they wish to transfer to another stream, and pupils in Natal are not transferred to the secondary school on age.

7. ENGLAND

The Education Act of 1944 which aims at providing equality of educational opportunity in accordance with the age, ability and aptitude of each pupil forms the basis of the present system of streaming which is found in English schools. (Wells and Taylor, 1947.) So great is the diversity which English education has always shown in secondary education that it is extremely difficult to give a picture which is reasonably inclusive. The three main types of school, each of which caters for a different "stream" of pupils are:

1. The grammar school

This is the traditional academic school which was designed for the more gifted pupils who would ultimately attend university. It was originally regarded as a "schola particularis" of the university. (Spens report, 1938.) It provides in general, though not for every child, the best training for professions which involve work with tongue and pen. (ibid.)

The stream of pupils is selected at the age of eleven plus years by means of certain criteria which are discussed later in this section under the heading "Selection procedures".

The grammar school stream follows a five-year course which offers modern and classical languages, mathematics, general science, history, geography, religious knowledge, art, music, physical training and handwork. It is for the grammar school that the English secondary school selection examination endeavours to select the best 15% or so of pupils. (Vernon, 1940.)

ii. The technical high school

This type of school attempts to provide a sufficiently good general education with a certain amount of practical training so that young people will be able to take their place more easily in industry, including commerce or agriculture, although they will not be completely trained.

The pupils of these schools are specially chosen pupils of intellectual ability (Spens report, 1938) who may attend such a school after the eleven plus examination, or they may transfer at thirteen years of age from one of the other types of schools. (ibid.) This type of school caters for about 10% of pupils. (Alexander, 1954.)

The Spens Report suggested that the technical high school should be alternative to the grammar school. In this way some technologists would enter industry from the grammar school by way of the University, while an increasing number would enter it from the secondary technical school, also by way of the University. (Dobinson, 1954.)

There are still 4% of the local education authorities who do not provide technical schools (Crowther report, 1959) and as long as secondary technical schools are so far behind there can be no parity of esteem. (Dobinson, 1954.)

The subjects which are offered are: English, physical training, social studies, natural science and technical subjects.

iii. The secondary modern school

A general education with a practical bias, closely related to the interests and environment of these pupils in this type of school (Sasnett, 1952), provides for 70% - 75% of pupils. (Alexander, 1954.) The subjects which are offered are: English, history, geography, religious knowledge, mathematics, general science (often biology for girls), music, art, light crafts, useful crafts, i.e. woodwork and metal work for boys, housecraft and needlework for girls, and games. (Loukes, 1956.) The distinguishing characteristics of this kind of school will be found in the level of difficulty of the work. (Pinsent, 1944.)

Although this system with schools of three types has frequently been referred to as the "tripartite" system, the Crowther Report (1959, pp. 21, 22) states:

34. We have, then, good examples of modern, grammar and technical schools; but we do not now have, and never have had, a tripartite system. Individual technical schools have been developed to a pitch where they can stand comparison with any other schools, but technical schools as a group are slightly less numerous today than they were in 1947. To justify us in talking of a tripartite system, we should need as many technical schools as grammar schools. In fact we have four grammar schools to every technical school and six grammar school pupils to every technical school pupil. Over 40 per cent of the local education authorities do not provide technical schools. Instead of a tripartite system we have (if we may generalise about England as a whole) a two-sided system, based on the assumption, where maintained schools are concerned, that all boys and girls alike go to undifferentiated primary schools, and that from the age of 11 onwards all go to a modern school unless they can show cause to the contrary and there is a place for them in a school giving a different kind of education. The secondary modern school is the school for the great majority of the population from the age of 11.

In addition to the three main types of school already described there are some advocates of grouping the "streams" by means of:

iv. Multi-lateral schools

In these schools provision is made on the same site for instruction and training in the three separate types of schools, i.e. grammar, technical and modern.

v. Bilateral schools

In these schools two types of education are given in one school. (Wells and Taylor, 1947.)

vi. Comprehensive schools

In these schools all the secondary students of a district are brought together. (National Union of Teachers, 1958b.) Barriers between the types of education within the school are removed and secondary education is seen as a unit within which there is great variety in approach, methods and content of curriculum to suit the varying abilities and ages of the pupils. (ibid.) A more

detailed description of this type of school will be found under the heading "The comprehensive school" in Section C of this chapter.

The kind of secondary education which a child is given depends upon an assessment of his ability as it is shown in the primary school, often coupled with objective tests taken at about the age of eleven. Each education authority acts independently in the matter of selection procedure. (Wells and Taylor, 1947.) A grammar school education has continued to be eagerly sought so that selection in many areas is highly competitive.

The most gifted pupils, or at least those picked out as such by the various systems of selection, are admitted to the limited number of places in grammar schools, those who are rejected choose the technical high schools as "second best", i.e. the pupils of these schools are specially chosen pupils of intellectual ability (Sannett, 1952) and the rest have no alternative to entry into a secondary modern school. This selection, of course, will not be necessary when the pupils go from primary schools to a comprehensive school which plans for the whole education at the secondary stage. (ibid.)

It is possible, in theory, for a pupil to transfer from one type of school to another although in practice this is done infrequently and only with difficulty.

Under the system of separate schools for separate courses, then, the pupils appear to be typed according to their ability measured at "11+" years by various means, i.e. the bright are regarded as grammar school types, the average are regarded as technical school types and the dull are regarded as secondary modern school types.

All education over the age of eleven plus in schools within the public system of education is regarded as secondary (Dobinson, 1959), i.e. a senior pupil is one who has attained the age of twelve years but not nineteen years. (Wells and Taylor, 1947.)

There has been enthusiastic experimentation in many quarters in the development of comprehensive schools. One gains the

impression that those who teach in such schools are convinced of their success; the separate system of schools, nevertheless, appears to be the one still most frequently found. (Alexander, 1954.) Changes are, however, taking place all over the country; these changes profoundly modify the previous pattern of education, or replace old systems by a different form of organization. (Crowther report, 1959.)

Selection procedures

Each local authority decides how the selection at eleven plus will be made for its schools. (Wells and Taylor, 1947.) The kind of secondary education which a child is given depends upon the results of selection. In this selection some of the following techniques, methods or procedures are used in various combinations:

- i. An assessment of the pupil's ability as shown in the primary school. (Sasnett, 1952.)
- ii. Objective tests:
 - a. A standardized verbal intelligence test.
 - b. A standardized non-verbal intelligence test.
 - c. A standardized test of attainment in English.
 - d. A standardized test of attainment in arithmetic; of this approximately half involves mechanical processes and the remainder consists of problems.
 - e. A standardized test of spatial ability, involving two-dimensional relationships.
 - f. A standardized test of spatial ability, involving for the most part items relating to three-dimensional shapes.
 - g. A standardized test of attainment in English, allowing for a greater measure of creative response from the pupil than the more rigorously objective and mechanical type of English test permits. (Yates and Pidgeon, 1957.)
- iii. Essay-type of examinations.
- iv. Old-type examinations.
- v. Primary school marks.
- vi. Teachers' estimates.

- vii. Primary heads' estimates.
- viii. Scaled teachers' estimates.
- ix. Mechanical tests.
- x. Tests of interests.
- xi. Measures of personality.
- xii. Interviews.
- xiii. Oral examinations.
- xiv. Group observational techniques.
- xv. Wishes of the parents.
- xvi. Panel procedures. (Vernon, 1957a.)

These selection procedures are described and discussed in Part I, Chapter III.

The following percentages indicate the number of local authorities which used standardized or unstandardized tests in 1956:

<u>Tests</u>	<u>Percentages</u>
Standardized intelligence tests.	88.4
Standardized arithmetic tests.	73.6
Standardized English tests.	72.1
Unstandardized papers in arithmetic, English or intelligence.	41.1
Standard battery: arithmetic, English and intelligence only.	55.0
Combination of standardized and unstandardized tests.	30.2
Unstandardized tests only.	10.9

These methods were used in selecting pupils to grammar schools. (Yates and Pidgeon, 1957, p. 28.)

Where the aim is the selection of the best 15% of pupils for the grammar schools, as it is in England, it is obvious that there is a premium on intelligence and ability as these are measured by standardized objective tests of intelligence and scholastic aptitude.

The local education authorities of those areas which have a system of separate schools are, however, keenly aware of the implications of non-selection to their pupils and are continually in search of more reliable, more accurate and more just means of selection. This would account for the large number of methods, techniques and procedures which are used in selection of pupils for secondary schools in England.

Summary

Each local authority is responsible for all primary and secondary education within its area. Three different streams, viz. academic, technical and practical, are provided in (i) separate schools, i.e. grammar, technical high and secondary modern, (ii) comprehensive schools which have been introduced on an experimental basis and (iii) multi-lateral and bilateral schools.

Where the streams are in separate schools subsequent transfer from one stream to another is not easy.

Selection takes place at the age of eleven plus years and is highly competitive because of the limited number of places in grammar schools.

Selection procedures vary from local education authority to local education authority, but there are only 10% of these which, like Natal, rely on unstandardized tests.

In Natal there are neither comprehensive schools nor separate schools such as are found in a tripartite system, but an attempt is being made to provide for two different streams in a type of bilateral school.

B. THE CENTRAL AFRICAN FEDERATION

The secondary schools for pupils of twelve plus years of age are multi-lateral, although some of the larger ones are on the way to being comprehensive. There are, therefore, several types of courses in the same secondary school. These courses are the following:

i. A grammar school course of four years (sometimes six) is provided for the first stream, i.e. for the best or fastest pupils with intelligence quotients of 110 and above and who are in the first quartile. In the two additional years, i.e. lower and upper sixth forms, there is further classification and streaming which involves specialized education on either the science and mathematics side or on the arts and languages side. (Central African Federation. Ministry of Education, 1960; 1961.)

ii. A grammar school course of five years is provided for the second stream, i.e. those pupils who have intelligence quotients of 100 to 110 and are within the second quartile. This course does not include Latin. After its successful completion pupils proceed to the lower sixth form. Pupils in this quartile may elect to follow course iii.

iii. A course of five years provides for instruction in practical subjects, i.e. technical, commercial or domestic subjects as well as in the basic "bookish" subjects. Pupils in this course are those with intelligence quotients within the 90-100 range and the third quartile.

iv. A course of five years provides a basic curriculum, i.e. English, arithmetic, everyday science, "non-bookish" geography and history, woodwork and other practical subjects, for the slowest pupils. (ibid.) These pupils in the fourth quartile have intelligence quotients ranging from 50 to 90. Those with intelligence quotients below 70 are in special classes or schools.

Such a classification is convenient but arbitrary and there is a certain amount of overlapping; grading which is periodically reviewed is only regarded as final at the end of the second year.

The aim of the Central African Federation is to provide education of a general nature in these four streams as well as in the two technical high schools, one in Salisbury and one in Bulawayo. Although the bias in these two schools is technical, their purpose is not the training of a boy for a particular occupation, while neither Latin nor commercial subjects are included in their curriculum.

Two of the difficulties in the Federation are that secondary education for a widely scattered population involves the expensive procedure of providing boarding facilities in school hostels, and that the number of places in the technical high schools is limited. (Ferrer, 1962.)

The policy of the Federation is secondary education for all, with no selection. This means that those pupils who have turned twelve but have not passed Standard V, the last class in the primary school, have, as far as is possible, to be taken on from where they left off in the primary school. (Central African Federation. Ministry of Education, 1960.) This is especially so in the basic subjects of reading, language and arithmetic.

Allocation procedures

In the allocation of pupils to their courses the following are taken into account:

- i. In the choice of a secondary course the parents' wishes are the deciding factor.
- ii. Transfer takes place on achievement and on age, no pupil of twelve plus years remaining in the primary school.
- iii. Internal testing takes place early in the Form I year, i.e. during the first year of the secondary school course; the tests which are used are the standardized group tests of intelligence.
- iv. Standardized tests in English and arithmetic are used.
- v. The primary school record is taken into account.
- vi. The pupil's wishes are given consideration.
- vii. Entrance to the two technical high schools is on the results of the same examinations, i.e. those listed under iii and iv. This is usually the case in England, too. (Vernon, 1957a.)

It is intended that these technical high schools should admit only boys whose intelligence quotient is 110 or above. (Ayerst, 1961.)

Form I which is the first year in the secondary school is regarded largely as an observational year during which all pupils may be following the same curriculum but at different rates, so that they have the opportunity of revealing their ability. An attempt is made to ensure that a pupil is correctly placed and that he has the opportunity of following any course for which he shows aptitude. (Ferrer, 1962.)

Summary

Secondary education is provided for pupils from the age of twelve plus years; this provision is made in four different courses which are found in multi-lateral or in comprehensive schools. Pupils are grouped broadly as follows:

i. Those in the first quartile with intelligence quotients of 110+ follow a grammar school course of four to six years with a further differentiation for brighter pupils who take Latin. There is classification again in the last two years.

ii. Those in the second quartile with intelligence quotients of 100-110 follow a course of five years in which no pupils take Latin. Transfer to a six-year course in the lower sixth form is possible.

iii. Those in the third quartile with intelligence quotients of 90-100 may be allocated to a more general course of five years which provides instruction in technical, commercial, domestic and the basic "bookish" subjects.

iv. Pupils in the fourth quartile with intelligence quotients of 50-90 are placed in a stream which follows a basic course for five years. Those with intelligence quotients below 70 are separated.

The aim of these courses is the provision of a general education, as it is in the two technical high schools. These two schools, however, have a technical bias, although they do not attempt to train a boy for a particular occupation. The number of places in these schools is limited.

Transfer to the secondary school takes place at twelve plus years of age and the pupils continue from the stage which they

had reached in the primary school, especially in the basic subjects.

Pupils are allocated to courses on a broad basis and parents' wishes are paramount. Standard VI is regarded as an "observational" year. The technical high schools are included in the allocation programme, but as the number of places is limited, entrance is competitive.

Pupils are placed in four ability groups, with the brightest in the academic stream and the dull-normal in the practical stream, on the tradition of "types" of pupils.

In the past it has been the practice to classify pupils according to three types of secondary education, namely, academic, technical and general (modern). However, it is doubtful whether children can be so definitely classified. ... (It is sounder) to classify pupils in terms of innate ability and then within such groups to organize courses according to the pupils' interests and needs. (Central African Federation. Ministry of Education, 1961, p. 34.)

In Natal, pupils with intelligence quotients of 84 and below are placed in special schools or classes. The lowest stream in the Federation provides for a wider range of intellect than does the "O" stream of Natal, which is for the less gifted pupils, but excludes those with intelligence quotients of 84 and below. With pupils who have intelligence quotients of 110 and above the first stream of the Federation will provide for a smaller, brighter group than will the A stream in Natal. Neither, however, makes special provision for the group with intelligence quotients of 120 and higher, i.e. the gifted pupils. This point is further considered in Section C of this chapter under the heading "Human resources".

Pupils are allocated to courses, and although marks are used, other factors are taken into account. Parents' wishes are the deciding factor. In both these aspects the selection procedure in the Federation differs from that of Natal.

9. THE NETHERLANDS

The ordinary primary school has six grades. When children reach the age of twelve they must usually choose another school,

and 35% of girls transfer to a home economics school, 35% of the children go to ULO schools and 15% go to the preparatory university and secondary school. After the seventh year in the primary school, 40% of boys transfer to vocational training schools or to elementary agricultural or horticultural schools. A group remains for an eighth year in the primary school or transfers to two-year VGLO school classes.

The system of secondary education of the Netherlands may be divided as follows:

i. Continued primary education

This education which follows a six-year primary education is given in two separate kinds of school:

- a. A school for continued ordinary primary education. This is the "School voor Voortgezet Gewoon Lager Onderwijs" or "VGLO" which provides tuition for two years and is specially intended for children who will not receive a secondary education but who have not yet complied with the provisions of the Compulsory Education Law. (Sasnett, 1952.)
- b. A school for advanced ordinary primary education. The duration of this course, "Uitgebreed Lager Onderwijs" or "ULO", is three or four years and to it about one-third of the pupils from the six-year primary education course are admitted. (Idenburg, 1950.) It includes at the same time three of the following subjects: French, German, English, mathematics and commercial training. (ibid.)

ii. Various types of secondary education

- a. The gymnasium (grammar school). This type of school which offers an academic course of six years' duration prepares pupils for the university. After these pupils have passed their final examinations they are entitled to take the university entrance examinations. In their fifth year pupils are divided into Section A with emphasis on Greek and Latin, and Section B pupils, with emphasis on the exact sciences. These differences provide for entry to either the faculties of theology or literature and philosophy or the faculties of medicine or mathematics and physics. (Unesco, 1955; 1961.)
- b. The hogere burgerschool (modern secondary school). This school offers a five- or six-year course. After the third year pupils choose between the more mathematical and physical science (B) side and that

devoted to modern languages and science (A). The diploma for the first section (H.B.S-B) provides entry to the faculties of medicine, mathematics and physics, veterinary science, engineering, agriculture and certain other fields. Both A and B diplomas entitle their holders to sit for examinations in the faculties of law, economics, political and social science, and in several other fields, i.e. social science, social geography, psychology and education.

- c. The lyceum. This type of school which is usually a combination of a gymnasium and a "hogere burgerschool", and resembles a comprehensive school, was originally established with a view to deferment of the choice between the gymnasium and the "hogere burgerschool". After one or two years of joint tuition, there are three or four years of the "HBS" or four years of the gymnasium. The final examinations are the same as those which have already been described and offer the same rights. (Idenburg, 1950; Transvaal. Education Dept., 1959; Unesco, 1955.)
- d. The modern secondary school for girls. Many of the subjects which are included in the ordinary "HBS" are also included in this school. In addition subjects for girls are specially taught in a course which usually comprises five years of study. (ibid.)
- e. Commercial schools. These are day and evening schools which provide courses of from one to five years. The diploma does not give a right to take academic examinations. The course includes languages, commercial subjects, mathematics, physics, chemistry, drawing, gymnastics and music.
- f. Vocational schools. There are many different types of these schools which provide technical or vocational education, e.g. technical day schools, agricultural and horticultural schools, home economics for girls, and advanced elementary technical day schools.

The Education Act of 1958 "Regeling van het Voortgezet Onderwijs" attempts to place all secondary education under one authority and to meet the needs of individual pupils by providing choice of schools and courses with easy transfer between schools and from course to course. There is to be a common curriculum for all schools for the first year which is to be a bridge year during which teachers will help pupils to decide on their courses. The subjects which are to be studied are: Netherlands, French, English, history, geography, biology, mathematics, drawing, music, manual training and physical education. (Idenburg, 1960; Transvaal. Education Dept., 1959.)

The Netherlands has been faced with a problem similar to that of England in that secondary education has been provided in separate schools. Educational reform is aimed at the surmounting of this difficulty which necessitates competitive selection and often results in wastage of pupil potential.

The reconstruction of the educational system has meant a re-examination of the methods of selection, but the following are those which have, until recently, been used, or are still being used in various ways and in various combinations. (Stellwag, 1955.) They are discussed in detail in the next chapter, i.e. Chapter III.

Selection procedures

i. The entrance examination, dating back to 1813, is the oldest method of selection and has undergone numerous changes. The subjects which have remained to form the examination are Netherlands, reading and writing, geography and history. There are differences in the examinations for the gymnasium and the hogere burgerschool. (Stellwag, 1955.)

ii. A preparation class (voorbereidendeklas) which is attached to a secondary school prepares the pupil for secondary education and the entrance examination. In one school the entrance examination is written before the pupil enters the preparation class!

iii. A statement by the head of the primary school may be used.

iv. Probationary classes or "proefklasse", i.e. short, special courses which provide opportunity for experimentation, observation and assessment of individual abilities and needs are used for pupils who are borderline cases.

v. A psychological examination, which may include an intelligence test as well as assessment of the initiative, speed, perseverance and interest of the pupil and his reaction to a new environment, is sometimes used in selection.

vi. A bridge year which, as its name implies, facilitates transfer from the primary to the secondary course is another of

the selection procedures. During this year all the post-primary schools concerned provide the same curriculum for those pupils who have passed the sixth grade. Transition to secondary education is not automatic. (Transvaal. Education Dept., 1959.)

With the multiplicity of kinds of schools for secondary education, much thought and research has been given to the various methods of selection. In the present stage of reconstruction the Minister of Education, Arts and Science appears to favour those methods which do not stress marks but require an intimate knowledge of the individual, as well as the use of more than one means of assessment. (Idenburg, 1960.)

Summary

The Netherlands is engaged on reconstruction of its education system. At the present time secondary education is provided in:

- i. Continued primary education:
 - a. The "VGLO" school in which tuition is provided for two years.
 - b. The "ULO" school in which tuition is provided for three to four years.
- ii. Secondary education is provided in schools of different kinds:
 - a. The gymnasium provides a six years' course.
 - b. The hogere burgerschool course covers five years.
 - c. The lyceum is a combination of a. and b., thus resembling a comprehensive school.
 - d. The modern secondary school for girls provides a five-year course.
 - e. The commercial school provides courses of one to five years.
 - f. Vocational schools are of different kinds.

As part of the programme of reconstruction there is to be a common curriculum for all schools for the first year. This will facilitate transfer between schools and from course to course.

With so many different kinds of schools selection has long been one of the most pressing problems of education in the Nether-

lands and various techniques and procedures have been tried. In many schools the first year of the secondary course is an exploratory or a bridge year, as it is in Natal; and, also as in Natal, age is not a factor which determines transfer to the secondary school, although pupils are usually in the secondary school by the time they are twelve.

Unlike Natal, the Netherlands favours the use of more than one criterion for selection and these criteria consist of techniques and methods which do not emphasize marks. The Netherlands also aims at a common curriculum for all schools during the first year of the secondary course.

10. NORWAY

Secondary schools are for pupils of fourteen years of age who have completed a seven years' course in the primary school system.

For the time being there are three main types of school:

- i. The continuation school (framhaldsskole).
- ii. The folk high school (folkehøgskole).
- iii. Høgere almenkoler:
 - a. the realskole
 - b. the gymnasium

In the vocational field there is a wide range of educational facilities.

1. Continuation schools

These schools provide an eighth year of school work, i.e. after completion of the primary school, which aims to promote general education, growth of character in the pupils and to prepare them for life. The courses may vary in length from three months to three years.

Two types of continuation school may be established:

- a. One which is chiefly theoretical and which emphasizes Norse, citizenship, health education, mathematics, bookkeeping, English, gymnastics, and includes practical courses such as art, woodwork, metal work, needlework, housecraft and cookery.

- b. One which is chiefly practical and which includes the same subjects but emphasizes the practical subjects. This type of school is for those who do not enter secondary or trade schools. (Letter to me from the Ministry of Education, Oslo, 5/8/61; Unesco, 1961.)

In Oslo about 65% of pupils enter a. and 35% b. mentioned in the previous paragraph. Those pupils who do not seem able to benefit from the teaching of the theoretical branch may be rejected after half a year.

Pupils enter these respective schools on the results of a final examination at the end of the primary school course in written Norse, English and arithmetic, but "the present system of selection is under consideration". (Letter to me from the Ministry of Education, Oslo, 5/8/61.)

ii. Folk high schools

The purpose of these schools is to give young people advanced general education. Pupils are normally seventeen years of age. The subjects taught are mainly the same as in the continuation schools but on a higher level for the more mature students. More emphasis is placed on the theoretical side.

The ordinary course lasts for about six months, from October to April. It can be followed by a second course for six months in the following year.

iii. Høgere almenkoler

- a. The realskole. A realskole is either a separate institution, as is usually the case in rural areas, or is combined with a gymnasium, which is usually the case in the towns. The general aims of both the realskole and the gymnasium are to contribute to the pupils' Christian and moral upbringing and to seek to develop them both mentally and physically.

This school provides a general education of from two to four years' duration, the three-year course being the most common. It provides training which forms the basis for further specialized training and for employment in various public bodies and in private concerns.

The realskole provides a three-year general education whereas the gymnasium provides a general

education plus specialization in various fields. The examination, the realskoleexamen, is usually taken when the pupils are seventeen years of age. The curricula of the gymnasium and the realskole are the same for the first two years, so that transfers are possible. (Schueler, 1952.)

- b. The gymnasium. The course in this school is of four, five or six years' duration and after two years there is a choice of different streams; a pupil may choose a (i) mathematics and science or (ii) modern languages or (iii) classical languages (with or without Greek) or (iv) natural sciences or (v) Norse stream.

The curriculum for the mathematics and science stream and for the modern languages stream includes religious instruction, Norwegian, English, French, history, geography, biology, physical science, physics, mathematics, physical education and singing. More time is devoted in the first mentioned stream to mathematics and physics and in the second stream to languages.

The examination, examen artium, at the end of this course, when the pupils are nineteen to twenty years of age, is an entrance to university and to other institutions of higher education.

Admission to the five-year gymnasium normally takes place on the basis of the elementary school leaving certificate. More than half the graduates of the elementary schools attend either the realskole or the gymnasium.

iv. Vocational field.

Among the vocational and technical schools are:

- a. The secondary commercial school. The pupil must have completed the first two years at either the realskole or the gymnasium before he is admitted to this kind of school although another type of commercial school can be attended on the completion of the elementary school course.
- b. The workshop school. This type of school is in some respects similar to the trade school, but follows the primary school course, and was started with the object of providing practical training in commerce and industry for pupils from fifteen to eighteen years of age. The workshop school is exploratory and one of its aims is to discover the particular aptitude or ability of pupils.

The school provides one year of schooling and follows the curriculum of the continuation course.

Whereas, however, the latter emphasizes general education, the former stresses pre-vocational schooling.

The 1954 "Act of Experiments in Schools" promotes experiments in all categories of schools; it is intended to reform the educational system gradually and to adapt it to the development of a modern society. (Unesco, 1955; 1958.) One of the most important of these experiments, i.e. since 1955, is the comprehensive school which aims at combining the continuation school and the modern school (realskole). Sandven (1959) is of the opinion that the comprehensive school implies so great a possibility that there should be systematic and controlled experiments to show what this type of school may mean for the growth, in its broadest sense, of the students.

A striking feature of the Norwegian school system is the fact that there is elementary schooling common to all pupils up to the age of fourteen. Although in the towns the brighter pupils in the sixth grade may take a foreign language (English) so that there is some differentiation and grouping according to ability, it is only at the age of fourteen that there is a real break in the school system. (Sandven, 1947.) Differentiation, then, is delayed until as late as the pupil's fifteenth year, i.e. when he is fourteen and a half years of age, and there is no narrow specialization until the pupil has reached the age of sixteen years, i.e. in the workshop school.

There is still the selection of able pupils for academic work in that bright pupils at about the age of thirteen years take English, but the chief aim of democratic education is the creation of free, spontaneous and independent people because it is only such people who are able to co-operate truly. (ibid.) It would seem, then, that the aim of Norwegian education is the creation of harmonious personalities in a comprehensive kind of school.

Selection procedures

The selection procedure which is being revised includes:

i. The interests of parents and pupils, and their choice.
This is made on the advice of teachers and counsellors in the light of the pupils' performance.

ii. Records of performance.

iii. Examinations in written Norse, English and arithmetic at the end of the sixth or seventh year of schooling, i.e. between the ages of thirteen and a half and fourteen and a half years.

iv. Intelligence tests.

v. Scholastic tests in Norse and arithmetic.

The whole selection procedure is being revised. (Letters to me dated 22/1/61 and 5/8/61 from the Ministry of Education, Oslo.)

In the selection of pupils for schools in Norway one gains the impression that the main aim is to allocate pupils to the education for which they are best suited and this is more so in the case of pupils who enter the comprehensive type of school. The urgency and keen competition which one senses in literature on selection in England is not found in connection with Norwegian education.

Summary

Secondary schools receive pupils of fourteen years of age and provide courses in the following schools:

- i. The continuation school provides two courses:
 - a. one chiefly theoretical and
 - b. one chiefly practical.
- ii. The folk high school provides courses of six months for pupils who are usually seventeen years of age.
- iii. The høgere almenksoler provides courses in:
 - a. the realskole of two to four years' duration;
 - b. the gymnasium which has courses lasting for four, five or six years.
 - c. Sometimes the courses of a. and b. are combined to form a kind of comprehensive school.

- iv. The vocational schools include:
- a. the secondary commercial school and
 - b. the workshop school.

The curricula of the gymnasium and the realskole are the same for the first two years so that transfers are possible.

Trial of the comprehensive school is favoured in the reform of education in Norway. The system of selection is under consideration, but at present pupils enter these schools on the results of a final examination in written Norse, English, and arithmetic which is taken at the end of the seven years' primary course. In addition the wishes of the parents and pupils are considered and standardized tests of intelligence, Norse and arithmetic are used.

Unlike in Natal, many different courses are provided in separate schools; transfer from the realskole to the gymnasium is made easy because there is a common curriculum followed by these two schools for the first two years. Norway, too, allocates pupils to courses on more than one basis; age is a factor which is considered in transfer and the final examination at the end of the primary school period is in three subjects only. As is the case in Natal, marks in a language other than the home language of the pupil form one of the bases of selection.

11. SWEDEN

A nine years' compulsory education course which unifies the period of primary and junior secondary schooling was decided in principle in 1950. (A letter to me dated 25/7/61 from the National Swedish Board of Education.) A comprehensive type of school (enhetsskolan), compulsory from 1962/1963, will be completely established by the beginning of the seventies (Rosen, 1959) and should be able to receive all pupils. (ibid.)

No pupil is normally retained in the primary department after the age of twelve and a half years. Pupils are to be admitted at the age of seven to the "Enhetsskolan". In the seventh and eighth grades, i.e. fourteenth and fifteenth years, elective subjects, grouped into four core courses, are offered:

- i. A practical course,
- ii. a practical course combined with Swedish,
- iii. a practical course combined with English, and
- iv. English combined with German.

Despite these electives the comprehensive school remains undifferentiated until the ninth grade, when a more final separation on three different sides takes place. (Husén, 1961.) From the ninth class there are three streams:

- a. Stream 9g (9 grammar). This stream provides an academic course which leads to the gymnasium and the University. The gymnasium provides further differentiation into three streams, viz. Latin, modern and general for three or four years.
- b. Stream 9a (gen.) (9 general). This stream provides a school leaving or general course. Whereas French is compulsory in 9g, in 9a pupils may choose between French and further courses in practical and humanistic subjects. (During, 1951.) Except for this choice the classes in 9g and 9a are, to a considerable extent, the same. More conspicuous than any difference in the subjects studied is the difference in tempo of the work which is partly the result of the different places which the two classes occupy in the school system, and partly the result of the higher quality of the talent in 9g.
- c. Stream 9y (pv) (pre-vocational). This is a preparatory course which leads to a commercial or a technical course. It is a preparation purely for these courses. (Faltheim, 1959.)

The new type of school, i.e. the *Enhetskolan*, has not yet reached its final form. In the experimental schools the pupils have been allowed to go through classes 7 and 8 with a choice of optional subjects and through class 9 with a free choice of stream. The final differentiation is delayed until the pupil is approximately sixteen years of age.

The nine-year comprehensive school, which avoids division in the child's school career, represents an elective school system, i.e. a school system according to which the pupils of the senior stage may, as far as possible, choose among subjects and thus also freely choose their study alternatives and their vocation. This means that there is great stress on educational and vocational

guidance with thorough follow-up studies of the pupils.

Cumulative record cards are used and all relative information regarding school progress, hobbies, interests, home and social backgrounds, physical health etc., is obtained. The guidance teacher has also to come in contact with the pupil's parents and other teachers. Intelligence and other aptitude tests are given. This guidance which is of the non-directive or non-authoritarian type starts at an early stage and continues throughout and after the pupil's school career. (ibid.)

Reconstruction of educational and vocational guidance is being tried out in certain schools of Sweden.

It will be seen that in Sweden there is no selection of pupils (letter to me dated 25/7/61) but that by allocation to certain streams every effort is made to meet the needs of the individual.

Summary

From the years 1962/1963 a nine-year comprehensive school has been compulsory in Sweden.

While from the seventh and eighth grades elective subjects are grouped into four core courses, viz. a practical course, a practical course combined with Swedish, a practical course combined with English and a practical course combined with German, differentiation proper starts in the ninth grade with three streams:

- i. 9g (grammar), an academic course,
- ii. 9a (general), differing from 9g in tempo and ability of pupils, and
- iii. 9y (pre-vocational), a preparation for a commercial or a technical course.

Final differentiation is delayed until the pupil is approximately sixteen years of age.

There is no selection of pupils to various courses. Pupils choose their courses freely; this means that there is great emphasis on educational and vocational guidance, including follow-up studies of the pupils. The guidance offered is of the non-

directive type and starts when the pupil is very young and continues throughout her/his school career.

Differentiation takes place much later in Sweden than it does in Natal. In Sweden there are three streams, with three divisions in one stream, so that there are five streams provided. There appears to be some similarity between the "A" and "O" levels in Natal and the 9g and 9a streams in Sweden, in that they provide for different levels of ability.

Unlike Natal, Sweden relies tremendously on educational and vocational guidance throughout a child's school life; there is no selection; pupils are transferred on age to the secondary department; pupils choose their own courses; and Sweden, too, has introduced the comprehensive type of school. This comprehensive school is different from that in England in that it provides a smooth articulation of the primary and secondary courses and does not cover the secondary course only.

Broad trends in streaming in the educational systems under review are given in tabular form on the following page.

Table 7
Broad Trends in Streaming

Trends	Natal	Orange Free State	Cape	Transvaal	Scotland	England	Central African Federation	Netherlands	Norway	Sweden
Number of years exploratory	1	1	1	½	-	-	2	1	-	-
Types of school	1	1	1	1	1	5	2	8+	7	1
Number of streams or courses	2	3	3	3	3	3	5	8+	6	5
Choice of subjects	P	P	P	P	P	P	P	P	P	P
Differentiated syllabi	Some	-	One	All	-	-	-	-	-	-
Further differentiation	-	-	-	-	-	P	P	P	P	P
Age of differentiation	-	14 at most	13½	13+	12+	11+	12+	-	14+	15+
Age of transfer to secondary course	-	14	16 at most	13+	11½ to 12½	11+	12+	12 as a rule	14	12½ ^t

P. This is provided.

t. i.e. transfer from the primary department.

12. SUMMARY OF SECTION B, CHAPTER II

i. Types of schools. The schools in the provinces of the Republic of South Africa are of a bilateral type, whereas those in Scotland and Sweden are of a multi-lateral or a comprehensive type. The Central African Federation favours a multi-lateral or a comprehensive school while Norway and England are experimenting with comprehensive schools. The Netherlands aims to bring all secondary education under one authority.

ii. Number of streams. All the countries differentiate by provision of different streams and/or courses. In all countries it appears that the courses are provided for three different ability levels; Natal is the only system studied which provides for two levels of ability, excluding special classes and schools for mentally handicapped children. Provision for these children falls outside the scope of this treatise which deals with schools for normal children. In the Orange Free State and, to a certain extent, in the Cape Province, the choice of stream and courses is limited by availability of staff.

iii. Choice of subjects. All countries provide a choice of subjects in the secondary school.

iv. Differentiated syllabi. Only three provinces of the Republic of South Africa make mention of differentiated syllabi, while it is only the Transvaal which provides three levels of syllabi in all subjects. Such differentiation makes possible provision of a general education for every pupil without the classification of pupils according to type, i.e. academic, technical and practical.

v. Further differentiation after the second year of secondary school. This takes place in four countries; in Sweden differentiation proper is delayed until the pupil's sixteenth year.

vi. Age at which differentiation takes place. England has the earliest and Sweden the latest age at which pupils are streamed. In neither Natal nor the Netherlands is there transfer to the secondary course on age although in the Netherlands pupils of twelve years of age are usually in the secondary school. Pupils

in Natal are usually 13.9 years old at the end of Standard VI when the "streaming" examination is written.

vii. First year of secondary education. In three provinces of the Republic of South Africa this year is regarded as an exploratory year, while in the Transvaal the first half of the year only is truly exploratory. In the Central African Federation the first two years are "observational" although pupils are allocated to their courses at the beginning of the first year. The Netherlands will, under the new system, provide for a common curriculum for all pupils in the first year of the secondary course and in Sweden there is no change in the first year of the secondary department which forms part of the nine-year comprehensive school programme. In England, Scotland and Norway the first year of the secondary course is the first year of differentiation. Scotland, nevertheless, as does the Transvaal, makes provision for easy re-allocation to courses or streams.

13. CONCLUSIONS. SECTION B, CHAPTER II

i. Control of education. Divided control of education is to be found only in the Republic of South Africa where the Central Government provides vocational education in separate schools, yet there is no system of selection or allocation nor a common curriculum for the first year whereby the Department of Education, Arts and Science collaborates with the Provincial Departments of Education on the streaming of the children of the Republic. Adequate differentiation is impossible in these circumstances.

ii. Transition from primary to secondary school. Implicit in the provision which some countries have made for a certain period of time to elapse in the secondary school before selection takes place is the recognition of the difficulties attendant on any transition.

iii. Age of pupils at specialization. It is interesting to observe that Sweden, which favours the comprehensive school, is the country in which differentiation is the longest delayed, yet Norway, a country in which differentiation is delayed, too, has separate schools of different kinds. No country has followed

the example of England with its very early specialization. These questions of age and a general or special education are touched on briefly again in the next few paragraphs.

iv. The pupil's needs. Very many selection techniques and procedures emphasize the intellectual side of the pupil, but few countries make mention of the wishes of the pupil, only Sweden leaving the choice to the pupil, and Norway, the Central African Federation and the Orange Free State considering the wishes of the pupil. It seems necessary, therefore, to draw attention to the needs of the individual who is the person most vitally concerned in the process of selection and/or allocation.

v. Guidance. The majority of the educational systems which are under review use one or more of the recognized techniques of educational and vocational guidance in their selection or allocation of pupils to secondary school courses. Sweden, which has the greatest freedom of choice, appears to make most use of effective guidance of the pupils. In Natal there are vocational guidance officers or "Careers Masters" attached to the secondary schools only, so that where the Standard VI pupils are still attached to a primary school they have no assistance from such counsellors.

vi. Types of children. There appears to be a tendency for three types of school or stream (course) to be provided, viz. (a) a stream which prepares pupils for a university career, (b) a stream which may be very similar to, but is less demanding than (a) and is not preparatory to a university course, and (c) a practical or secondary modern course. It appears, too, that the pupils are placed in these streams on the premise that all bright pupils need to follow course (a), that all average pupils need to follow course (b) and that all dull pupils have no choice but to follow (c) as outlined above. This system of placement operates in England, the Cape Province, the Central African Federation, the Netherlands, Norway (only two branches), Scotland and Natal (only two levels).

In Sweden the pupils have a choice and in the Transvaal syllabi are provided on three different levels, so that although

bright pupils follow the preparatory course for university the less bright pupils do not appear, on the face of things, to be debarred from certain subjects. They thus avoid being condemned not to share in the heritage which should be common to all human beings.

Children appear to be regarded, most conveniently, as having one of three kinds of ability which will fit very well into one of the three traditional kinds of schools, viz. academic, technical and practical.

vii. Selection vs. allocation. Where all types of education are provided in one school and there are sufficient places for all pupils, there is no need of selection of pupils to differentiated courses. The question of differentiation is then one which involves the more difficult process of suiting the educational course to the pupil, i.e. one of allocation.

viii. The comprehensive school. Sweden has adopted the comprehensive school; the older countries, viz. England and Norway, are favourably disposed to experiment with this type of school while Scotland is strenuously opposed to a tripartite system.

The newer systems of education have tried to provide different courses within one secondary school, viz. the four provinces of the Republic of South Africa with a bilateral type of school and the Central African Federation which favours a multi-lateral or a type of comprehensive school. In this country, i.e. the Central African Federation, technical high schools are separate but, unlike those in the Republic of South Africa, they are under the same control as are other secondary schools.

ix. Education for girls. No reference has been made in any of the countries which have been studied to technical high schools for girls although there is concern in Scotland at the lack of adequate provision for girls at the post-primary stage.

x. Human resources. Scotland aims to exclude her dull pupils from the academic stream, England attempts to select the best (15%) intellects for her grammar school, while Natal wishes to provide for her less gifted pupils who are estimated to form

40% of the Standard VII school population. Differentiation in secondary education raises the question of the availability of high intellect and provision for the gifted.

xi. Increasing demands on the teacher. If it is assumed that the standardized tests of intelligence and scholastic achievement are given by trained guidance personnel there are, nevertheless, other selection procedures, e.g. teachers' estimates, contact with the secondary school etc., which will demand more of the teacher.

xii. Research. No two countries have approached the provision of secondary education in exactly the same way, each system being faced with its own peculiar problems. (Stellwag, 1955.) In order to understand and solve these problems there is need for research.

Discussion of each of the conclusions reached in this section will be found in Section C. In Section D is a summary of the various methods, procedures and techniques of selection which have been given in the context of their use in each educational system studied in this section, while analysis and criticism of these methods, procedures and techniques is undertaken in Part I, Chapter III.

SECTION C

DISCUSSION OF THE ISSUES INVOLVED IN SELECTION AND STREAMING

In the previous section conclusions were drawn from an analysis of methods of streaming which are used in various educational systems. For convenience of discussion the methods, procedures and techniques of selecting pupils are dealt with in a separate chapter, viz. Chapter III. The questions of streaming and of selecting pupils are very closely related and together raise issues which are not merely of a school organizational nature, involving administrators and planners, nor merely of a technical nature, involving psychometrists and statisticians; they are fundamentally those of child development and the role of the school in its promotion, and thus involve child psychologists and educational psychologists as well as teachers. Here these issues are linked with the discussion of the conclusions which were arrived at in Section B of this chapter and consequent suggestions are offered as part of the solution of the problems of selecting and streaming pupils in Natal schools.

1. CONTROL OF EDUCATION

Difficulty in provision of adequate differentiation is aggravated in Natal by lack of accommodation in technical high schools. With the increasing number of applicants to these high schools of Natal, entrance is restricted to those with better pass marks at the end of Standard V, or in the entrance examination which pupils may be required by technical high schools to write during the year prior to their Standard VI in a technical high school. There is, therefore, competitive selection which could become similar to that in England for grammar school places. An added difficulty is that primary schools are regarded as feeder schools to provincial secondary schools and not to technical high schools which fall under the Central Government.

In the Netherlands where there has been divided control of education the problem of selection has been one of the most prominent

fields of study and research. Reform in the Netherlands now places control of education under one authority. The Netherlands, too, provides a common curriculum for the first year of secondary education in all schools. In England, with its system of separate schools, the need for effective selection procedures and techniques has been most urgent. In neither England nor the Republic of South Africa does vocational education enjoy parity of esteem with other secondary education.

There appears to be a need for bridging this gulf to the benefit of the child. There is no selection or allocation programme which will facilitate transfer of pupils to or from schools of the Department of Education, Arts and Science to or from schools of the Natal Education Department, or to schools of any other Provincial Education Department, for that matter. Pupils have selected their careers before they enter the schools of the Department of Education, Arts and Science. (See Introduction to Section B.)

Summary

- i. Divided control of education prevents adequate differentiation.
- ii. Shortage of places in the technical high schools can make selection competitive.
- iii. Primary schools are feeder schools to the provincial secondary schools.
- iv. Where different kinds, i.e. academic and/or technical, of secondary education are provided in separate schools selection and not allocation is emphasized, and research into the best methods of the former is urgent.
- v. The Netherlands has a common curriculum in all schools for the first year of secondary education.
- vi. Vocational education still does not enjoy equal favour with the other kinds of secondary education.

Conclusions

- i. Co-operation between the Central and Provincial Education Departments is imperative in the interests of the children and the community, the wastage of whose human resources is being disregarded with such prodigality.
- ii. General recognition of the fallacy of the compensation theory in regard to intellectual and manual ability is long overdue.

Suggestions

- i. Divided control of education in the Republic of South Africa should be ended by the placing of all secondary education under the control of the provinces. Centralization of education should not take place for many reasons, one of the most important being that each province knows, understands and can best provide for the special conditions within the province.
- ii. Until there is unity of control there should be a common curriculum for Standard VI pupils in the vocational high schools and the provincial schools of Natal. As long as no provision is made to bridge the gulf between the two systems of education Natal cannot, with justification, be satisfied that it is making the best of its resources, i.e. its children.
- iii. Local authorities should be allowed the utmost freedom to experiment according to their own particular requirements. (Burt, 1947.)

2. TIME OF TRANSITION

1. Organizational factors

With the acceptance of the principle of secondary education for all, the extension of the compulsory period of school attendance, the demand of this nuclear age for more, better educated workers, the realization that abilities can only be measured after experience for their growth and exercise has been provided in a further common curriculum, has come the need for the closing of the gap between primary and secondary education. This involves not only the trans-

fer of pupils from primary to secondary education, but the articulation of the programme of study, so that the terms primary and secondary education will come to be regarded as successive phases of a continuing process in which there is no sharp distinction between these phases. Such a distinction is not only arbitrary but does violence to the real continuity of growth and education. School systems and scholastic methods which break this continuity are coming to be considered imperfect instruments of education. (Parkyn, 1961.)

There is need for the evolution of a type of education completely different from that which is provided in our post-primary schools. (de Villiers report, 1948.)

ii. Personal factors

The pupil of eleven or twelve years of age to fourteen or fifteen years of age is in a phase of transition in both educational and psychological development and any transition demands re-adjustment. To the pre-adolescent, transition from primary to secondary school demands not only physical adjustments to new buildings, often a boarding school, diverse classroom situations, a wider curriculum and different subjects, but also emotional and social adjustments to new class groupings, new teachers, and other more subtle relational problems (Olson, 1960), and there is evidence that the settling-in process is a long one. (Morris, 1955.)

On the threshold of adolescence the pupil's greatest challenge is one of social adjustment, yet he/she is still involved in completing the great task of late childhood, that of self-expression and self-development. This means that he/she is involved in an attempt to reconcile co-operation and independence, another form of transition.

At the transition between childhood and adolescence, this so-called latency period has received scant attention from psychologists, and the pre-adolescent, apparently needing no special care, has almost become of no particular concern to anyone. (Blair and Burton, 1951.) Those Standard VI pupils who are still in the primary

school are sometimes referred to as "bullies" of the smaller children, while in the secondary school there is the complaint that the Standard VI pupils are such "babies" that they have to be told when to rule a line! In addition, it is not easy for anyone, least of all a pre-adolescent, to find that after having been a senior in the junior school he/she is now a very insignificant junior in the senior school!

When Standard VI is treated as an exploratory or a bridge year the problem of grouping pupils at the beginning of Standard VI appears to have been overlooked, yet research has shown that the ability level or group into which a pupil is placed crystallizes the original differences present at the time of grouping. Streaming at the beginning of Standard VII after casual disregard of what happened at the beginning of Standard VI appears to be somewhat futile. (These points are raised again under the heading "Types of children".)

In a report of the Director of Education in the Orange Free State (Orange Free State. Education Dept., 1958) the plea is put forward for the best teacher to be placed in charge of the Standard VI pupils and for effective guidance of these children in the year of transition. Holland and Scotland urge the closest co-operation between the primary and secondary schools and consultation regarding the progress of the Standard VI pupils. Where the education process is regarded as being a continuous one such consultation appears indispensable.

Children need to feel that they belong, and all efforts should be made to satisfy this need when the new Standard VI pupils arrive at the secondary school. If they are to learn to co-operate with those already in the school there should be an effort at integration and an absence of competitive initiation (Montagu, 1957), the latter being a relic of the primitive past!

Some form of transitional community to the secondary schools might be created during the pupils' last term in the primary schools. There might, for example, be reception classes in the secondary schools, or there might be some common function or func-

tions for the top classes in primary schools and the first year classes in secondary schools. (Morris, 1955.)

Liaison between subject teachers, most obviously the teachers of English and mathematics, in secondary and primary schools is necessary. (ibid.) In addition, there is need for a constant process of consultation between staff at every stage so that the school may form an intimate understanding of a child in order to be able to assess, when the child leaves, her/his potentialities and prospects. Without consultation between the child's primary and secondary teachers, all this continuous and comprehensive assessment is lost, an obvious disadvantage to the child and a waste of the teachers' time. (Ford, 1962.)

At the University of Natal the House Committee members, staff and new entrants to the University arrive at the University two days at least, before the other students. This is to make possible the registration, testing and counselling of students. Secondary schools might well adopt this procedure so that the Standard VI pupils, prefects and staff of the school should arrive at school on the day fixed for the opening and other pupils should arrive two days later. There is no suggestion that the holidays be shortened! The policy of "no initiation" should be strongly enforced and the Standard VI pupils should be given all the help possible. (Blair and Burton, 1951.)

Summary

- i. Transition involves organizational and personal issues.
- ii. There is the need to organize education in such a way that there is smooth articulation of the primary stage and the secondary stage.
- iii. The young adolescent faces internal as well as external adjustment.
- iv. Young adolescents appear to be "in-between" and the concern of no one in particular.
- v. There is need for liaison between the pupil's primary and secondary school teachers.

- vi. Grouping at the beginning of Standard VI is often haphazard.
- vii. The Standard VI pupils need the best teachers and most efficient guidance.
- viii. Pupils should be made to feel that they belong in the new school.
- ix. There might be arrangements for some form of transitional community between the primary and secondary school.
- x. There is need for some form of reception to ensure easier integration of pupils into the secondary school.

Conclusions

Close co-operation between the pupil's two schools, i.e. primary and secondary, is highly desirable, and adequate provision should be made for the happy integration of new pupils into the secondary school. Adequate guidance at this stage can prevent untold difficulties later.

Suggestions

- i. Secondary education should be made part of the continuous process of education of which primary education forms the first part.
- ii. Adequate grouping of pupils at the beginning of Standard VI is of primary importance. This question of grouping is referred to in Section A, "Suggestions", of this chapter.
- iii. Consultation and co-operation between heads of the primary and secondary schools, and adequate follow-up studies of the pupils should be part of the normal procedure.
- iv. Transition from primary to secondary school should be made as pleasant and constructive as possible, with a positive approach to this integration on the part of the teachers, parents and pupils already enrolled.

3. GENERAL OR SPECIAL EDUCATION

In developing programmes for post-primary education which will provide for all children up to a compulsory school-leaving age, three factors which must be borne in mind are that the individual needs training as a human being, as a potential citizen and as a worker. (Kandel, 1951.)

Individual needs as a human being were implicit in the original introduction of compulsory education, the aim of which was to protect children from industry. One of the reasons for extending the period of compulsory education by the raising of the school-leaving age is, again, to protect the human being because young persons are unemployable, in the sense that they cannot obtain employment that would be in the interest of their future development. (ibid.) The implication of this is that specialized vocational training cannot be given in full-time schooling, not only because it cannot be anticipated what specific vocation the pupil will follow on leaving school, but because most occupations today demand adaptability, and because a highly specialized skill is a handicap in an employment crisis. (ibid.) In the advancing technology of the modern world the need is for more and more young people with a longer general education (Parkyn, 1961) and in highly industrialized countries the provision of diversified vocational education for pupils from eleven or twelve years of age to fifteen or sixteen years of age is now regarded as premature. (ibid.)

In the provision for the youth as a human being it must be recognized that two of the basic human needs are "to know" and "to understand". (Maslow, 1954.) The individual needs to know and to understand, not only himself, but the world in which he lives, i.e. his civilization and his place in it. (Schmidt, 1962.) His development as a human being, too, will depend on the values, attitudes, customs and practices of the society in which he grows (Mead, 1930), and he will learn those things to which adults attach value. (ibid.)

The education of the young adolescent as a future citizen and as a worker should include not only the acquisition of a body of

knowledge, but the development of critical judgement, training in methods of study and thinking, cultivation of the power of reaching decisions and the habit of self-discipline, as well as the development of a sense of responsibility and of a sense of values. What should be avoided is the psychological effect of giving the older pupils another "dose of the same old stuff". (Kandel, 1951, p. 48.)

Consideration of these points appears to indicate that a satisfactory groundwork of liberal or general education is desirable but it does not mean that this type of education should necessarily follow courses of the traditional concept. It does not exclude a variety of forms of practical training adapted to the different interests of boys and girls. (ibid.)

The conventional distinction between a "liberal and general" and a "vocational and specialized" education is largely false because it does not correspond to contemporary social reality. (Wall, 1955a.) Kandel, too, points out that although it does not concern itself with the details of particular trades, which are the concern of technical education, a liberal or general education adapts the mind to use its best faculties in business, and to use business itself as a means of increasing culture. (Kandel, 1951.)

In addition, in an age of automation, when more and more people are required to reach a high level of general unspecialized education before the exact vocational skills which will be required in a specific task are learnt, the wide variety of specific vocational courses which developed in an earlier phase of industrialization have become unsuitable. (Parkyn, 1961.)

Pinsent suggests that there is need of emphasis on general education rather than on specific trade training, for both educational and economic reasons. There should be a wider concept of vocation, i.e. vocational training must be held to include a positive training for the good life as well as for the technical requirements and standards of a specific trade process. Studies must be organized on a topical method. It is possible to organize upon this plan all the types of schools which cater for pupils up to the age of fifteen years. (Pinsent, 1944.)

Dewey stresses the problem of education in a democratic society as being the problem of doing away with the dualism. (Dewey, 1922.) It is obvious that rethinking the conception of a liberal or general education and harmonizing it with vocational training is necessary. (Parkyn, 1961.)

One solution of the problem appears to be the provision of a common middle school, an education formula which is now accepted as desirable almost everywhere. (Holmes, Lauwerys and Russell, 1961.)

The abilities of verbal and abstract reasoning in primary school children can be measured with a reasonable degree of accuracy for they are based on the normal work of the school. If measurements as valid are required in other fields, such as practical or technical achievement, equal opportunities of developing such abilities would have to be given to pupils. It is coming to be realized that such opportunities can be promoted only in a broad education common to all children for only such an education will enable a wide range of potentialities to develop, and will provide for the development of those abilities and aptitudes which can emerge or mature only later, i.e. at fourteen, fifteen or sixteen years of age. This realization is leading to the view that the period of common studies should be lengthened, and that the final separation into different types of school should be postponed at least until the senior stage of secondary education. (Parkyn, 1961.) This opportunity of further experience is discussed in Part I, Chapter III, in "The exploratory year".

In 1948 the de Villiers Report had suggested a full-time foundational general education for junior adolescents in order to meet those educational needs which they all have in common and to determine aptitudes, interests and other personal qualities on the basis of which they would plan their studies and careers. (de Villiers report, 1948.)

It is most interesting to read that Sir Christopher Ingold, F.R.S., (1962) suggests that it is only after students have spent a propaedeutic year in a university that there should be any selection of students. Here, too, is noted the desire to postpone

final specialization as long as possible, for assessment to follow experience in the fields for which the pupil is to be selected and for the task of selection for the next stage of education to be delegated to that stage, and not to the previous, i.e. the secondary school stage of education. The question of assessment is discussed in this section under the heading: "Selection vs. allocation"; that of the task of selection is referred to in Part I, Chapter III, "Examinations"; and that of postponement of specialization is mentioned in this section under the heading "Types of children".

Summary

- i. Industry requires adaptable workers.
- ii. There is certain knowledge which all human beings need if they are to be human.
- iii. A child will learn those things to which adults attach value.
- iv. The antithesis between a liberal and a vocational education is fallacious.
- v. Provision of a common middle school is accepted almost everywhere as desirable.
- vi. Special abilities and special aptitudes appear only in the pupil's fourteenth, fifteenth or sixteenth year of age. It is obvious, therefore, that these special abilities and aptitudes cannot be measured before pupils have turned fourteen, fifteen, or perhaps sixteen years of age. (See Part I, Chapter II, Section C, "Types of children". See also p. 143.)

Conclusions

If industry requires adaptable workers, if human beings need certain knowledge which is common to all, if the antithesis between a liberal and a vocational education is fallacious, the almost universal agreement on a common school for early adolescence seems axiomatic.

Suggestions

There should be a common middle school for early adolescence, i.e. from the age of approximately twelve years or a little older to fifteen years or a little older.

4. THE NEEDS OF THE PUPIL

One principle on which much else depends is that no child whose needs are unsatisfied can profit adequately from schooling. (Stephenson, 1949.) This appears obvious enough when one thinks of the lower or physiological needs; rather more subtle needs than these, however, are involved.

Maslow (1954) arranges the basic needs in a hierarchy of prepotency, the prepotent being more urgent and insistent than the others under equal deprivation, and these others not emerging as consistent motivators of behaviour until the prepotent ones are relatively satisfied.

The grouping according to prepotency which Maslow uses is:

- i. the physiological needs
- ii. the safety needs
- iii. the need for belongingness and love
- iv. the need for importance, respect, self-esteem, independence
- v. the need for information
- vi. the need for understanding
- vii. the need for beauty
- viii. the need for self-actualization.

A person who is unsatisfied in all his needs will be most urgently, in fact probably totally, concerned with only the first, his need for food and drink. When this has been satisfied he can think of shelter, then of safety, then of companionship and so on. The most direct way of developing a life at a higher need level is by adequate gratification of the lower needs.

Maslow's order of potency is usual, but not invariable for all persons. Although he does not make a special point of individual differences in the strength of the basic needs these differences surely exist and are of considerable importance. It is

obvious that the higher needs, i.e. a need for more information or for beauty, are very much stronger in some individuals than in others.

A satisfied person is one for whom there are readily available the means of satisfying all his basic needs, whenever he develops an appetite for any of them. A person in whom these needs can be activating when they are appropriate, and whose life is so organized that acceptable means of satisfaction are readily available, is regarded as a healthy person.

Effective self-actualization can emerge freely only with prior satisfaction of the physiological, safety, love and esteem needs, and some of the others. When it has fully emerged it seems to organize and to some extent to control these other needs. Mention of more details of these needs which are relevant to this research appears to be necessary.

1. The physiological needs

These are the most prepotent of all needs in their own right. If all the needs are unsatisfied and the organism is dominated by the physiological needs, then all other needs may become simply non-existent or may be pushed into the background. When a human organism is dominated by a certain need the whole philosophy of the future tends also to change, e.g. the hungry man's Utopia is a place where there is plenty to eat. Certainty of the possibility of gratification within a reasonable time is important for health.

i. The safety needs

Like the physiological needs (except for sex), the safety needs are more often than not gratified in our society, at least for adults. The known is safer than the unknown, hence the quest for knowledge and for understanding may have linkages with the safety needs, although they seem more than subsidiaries.

iii. The need for belongingness and love

This group of needs appears when the other two groups have been satisfied. These needs involve not only the receiving but

also the giving of love, and their thwarting is, in our society, one of the commonest causes for unhappiness and for neurosis.

iv. The esteem needs

Firmly based in reality and the respect and esteem of others are the needs for self-respect and self-esteem. These may be classified into two subsidiary sets: a. the desire for strength, the certainty of one's capacity to do adequately what one is likely to be called upon to do, and the freedom to do it as one would like to do it; b. the desire for recognition and appreciation of one's competence.

Satisfaction of these needs leads to feelings of self-confidence, strength, capability, worth, adequacy, of being useful and necessary, whereas their thwarting produces feelings of weakness, inferiority, helplessness. (Roe, 1956.)

v. The need to know and

vi. The need to understand

The desires to know and to understand are not only cognitive but conative, and are as much personality needs as are the basic needs already discussed. They are seen in late infancy and childhood, perhaps even more strongly than in adulthood. There are reasonable grounds for postulating a basic cognitive need, and a desire "to understand, to systematize, to organize, to analyze, to look for relations and meanings, to construct a system of values". (Maslow, 1954, pp. 96, 97.) A number of school problems are probably to be understood as the frustration of this and succeeding needs. (Roe, 1956.)

vii. The aesthetic need

This need can only be included tentatively in a list of basic needs (Roe, 1956) but Maslow is convinced that at least in some individuals there is a truly basic aesthetic need. "They get sick (in special ways) from ugliness, and are cured by beautiful surroundings; they crave actively, and their cravings can be satisfied only by beauty. It is seen almost universally in healthy children." (Maslow, 1954, p. 97.)

viii. The need for self-actualization

This can emerge effectively and freely only with prior satisfaction of the physiological, safety, love and esteem needs, and some of the others. The specific form which this "need will take must naturally vary with the capacities of the individual.... All that a man can be he must be if he is to be happy. The more he is fitted to do, the more he must do." (Roe, 1956, p. 29.)

Each of these various needs seems to stress one aspect of the security syndrome; considered together they seem to indicate that the one basic psychological need is security. How much insecurity the individual tolerates will depend on his personality in the environment in which he finds himself. (Shiels, 1951.)

Because the needs appear in an order of prepotency, it follows that if a child's needs of the body (physiological) are satisfied, then his needs for safety, belongingness and love, and esteem (the last three forming part of the security syndrome) will appear. If these are not met, however, his needs to know and to understand cannot emerge. It seems essential, therefore, to be able to establish whether or not children have feelings of insecurity which are not normal, so that those in need of special help may receive it. All attempts at teaching a child who is "too" emotionally disturbed will fail. Feelings of insecurity can be assessed by means of a Security-Insecurity Test. (Shiels, 1951. See Part II, Chapter II, Suggestion No. 102.)

Summary

- i. No child whose needs are unsatisfied can profit adequately from schooling.
- ii. Basic needs are arranged in a hierarchy of prepotency.
- iii. These needs are:
 - a. the physiological needs
 - b. the safety needs
 - c. the need for belongingness and love
 - d. the need for importance, respect, self-esteem, independence

- e. the need for information
- f. the need for understanding
- g. the need for beauty
- h. the need for self-actualization.

iv. A life at a higher need level can be developed through adequate gratification of the lower needs.

v. Each of these needs stresses one aspect of the security syndrome.

vi. It is essential to establish whether children have feelings of security which are not normal.

vii. This assessment can be made by means of a screening test.

Conclusions

i. Many factors in the educational system are detrimental to the emotional development and health of children.

ii. Assessment of insecurity in all pupils, and particularly at their entry into the secondary school, would be a means of knowing which children needed special help in adjusting to new conditions. Help at the right time (Langeveld, 1955) would prevent serious emotional problems and problems of behaviour when the pupils are older.

Suggestions

i. There should be a school environment in which authority is exercised in a clear but protective and democratic way, so that there is provision for creative learning and co-operative enterprise, and a deeper understanding of every child's need for security. These measures will help to improve the mental health of pupils. (Morris, 1955.)

ii. The use of the Security-Insecurity Test (Shiels, 1951) at the beginning of Standard VI would help to find those pupils who need special care and assistance, and so prevent further difficulties for the pupil and the school.

5. FAILURE

Closely intertwined as it is with the three preceding topics, viz. transition, age of specialization and the needs of the pupil, and emphasizing as it does the importance of adequate guidance in the schools, the topic of failure is, nevertheless, dealt with separately for the purpose of clarity.

1. Readiness to learn

Admission to the first infant class is, as a rule, on chronological age only, most children commencing school in the year in which they turn six, although some systems admit pupils when they have just turned five years of age. This means that many children who are of normal (average) intelligence will have a mental age, as indicated on a test of general ability, of five years. A dull five-year-old child could have a mental age of just over four years of age.

In research carried out in Pietermaritzburg and Durban it was found that if, in the present school circumstances, an attempt is made to teach pupils of less than 5.6 mental age to read, a very great strain is imposed on both child and teacher. (Schmidt, 1953.)

Reading failure can also be due to physiological immaturity, especially immaturity of the eye-muscles. (Blair and Burton, 1951.)

A study which was carried out in the Transvaal by Beron (1957), too, found that if it were imperative to restrict admissions to school on a chronological basis, the work of the teacher would be made easier and the amount of effort required by the children would be reduced if only those children who were already five and a half years old were admitted.

There is need for some fresh thinking about what to do with the five-year-olds in their first three years at school. There should be far more activities that will prepare the immature for the more formal work of the school, more flexible grouping and smaller classes. (Schmidt, 1956.)

It is probable that many of the so-called reading disability, i.e. failure in reading, cases come from the school's attempt to force unready organisms to perform at a level for which they are quite unprepared. Confusion and failure will naturally result from the child's attempts to perform at a level which is beyond his abilities. (Ilg and Ames, 1950.)

The various readiness studies show that in all the subject fields, and certainly those at the primary stage and particularly in arithmetic, there appears to be a maturational sequence which is syncopated or violated at the risk of disturbing the child's capacity to learn. The maturational sequence is affected by prior experience.

Research tends to indicate that for each child there is a stage at which he is insufficiently mature to learn certain techniques, and that time spent trying prematurely to teach him is not only wasteful but ends in failure which builds up adverse attitudes in him and delays subsequent learning. Although this is not certain, there appear to be critical periods at which learning of particular skills or processes takes place more readily and surely than later. (Wall, 1955a.) These critical periods vary from individual to individual and are affected by environmental stimulation and prior experience which are only partly controlled by the school. (ibid.)³

3. Work done by Dr. Goldfarb demonstrates without any doubt that there is a critical period in the life of the human infant after which "mothering" is almost useless, and that the human infant, in consequence of lack of "mothering", fails to develop certain human attributes, i.e. the ability to give love, and the ability to think in abstract terms. (Bowlby, 1953.) It has not, however, been proved conclusively whether this disability is permanent or not.

There is good evidence to show that those children who are raised in a seriously deprived environment throughout their early years will almost certainly not reach the level of development which would have been possible for them had their environment been different. Long continued deprivation seems to reduce the need for intellectual stimulation, and if it does later become available to the individual, he/she may no longer react to it. (Bowlby, 1953; Roe, 1956.)

ii. Growth rhythms

Research to which Wall (1955b) refers suggests that curricula and the expectations which they embody are strikingly out of step with the rhythms of child growth and that teaching too much too soon may lead to delay or confusion in learning. The research of Zazzo and Dabout (1951 & 1952) suggests that official programmes for the five or so years of primary education, especially in the formal elements of grammar, spelling, arithmetic and written composition, are at least one year out of step with the rhythms of normal educational growth and that only the able children pass from year to year in step with their chronological age.

iii. Varying rates of growth

In addition to a child's initially having a mental age lower than his chronological age, he is likely to mature intellectually at a slower rate than is the average child, while the bright child will mature intellectually more rapidly; in the course of the five or six-year primary school period, therefore, the less able child is likely to fall further and further behind his abler contemporaries. (Wall, 1955a.)

iv. Emotional factors

A most important general conclusion which has emerged from studies on "Readiness to learn" is that readiness for learning any specific technique at any stage of education is a function of the whole personality in its physiological, intellectual, experiential and emotional aspects (Wall, 1955b), yet one of the most important and most frequently neglected aspects of the whole problem of learning is the child's emotional readiness. (ibid.)

Bettelheim (1961) says that because learning is based on emotional security, the very insecure child, the upset child, is a poor student, and very many children may decide not to learn, i.e. to fail, as the only way out of their difficulties which are caused by emotional disturbances. (ibid.) Vernon (1958), too, stresses the fact that there is strong evidence that a young child who is emotionally secure in a democratic family environment is better able to use and to develop his intellectual capacities than is the child who is either rejected or over-protected.

Many learning inhibitions can come from

- a. a child's desire for inner honesty and truth, and from his trying to succeed in terms of his own life experience and of clear-cut desires and values,
- b. the feeling that competition is wrong,
- c. the desire to be unique,
- d. the desire for status and self-respect, when the pupil would rather be first among the weaker pupils than be second among the best,
- e. close identification with a beloved parent who failed, or left school at that age.

If he can be satisfied with being one of the gang, he may contend with the mediocre group in which his best efforts land him.

(Bettelheim, 1961.)

Thus educational malfunctioning, of which reading disturbance is the most characteristic form, is often a first sign of emotional disturbance. Only if severely disturbed will a child of normal intellectual endowment have serious trouble learning to read, and his inability to read, which may be the first expression of his disturbed state, arises in the same emotional problems which, in a few years, may break into grave asocial behaviour. (ibid.)

If a small child is emotionally disturbed, and his parents are unwilling or unable to recognize this, his disturbed state goes unheeded until the child goes to school. Because of educational malfunctioning the child may be singled out, but his disturbance may still be unrecognized. If the child receives no help with his emotional problem, and if he is simply carried by the schools into later grades and into adolescence, then neglect becomes very costly not only to the child, but to his family and to society. (ibid.) An added difficulty in this discovery of disturbed children, and contributing very often to their disturbance, is the large number of pupils which one teacher has in her care. In the infant classes the pupil is often one of forty children. The question of the size of classes is discussed in this section under the heading: "Increasing demands on the teacher".

v. Failure an artefact

The age-grade system that sets up standards which are based more or less "upon the capacities of children of average ability, dooms the dull to increasing failure as they go through school." (Wall, 1955a.) It may be inferred from research figures that "failure (i.e. inability to conform to the standards set by the school programme) is more widespread than would be expected from the known proportions of the dull" (ibid., p. 113) and that some backwardness may "be an artefact of the age-grade promotion system itself, especially if the thresholds of promotion are arbitrarily and unobjectively fixed." (ibid., pp. 113, 114.) "We should expect some 10 to 12 per cent of children inevitably to be backward at the chronological age of 10, solely because of a lower than average ability" (ibid., p. 115), while among children of superior intelligence retardation is often undetected by the teachers because such children, sometimes mentally two or three years ahead of their contemporaries, frequently achieve an average performance which is regarded as being satisfactory. (ibid.) The age factor is discussed, too, in Part I, Chapter III of this work.

The attempt to make fine discriminations at the borderline which has to be drawn in any examination between success and failure can mean that an injustice is done and that failure, because of the prevailing system, must result. (Watts, Pidgeon and Yates, 1952.)

vi. Remedies offered for failure

Although the causes of inadequate scholastic attainment are complex and usually multiple, at the transition from primary to secondary school, there appear to be but two remedies, i.e. either repeating the grade or promotion on age, both of which are applied in most schools. Neither of these courses of action sets out to remove the causes but treats only the symptom of below-standard achievement and as such both are ineffective educational methods. Nothing could be more erroneous than to expect a child to have plain sailing after he has merely overcome his learning inhibition. On the contrary, it is when this has been achieved that the real task of understanding its nature has only just begun. (Bettelheim, 1961.)

It is only by adequate application of the principles of child nature, growth and development to curriculum, syllabus, method, standards required, and to the teacher's approach to children, from the first entry of the pupil to the school, that retardation can be reduced. The school alone, however, cannot eliminate retardation, for so much depends on the home.

vii. Ability to tolerate failure

An individual who has experienced need satisfaction, including success, is more able to tolerate frustration than one who has experienced frustration after frustration. (Roe, 1956.)

Children vary in their ability to tolerate failure, so that it is unwise to assume that it is beneficial to a pupil to fail. Failure that is too great, met too soon, and too often can disrupt the emotions completely. (Carroll, 1947.) Failure in a selection examination for secondary school and on which the pupil's whole future will depend, added to the family pressure to succeed and the disappointment to the family pride and ambition appears to be too much to impose on a pupil of eleven, twelve, thirteen, or fourteen years of age.

The child's confidence in his power to learn is established through success. This means that there should be an adjustment of educational demands to the pupil's capacity to learn, and the elimination of total failures which are also painful and destructive of morale. It does not mean that pupils should not be challenged by tasks which are slightly beyond their immediate abilities, and that they should never be allowed to fail. The watchful teacher should see to it that the balance of a child's experience, during his early years particularly, should be on the side of success, that the failures which he meets in learning are not total, but act as a spur to further effort which will meet with success. (Wall, 1955a.)

It is by the positive method of attaching approval to desired responses and not the negative method of conditioning fear to undesirable behaviour that social training is more effectively achieved. Fear of failure is an unsatisfactory educational motive. (Shaffer and Shoben, 1956.)

Summary

i. Readiness to learn

- a. Children are admitted to school on chronological age in spite of the varying mental ages of pupils.
- b. Under present conditions, attempts to teach children with a mental age of less than 5.6 years are accompanied by great strain for both the teacher and the child.
- c. Eye immaturity and eye defects can cause reading failure.
- d. There appears to be a maturational sequence which is violated at the risk of disturbing the child's capacity to learn.
- e. Premature teaching can build up a resistance to learning in the child.
- f. There appear to be critical learning periods which vary from child to child.

ii. Growth rhythms

Curricula expectations are out of step with growth rhythms.

iii. Varying rates of growth

A dull child is likely to mature intellectually at a slower rate than is the average child and so falls ever further behind.

iv. Emotional factors

- a. Readiness to learn is a function of the whole personality.
- b. Emotional readiness of a pupil to learn has been most frequently neglected.
- c. Many children "fail" as an attempt to meet their difficulties.
- d. The insecure child cannot learn.
- e. Educational failure can be the first sign of emotional disturbance.
- f. Only if severely disturbed will a child of normal intelligence have serious trouble in learning to read. This failure stems from the same state which can lead to asocial behaviour.
- g. Classes which are too large can contribute to failure.

v. Failure an artefact

- a. The age-grade system dooms the dull to increasing failure.
- b. Thresholds of promotion which are arbitrarily and unobjectively fixed can cause retardation and backwardness.
- c. Retardation of superior children often goes unnoticed.

vi. Remedies offered for failure

- a. The child has to repeat the whole course, including those sections in which he had succeeded.
- b. The pupil is promoted on age.
- c. Neither procedure removes the cause of failure, nor helps the child's re-adjustment consequent on failure.

vii. Ability to tolerate failure

- a. Ability to tolerate failure varies from individual to individual.
- b. Failure that is too great, or too often repeated can disrupt the emotions completely.
- c. This does not mean that a child should never fail; it does mean, however, that his failures should be outweighed by his successes.
- d. Fear of failure which is a negative method is unsatisfactory as an educational motive.

Conclusions

i. The mental age and school readiness of all pupils should be assessed on entry to the infant classes.

ii. At this stage, too, medical examinations, with particular attention to the eyes, would seem to be most desirable.

iii. It is necessary to provide a curriculum and a syllabus which are in step with the growth and maturation rhythms of children.

iv. The case of a pupil who fails educationally should be investigated by a psychologist, preferably one who has had a clinical training.

v. Early discovery of causes of individual failure and adequate treatment of the pupil will prevent untold troubles and difficulties for the pupil, school and society.

vi. Failure is often an artefact of the education system, and dull children require to move at a lower level of work and at a slower pace.

vii. Those who decide priorities among children for certain streams should base their judgement on more than one set of tests.

viii. Bright pupils often under achieve.

ix. It appears unreasonable to require a pupil to re-learn those things which he has learnt and can do, yet this is what he has to do in the repetition of a standard, unless, of course, he has failed every subject.

x. Very seldom is the requirement to succeed in everything at once met outside the school system.

xi. Repetition of a standard alone seldom solves the original problem which caused the failure.

xii. Time spent in trying to teach unhappy children is not only a waste of the teacher's time, but the effort can build up a situation in which the child cannot learn at all.

Suggestions

i. Every child should be provided with a continuity of learning experiences so that he/she may progress at his/her own rate in order that fear of failure will be eliminated.

ii. Every effort should be made to prevent failure.

iii. Every effort should be made to prevent retardation.

iv. Adequate guidance from the beginning of her/his school career as well as remedial education should be available to every child.

v. As long as the age-grade (standard in this country) system exists and unequal children are expected to progress at

the same pace, provision should be made for pupils to be given time to catch-up. Some pupils may need special help only once, others may need it frequently, and especially after illness and/or long holidays.

vi. In the present system, where failure appears to be inevitable for some children, special provision, treatment and help should be available for those who have failed. From the repetition of a standard they should derive benefit and not a feeling of inferiority, worthlessness and depression.

vii. When pupils are transferred on age to the secondary school, arrangements should be made to help them to make up what has been skipped. This is particularly necessary in the basic subjects which form the foundation of secondary school work.

viii. Consideration should be given to the possibility of not expecting pupils to pass all subjects at the same time.

ix. Consideration should be given, too, to the fact that a large number of pupils who are repeating the standard in a group with only a few pupils who have not failed can produce a group level of aspiration so low that it will cause the non-failures to drop their level of achievement and to fail.

x. The pupil's social position, i.e. his acceptance in the group, needs to be improved if his learning is to be facilitated.

xi. Teachers of infant classes should have smaller numbers of pupils than is at present the case.

xii. Readiness for school should be determined. This includes:

- a. Physical readiness. Difficulties of muscular control and co-ordination, defects of speech, hearing and sight should be discovered as early as possible.

The child's eyes should be tested for convergence. In addition, teachers should be taught how to use a simple "Vision Testing Chart", which should be used if a pupil appears to have any educational or vision difficulty; the pupil should, in need, be

referred for further examination.⁴

- b. Emotional readiness. This should be observed.
- c. Reading readiness. Readiness for reading should be assessed by means of special tests.
- d. Number readiness. Readiness to start number work should also be assessed.

6. GUIDANCE

The development of adequate systems and techniques of guidance is fundamental in the modern problem of providing equality of educational opportunity. (Kandel, 1955.) More important, perhaps, is the task of convincing parents of the soundness of this professional counselling which replaces the traditional practice of choice by trial-and-error in which the pupil may have to fail first. (ibid.)

Guidance is concerned with pupil growth; a growth philosophy de-emphasizes marks, while a selective philosophy emphasizes marks, and the evidence of research gives a clear mandate to teachers and administrators to de-emphasize marks during the period of compulsory or customary education. (Olson, 1960.)

A new and broader form of child guidance is required to ensure the best - there is neither perfect nor infallible - allocation of pupils.

Those responsible for allocation will need to be educational psychologists of a novel kind. Their training will have to include, not merely the techniques of psychological interviewing and testing, not merely an inside knowledge of schools and of the everyday problems of the teacher, but also a first-hand acquaintance with the peculiar cultural and sociological backgrounds of the widely different sections of the community from which our school populations are drawn. (Burt, 1954, p. 30.)

4. This suggestion is made because school medical inspections take place every two years, and an eye disease can start just after one inspection and, before the next medical examination two years later, irreparable damage can be done to the eyes. (Discussion with Dr. P.H. Boshoff, September, 1962, and a letter dated 12/1/62 from him. See Appendix C.)

There is need for the inclusion of the general principle of guidance in all teacher training programmes and for special training of teachers assigned specific guidance duties. This topic is touched on again in Part I, Chapter III, "The exploratory year" and in "Panel procedures".

Summary

- i. The heart of the problem of differentiation is to be found in an adequate system of guidance.
- ii. Parents need guidance, too.
- iii. Guidance de-emphasizes marks.
- iv. Those who are responsible for allocation of pupils will need special training.
- v. All teachers should have a knowledge of the general principles of guidance.
- vi. Those responsible for guidance in schools need special training.

Conclusions

- i. An adequate system of guidance is essential in every school.
- ii. Parents should be consulted in regard to major decisions taken about their children's school careers.
- iii. Adequate allocation programmes demand trained personnel.
- iv. A knowledge of guidance is essential to all teachers.
- v. Untrained persons should not undertake the task of specific guidance.

Suggestions

- i. Guidance should start in the first class in the educational system and should be continuous throughout the child's career.

ii. A knowledge of the principles of guidance should be required of every teacher.

iii. Knowledge of testing and counselling techniques should be required only of specialists trained for the task.

iv. Trained personnel only should be responsible for the guidance programme in schools.

v. Adequate provision in time-table arrangements should be made for the duties of guidance specialists whose work should not be subsidiary to other teaching responsibilities.⁵

7. TYPES OF CHILDREN

Aptitudes can never be assessed directly, and one is only able to infer differences of aptitude from different abilities which are acquired in identical conditions. (Reuchlin, 1959.) Burt distinguishes between capacities of two main kinds - a general capacity entering into every school subject in differing degrees and special capacities entering only into a small group of subjects, (e.g. verbal or linguistic ability, arithmetical or scientific ability, manual or technical ability and possibly artistic, musical and other aesthetic abilities). These differences in special abilities fail to declare themselves until a comparatively late age (Burt, 1943), and while mental abilities become more specific as children grow older at 8-10 years the general factor of intelligence (g) almost swamps the influence of more specialized factors; the verbal factor (v) appears at about 11 or 12 years and the arithmetical factor (n) at about 12 years, although the manual factor (m or k) remains obscurely in the background even at the later ages. (ibid.)

In reviewing research in England and France, Reuchlin (1959) came to the conclusion that psychologically founded direction of pupils towards technical, literary or scientific education was not possible before the age of 14 at the earliest. Pinsent (1944) regards it as unwise to attempt even indirectly to fix the adoles-

5. A desirable goal is one hour of counselling time to each fifty or seventy-five pupils. (Erickson, 1947.)

cent's choice of occupation before the age of 15 or 16. The Committee of Nuffield College expressed itself emphatically against devoting the years of schooling before the statutory leaving age of 15 to vocational training. (Kandel, 1951.)

Any scheme of organization which proposes to classify children at the age of eleven or twelve years according to qualitative mental types rather than according to general intelligence is in conflict with the known facts of child psychology. "The existing system, which tends to direct all the most intelligent to schools of an academic type, regardless of potential technical abilities, is obviously in conflict with the needs of both the child and of the nation." (Burt, 1943, p. 140.)

A bold, but essential hypothesis in thinking about the curriculum has been put forward by Bruner (1960, p. 33) that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development." No evidence exists to contradict this hypothesis; there is considerable evidence being amassed that supports it. (ibid.)

The implications of this hypothesis lead, on the practical side, not only to a demand for a much more thorough education and training of teachers, but also to an abandonment of the old conceptions of types of ability, and of intellectual differences between the sexes. (See "Education for girls".) They give added support to the current belief that the best education for the early years of adolescence can be provided in a common middle school.

It is a fundamental fact that abilities, together with desirable interest and character traits, tend more often than not to go together. To a large extent, the children who do best in an academic grammar school are the same as those who would do best in a technical or a modern school.

Over and above a general ability, some children are more developed on the academic-verbal side while others, again, are more developed on the technical-practical side; others, again, are more interested in intellectual matters; and yet others show

stronger social qualities, including leadership. They are not distinct types, however, (Vernon, 1957a) for "there are no born 'theorists' or 'practical men', no philosophers, doctors, teachers or handworkers predestined by their specific intellectual constitution." (Mierke, 1962, p. 112.)

Each group showing similar qualities represents opposite ends of a continuous distribution, and it is very difficult to assess such differences accurately, especially at 11 years. (Vernon, 1957a.)

The impossibility of discriminating with complete accuracy between children seems to mean that there ought to be no sharp division between the curricula followed by those who just "pass" the selection examination and those who just "fail". (Watts, Pidgeon and Yates, 1952.) It must be pointed out, too, that a sharp distinction between the types of course which children follow during the first two years in the secondary school makes comparison of their potentialities and needs at the end of that period very difficult. (ibid.)

Ginzberg (1956), too, feels strongly that the world can profit from America's experience, i.e. that as much as possible should be contributed to the enlargement of personal opportunities, and that premature commitments should be avoided.

By structuralizing the aptitudes which it calls into play specialized education will crystallize the individual differences existing at the time of directing the pupil towards his new studies. From a psychological point of view it might be dangerous to submit to a process of this kind individuals who were subsequently to manifest potential abilities and aspirations quite different from those which it was claimed to foster. Such a crystallization process would be advantageous if it were possible accurately to determine or assess aptitudes. (Reuchlin, 1959. See also Part I, Chapter III, "Intelligence tests" and "Failure" in this section.)

The tendency to type children and to classify them according to broad categories rather than in terms of individual differences has been the bane of the search for better ways of developing

talent. (Bereday and Lauwerys, 1961.) The main basis for selection must be unidimensional, i.e. in terms of level of schooling, not multi-dimensional, i.e. type of schooling for which the child is fitted. If long term segregation is to be carried out, therefore, it must be based on some stable and enduring characteristic, which can be accurately assessed, and which has a major influence on educational progress. (Vernon, 1957a.)

It will be realized that it is not easy to determine the attitude of the Natal Education Department in regard to abilities and aptitudes, their measurement and consequent grouping of pupils, when the various statements of the aims of the two-stream policy are studied. (See, too, Part I, Chapter II, Section A 10.)

Five of these official statements are:

i. "Our primary object is to exclude from the academic course those pupils who have clearly shown their inability to cope with it." (Natal. Education Dept., 1961b, p. 50.)

ii. "To provide for our weaker pupils." (ibid.)

iii. "The maximum development of each individual according to his aptitudes and abilities." (Biebuyck, 1961.) *1961 Natal*

iv. "To provide a better all-round development for each individual pupil according to his innate ability." (ibid.)

v. "To provide courses of study suited to the capabilities of individual pupils." (Natal. Education Dept., 1961a.) *1961 Natal*

Each is discussed in turn.

1. Exclusion of dull pupils from the academic course

Certain subjects (ibid.) are on one level only, as are Latin or Greek. (See Appendix B.) This means that the less dull pupil must follow an academic course which is preparatory to a university career, whether he wishes to proceed to university or not. One wonders whether this is not a shade of the Norwood Report (1943) with its theory of three types of children, i.e. academic, technical and practical, which is psychologically a groundless theory. (Burt, 1943.)

On the other hand, one wonders why the subjects in Schedule C and Latin or Greek could not be taught at different levels; in the case of the Classics, for instance, teaching at "O" level could place more emphasis on cultural background than on language. It would not be of consequence if the subject were named something else! The fact that children may be debarred from choice of certain subjects just because they are in the "O" level will stigmatize that level, in spite of its name. (Vernon, 1957a.) In one school in Durban where the "O" group was very small, the pupils in the class requested that theirs should not be called the "O" class.

It is coming to be accepted that any subject can be taught effectively in some intellectually honest form to any child at any stage of development. (Bruner, 1960.) Because it is impossible to discriminate with 100% accuracy there ought to be no sharp distinction between the curricula of those who just manage to qualify for the A-level and those who just fail to do so. This should be accepted as the basis of educational policy if the educational provision of the schools is to suit the abilities and aptitudes of the children. (Watts, Pidgeon and Yates, 1952.) (See, too, p. 143 of this treatise.)

Two of the basic needs of a human being are "to know" and "to understand". He needs to know and to understand not only himself, but the world in which he lives, i.e. his civilization, his culture and his place in it. (Maslow, 1954.) These needs can only be met in a full-time foundational general education. (de Villiers report, 1948.)

ii. To provide for our weaker pupils

Taken with the previous aim, it appears that thinking has been along the traditional lines, i.e. that there are three types of human ability and that certain subjects cannot be studied by weaker pupils. When these certain subjects are at a level suitable for a preparatory course to university, obviously they cannot be studied by the weaker pupils, but syllabi in all subjects can be provided at different levels. Although they are intellectually not as able as others these weaker pupils should enjoy our common human heritage.

When one looks at the statistics for 1960 for the Natal Education Department (Natal. Education Dept., 1961d) one sees:

a. the median chronological age for Standard V is 12.7 and 6% of Standard V pupils are 14+ years, i.e. backward and/or retarded, and that

b. in Standard VI there are:

467 pupils aged 15
123 pupils aged 16
21 pupils aged 17
1 pupil aged 18,

(see Table 2 in this treatise)

and that pupils in Standard VI may leave school at the end of the year if they have turned fifteen years of age. It seems that the provision for the "weaker pupils" is far "too little and far too late." (See Part I, Chapter I of this work.)

iii. The maximum development of each individual according to his aptitudes and abilities

Special aptitudes do not make their appearance until children are thirteen, fourteen, fifteen or even sixteen years of age. Neither special aptitudes nor abilities can be measured by one "old-type" examination written at the end of Standard VI. (See Part I, Chapter III of this treatise.) And, most important of all, what the school teaches and how it teaches it, affects the growth of intelligence itself. (Husén, 1951; Ramphal, 1961; Schmidt, 1960; Vernon, 1957b; all of whom are mentioned in Part I, Chapter III, "Intelligence", of this work.)

Pupils have physical, intellectual, emotional, social, moral and aesthetic ability, and a greater variety of each than it is either desirable or possible for the school to develop.

iv. To provide a better ... all-round development of each individual pupil according to his innate ability

Again, pupils have a variety of innate abilities; in addition, because of the interaction of heredity and environment even before the individual is born, it is not possible to measure innate ability alone (Burt, 1921; Cronbach, 1949), so that one does not know according to what criterion the individual is to be developed. This is discussed in Part I, Chapter III, "Intelligence".

v. To provide courses of study suited to the capabilities of individual pupils

The Shorter Oxford English Dictionary defines "capability" as:

- a. the quality of being capable in various senses;
- b. (usually pl.) an undeveloped faculty or property; a condition capable of being turned to use 1778;

and "capable" as:

- c. open to; susceptible;
- d. having capacity, power, fitness for;
- e. having general capacity; qualified, gifted, able 1606;

and "capacity" as:

- f. mental receiving power; ability to take in impressions, ideas, knowledge 1485. 5. Active power of mind, talent 1485. 6. gen. the power, ability, or faculty for anything in particular;
- g. capability, possibility 1659. 8. Position, condition, character, relation 1649.

If "capabilities" are taken to mean qualities of being capable in various senses, then it would imply intellectual, physical, emotional and social qualities of the individual.

The remarks which have been made in regard to points iii and iv in the previous paragraphs apply here, too.

Summary

i. It is difficult to assess aptitudes.

ii. Distinction is drawn between a general capacity which is the strongest influence and special capacities which appear at different times from about the age of eleven.

iii. It is not possible to classify children according to specific mental types at the age of eleven or twelve years.

iv. Research points to the fact that classification of pupils for a literary, technical or scientific education is not psychologically possible until at the earliest fourteen, and possibly not before the age of fifteen or sixteen years.

- v. Children who do best in the grammar school would also, to a large extent, do best in any other type of school.
- vi. There are no distinct "ability types" of children.
- vii. The impossibility of discriminating with complete accuracy between children implies the unwisdom of making sharp curricular divisions which "type" pupils.
- viii. The basis for selection must be level of schooling and not type of school. (See "Human resources" in this section.)
- ix. The basis of long term segregation must be on some stable and enduring characteristic which can be accurately assessed and which has a major influence on educational progress.
- x. "Any subject can be taught effectively in some intellectually honest form to any child at any stage of development." (Bruner, 1960.)
- xi. Premature streaming crystallizes individual differences at the time of direction to the specific streams.
- xii. In statements on the "Two-Stream Policy" in Natal the terms capabilities, aptitude, ability and innate ability appear to be used to convey the same idea.
- xiii. The school has to decide which potentialities it wishes to develop.
- xiv. Potential, as such, cannot be measured.

Conclusions

- i. There are no distinct ability types of children.
- ii. All children can learn the same subjects at different levels.
- iii. Placing pupils in different levels of schooling appears to be the best method of grouping.
- iv. Premature streaming crystallizes individual differences so that it is very difficult to redress wrong allocations of a pupil to a certain type of education, i.e. academic, technical or practical.

v. Specialization which provides for different aptitudes of pupils cannot, on psychological grounds, begin before the pupils are at least fourteen, possibly fifteen or sixteen, years old.

vi. Unless concepts are carefully used it is not possible to decide what is desired in provision of differentiated courses. Unless goals are clearly defined, their realization is almost impossible.

vii. The reliability of the measurement of success determines the predictive value of any measurement (McIntosh, 1959), so that if the measurement of success or the ultimate goal is not clearly defined, it is impossible not only to determine the predictive value of the technique or instrument used for its measurement, but also to know what is required to be measured and what measuring techniques or instruments would be most reliable in its assessment.

viii. The use of blanket terms and loose metaphors can easily lead to confusion of aims and dissipation of effort.

Suggestions

i. Pupils should not be typed, i.e. the brightest should not automatically be academic, the second best vocational, and the dull practical.

ii. A common general education (see No. 3 "General or special education" in this section) should ensure that any future Keats, who, today, would, on account of ill-health and consequent absences from school, probably have been in the "O" stream, will "look into Chapman's Homer", and that there will be "no mute, inglorious Miltons." It is for the school and society to see that there are no "Cromwells guilty of their country's blood." (Burt, 1962; Purcell, 1961.)

iii. Some attempt should be made to know the individual temperament so that at least, as an extreme example, the child with a keen imagination, a love of poetry, an instinctive repulsion to manual activities shall not be sent to a technical school, nor the

child who is never happy unless he is making something to the grammar type of school. (Thomson and Jones, 1936.)

iv. Specialization should not, on psychological grounds, take place until the pupil has turned fifteen or even sixteen years of age.

v. The aims of a policy of differentiation should be defined in unambiguous terms.

8. THE COMPREHENSIVE SCHOOL

The predominant motive for the development of the comprehensive school is a desire to provide equality of secondary educational opportunity for all. This development seeks to provide a vital and new approach to secondary education. The comprehensive schools show an interesting variety of growth and origin, and it is from this variety of approach and organization that their strength springs. (Howard, 1958.) This variety is to be found from school to school and from country to country. Although, of the countries studied, both England and Sweden provide comprehensive schools, in the latter country these schools are for all pupils from the age of seven, so that reference here is to the comprehensive schools of England only.

The comprehensive school in England has, in principle, much in common with the county secondary schools set up under the Act of 1902 to cater for children whose ability ranged from very high to fairly low. (Miller, 1961.)

By the requirements of the 1944 Education Act, the comprehensive school has to provide education suitable to the age, aptitude and ability of all its pupils, and the means within its organization whereby each pupil can be regarded as an individual no matter how large the school. (Howard, 1958.) For the purpose of the Ministry's statistical returns, secondary schools are classified as comprehensive where they are intended to provide all the secondary education facilities needed by the children of a given area, but without being organized in clearly defined sides. (Horsbrugh, 1953.)

i. Organization

Although there is no typical comprehensive school it is necessary to mention some of the broad characteristics which many have in common.

ii. Intake

In general the intake is intended to reflect the distribution of ability in the child population. The realization of this intention depends on the attitude and policy of the local education authority, other schools in the area, and the intervention of the Ministry of Education. (Rogers, 1958.) The parents of all children within a catchment area defined by the County Council have a right to send their children to the particular comprehensive school in whose catchment area they live.

iii. Internal selection of pupils

There is some system of ability streaming and/or setting. At some schools, e.g. Maesydderwen, Breconshire, the head teachers of the primary school submit a progress report, and all pupils are given an attainment test in English and arithmetic. This test is not selective in the sense that the entrance selection examination was, but it is a means of obtaining groups of a fairly uniform standard of attainment for teaching purposes. Pupils are then allocated to forms. (Thomas, 1958.) The time-table is so arranged that the two hundred pupils (six forms in the first year) are taught a "setted" subject at the same time.

iv. Setting

The basis of the set system is the subject rather than the form, so that all children have the opportunity of instruction in a particular subject irrespective of the form in which they are placed for general form work. There is continual selection and transfers may be effected from set to set throughout the school year so that the brighter pupils are not held back nor are the slower pupils penalized. Setting is continued in the second, third, fourth and fifth years. Setting makes unnecessary the organization of the school into sides or streams as is the case in a multi-lateral school. (ibid.)

v. Curriculum

For the first three years all pupils follow the same curriculum with two exceptions. Even though the same ground is covered, the emphasis and the amount of detail vary. In the second term for those new pupils who have shown some aptitude for language, French is introduced, and those pupils who have made good progress in French may take Latin in their second year. After a period of three years optional courses are introduced.

vi. Examinations

Pupils are entered for external examinations, e.g. the "G.C.E.", those of the Royal Society of Arts, the City and Guilds, and Union of Educational Institutions. Internal assessments are also made by means of objective tests, usually mental ability, English and arithmetic; (at the Willen Hall Comprehensive Secondary School tests are given after the first six months, as in the Transvaal) and use is also made of subjective assessments and the cumulative record.

vii. Size

There is no reason for all comprehensive schools to be large. (Howard, 1958.)

viii. Staffing

At Kidbrooke Comprehensive School the staffing ratio is 1650 pupils to 86 teachers, i.e. 19 to 1.

ix. Aim

It has been indicated ... that individual consideration and the fostering of aptitudes must be at the very heart of the comprehensive school curriculum. The comprehensive school does not avoid selection but seeks to perform this necessary and constant task professionally and internally and with the minimum of fuss. It avoids undue stress and strain on pupils, frees the primary school from the incubus of being regarded as merely the handmaid of secondary education, and reassures parents who are afraid of a "once-for-all" decision. (National Union of Teachers, 1958c, p. 16.)

The comprehensive school in England became the focus of party political attention, the Conservatives strongly opposed to, and the Labour supporters strongly in favour of such a school. Although the education policy was fairly consistent and favoured a tripartite system, local authorities were, nevertheless, permitted to experiment with comprehensive schools since the philosophy of comprehensive secondary school education emphasizes the role of the school in the development of a democratic society. (Miller, 1961.) Miller found that:

- a. in general, the main arguments advanced for and against the comprehensive school were inconclusive, but that in respect of the problem of selection, transfer and variety of educational provision, the comprehensive school appeared to have some advantages;
- b. the cross-fertilization of ideas and experiences, which is held to be an important function of the comprehensive school, is facilitated by vertical division into relatively small and compact house units, as opposed to horizontal division into lower, middle and upper school. This division into house units also helps to promote security;
- c. given conditions comparable with those prevailing in the comprehensive schools in his investigation (i.e. well equipped, well housed and well staffed by enthusiastic teachers teaching enthusiastic pupils; ability streaming and setting for the major studies), the comprehensive secondary school can be an effective agency in modern British society, and, in respect of certain cultural and educational phenomena, it may have advantages over a system of segregated schools.

In Part I, Chapter II, Section B of this treatise, polite reference was made to the bilateral type of education of the four provinces of the Republic of South Africa, regarding which there is, in the de Villiers Report, the following statement:

It is true that many high school teachers, both of "academic" and "vocational" subjects, direct their teaching toward broader objectives such as general culture, citizenship and character. In spite of the efforts of such teachers, however, present high school education appears to be neither general nor vocational, but a mixed breed which may best be described as academically plus vocationally biased education. (de Villiers report, 1948, p. 14.)

No provincial secondary school in this Republic can be a comprehensive school as long as the Vocational Education Act of 1955, which legalized the division of control of education, remains in force. The Director of Education, Transvaal, in his report for the year 1950 stated that it should go on record that that work (i.e. vocational guidance), while essential even under conditions existing at that time, could never come to full fruition before all types of differentiated secondary education were properly co-ordinated under control of the Department. (Transvaal. Education Dept., 1955b.)

Summary

- i. The motive for the development of this type of school was to provide equality of educational opportunity for all.
- ii. There is no typical comprehensive school.
- iii. Some schools give standardized tests in English and in arithmetic as two of the bases of grouping.
- iv. Setting in subjects is one of the systems of grouping used.
- v. For the first three years all pupils follow the same curriculum, except that another language is added for the pupils who show an aptitude for language.
- vi. Pupils are entered for some of the external examinations.
- vii. There is no need for a comprehensive school to be large.
- viii. One school studied in this research has a staffing ratio of 19 to 1.
- ix. Individual consideration and the fostering of aptitudes is at the very heart of the comprehensive school curriculum.
- x. The comprehensive school system performs the task of assigning pupils to courses with the minimum amount of fuss strain and anxiety to the pupils and parents.

ii. Some type of comprehensive school appears to offer part of the solution to the problem of streaming and selecting.

iii. Such a school need not be large. Whatever its size, one of its main aims is consideration of the individual.

iv. The following of a common curriculum for some years provides a guidance function. (See "Guidance" in this section.)

v. Natal is fortunate in that its Differentiation Policy has only just been introduced; it should, thus, be able to benefit from the experiment and mistakes as well as success of others.

Suggestions

i. Natal should attempt to provide a common middle school curriculum at different levels of subject matter (there are already two levels), adequate guidance of pupils and differentiated courses within a framework which realizes the aims of the comprehensive school. (The reservation of divided control of education is borne in mind. Part I, Chapter II, Section C.)

ii. If there is enforcement of zoning regulations all schools should provide the same courses.

9. SELECTION VS. ALLOCATION

While it has been shown that in the occupational field statistical prediction is more accurate than is clinical prediction (Meehl, 1954), Vernon (1957a) stresses the importance of ensuring that, in the schools, maximum justice should appear to be done rather than that a rigid stand be taken on statistical findings.

Stellwag (1955), too, warns against the danger of applying to schools the methods of selection and treatment of individuals which are found in industry. The school is concerned with the individual, whether he passes or fails, and often failure in one type of education may have been of more benefit ultimately to the individual than success in some other type. Application of industrial techniques in selection in schools may also mean that another industrial phenomenon, that of mass production, will make an insidious infil-

tration into the educational system, whereas the classroom should be adequately protected against the tendency of our time towards mass-mindedness. (Mierke, 1962.) It would be ironic, indeed, if an extension of the very measure which was originally introduced to protect children from industry, viz. compulsory school attendance, were to mean that in the selection of secondary pupils schools were to use industrial techniques.

Summary

- i. In the occupational field statistical prediction is more accurate than is clinical prediction.
- ii. Selection in schools cannot be rigid to the exclusion of justice.
- iii. The methods of industry, i.e. its methods of selection and mass-production, should not infiltrate into the schools.

Conclusions

- i. Selection procedures which emphasize the intellectual to the exclusion of emotional, physical and social factors and needs have little place in a school.
- ii. An adequate guidance programme precludes selection and makes allocation of pupils the best procedure in schools.
- iii. Lack of accommodation sometimes necessitates selection; the fact that there is sufficient accommodation in Natal schools, however, should reinforce an allocation programme.

Suggestions

Selection to streams in the secondary school should be replaced by allocation of pupils to levels of study and/or sets in subject areas.

10. EDUCATION FOR GIRLS

Two aspects of this topic need to be discussed here:

1. Different developmental rates of the sexes

English (Yates and Pidgeon, 1957) and American (Blair and Burton, 1951) research workers state that there are developmental differences between boys and girls. The girls mature earlier and have greater verbal ability at twelve to thirteen years of age, perhaps even later, than have boys. (See Appendices E and G.)

If, as happens in Natal, pupils are promoted on the marks obtained in one old-type examination, a greater proportion of girls than boys may be in the higher level or stream. (See Part I, Chapter III, "Age".) On psychological grounds there appears to be nothing wrong with this disproportion. The irony of it is obvious when one realizes what happens to the education of girls.

ii. Intellectual equality of the sexes

In addition to the earlier maturing of girls, it is known that in all fields women are intellectually equal to men (Montagu, 1952), yet there still is not equality of educational opportunity for girls and women. This means that the ideal of equality of educational opportunity is not being realized, nor can it be realized until there are opportunities for education which are equal in every way for men and women. (ibid.)

The Second World War showed what women could do in the technical sphere, while in recent technological advances their services are being increasingly sought. Indeed, so great is the demand for well educated intelligent human beings that the resources of both sexes may have to be drawn on to the full extent.

If the needs of girls and women are to be met in the spheres of education and employment, and if women are not to be lost to the pool of ability (see "Human resources" in this section), adequate provision must be made for the interruption in a woman's career which arises as a result of her primary biological function.

Summary

- i. Different developmental rates of the sexes
 - a. Girls and boys mature at different rates.
 - b. This could result in there being a higher proportion of girls than boys in the "A-stream" in Natal.
- ii. Intellectual equality of the sexes
 - a. Women are intellectually equal to men in all fields.
 - b. Equality of educational opportunity cannot be realized until there are equal opportunities in education for girls and women.
 - c. Women are needed in the "pool of ability".
 - d. Provision has to be made for the maternity and maternal role of women.

Conclusions

- i. Research into the achievement of boys and girls at the time of differentiation is needed.
- ii. Separate norms in tests for pupils at this time may be necessary.
- iii. Girls are still not enjoying equal educational opportunities.
- iv. This lack causes a loss of human potential.
- v. In this age of technology and in view of the limited human resources the whole question of opportunities of technical education for girls needs investigation.

Suggestions

- i. An investigation into the difference in performance of the sexes at the time of differentiation should be undertaken.
- ii. Equality of educational opportunity should be provided for girls.
- iii. Research into the provision of technical education for girls should be instituted.

11. HUMAN RESOURCES

Demands for highly trained, creative minds are constantly increasing, and South Africa is not alone in its very grave shortage of educated manpower, although this shortage is a social phenomenon of fairly recent origin. (McIntosh, 1959.)

In Sweden a comprehensive investigation carried out in 1945 by Dr. Torsten Husén concerning the distribution of intelligence in the different groups in that country revealed that 33 per cent of the population have an intelligence quotient above 107. (Düring, 1951.)

McClelland (1942) estimated that, in 1942, 16.7 per cent of the total population would be successful in a senior secondary course, and that to raise the percentage above this would require an increase in variety and attractiveness of high school courses as well as far-reaching improvements in social and environmental conditions. (McIntosh, 1959.)

Biesheuvel (1952) calculated that the proportion in any population of men and women able to provide the leadership in industry, commerce, government and learning is probably about 4 per cent. From Labour Statistics of the I.L.O. (1951) he estimated that if South Africa intends to draw this 4 per cent elite from its European population entirely, then, according to 1946 figures for this country,

no less than 23 per cent of the working Europeans of both sexes should possess high-level professional, technical, administrative or managerial skill...

The shortage is permanent and must get worse unless we allow African ability to find its own level, either in an integrated economy or in a parallel development in African areas.

Whatever the logic of events will ultimately decide, for a long time to come the white population will have to carry the major burden. Its ability potential should therefore be assessed: for whatever is available must be utilized to the full, if a serious check to the nation's development is to be avoided. (ibid., pp. 120-121.)

Woolcock (1961) gives the intelligence quotient of 129 as the figure above which children who are intellectually gifted may be recognized. In addition, Torrance (1962) suggests that the

cut off point be an intelligence quotient of 120 on an individual intelligence scale and that measures of creative thinking should then be used to select the gifted group. Use of both measures is necessary because creative thinking ability cannot be equated with intelligence. (Torrance, 1962.)

In the sample of 1044 pupils who were the subjects in this research, there were 51 boys and 56 girls, i.e. 107 pupils (10% approximately) with an intelligence quotient of 120-129, and 19 boys and 21 girls, i.e. 40 pupils (4% approximately) (see Biesheuvel's 4% elite) with an intelligence quotient of 130 and above, an intelligence quotient of 145 being the highest recorded in this research in which the intelligence quotients were obtained on the New South African Group Test. If this figure is applied in a rough calculation to the number of pupils recorded in the 1960 statistical return for the Natal Education Department (Natal Education Department, 1961d) then there are the following highly able pupils:

	<u>I.Q. 120-129</u>	<u>I.Q. 130 and above</u>
Class I - Standard V (inclusive)	4229	1057
Standards VI - X (inclusive)	<u>1726</u>	<u>431</u>
	5955	1488

No special programmes appear to be provided for these pupils. This 14 per cent falls far short of the minimum 23 per cent stated by Biesheuvel (1952) to be required in the Republic.

The final total of intellectually gifted and talented pupils must be considerably greater than 1488, for it has not been possible to make even a rough estimate of how many talented pupils there might be, when to be talented means to perform at the 95th percentile or higher of their own peer group (nation wide) in the creative arts, such as music, art, dramatics, the dance, etc. (Woolcock, 1961.) Nor has it been possible to determine how many pupils there are with creative thinking ability.

Special and effective educational programmes for these students cannot be provided by the tucking in of an extra fold or two into the school curriculum, nor by casual regular means. (Woolcock, 1961.) What is needed is a change in the entire intellectual climate, i.e. a change from the present standards of anti-intellectualism and organization-man, and a realization that education is not independent of the more general social and cultural atmosphere. (Getzels and Jackson, 1962.) Too often teachers favour convergent or conforming pupils and fail to understand those who show creativity in their thinking, i.e. those who are divergent.

The President of the South African Council for Scientific and Industrial Research, Dr. S.M. Naude, is quoted as referring to the sombre fact that South Africa spends "not a brass farthing" on special education for above-average children. "To me, as a scientist, this seems to be an indirect but particularly effective method of national suicide." (Naude, 1962.)

The need to include women in the pool of ability has been discussed in this section under the heading "Education for girls".

One factor which must be kept in mind in deciding the pass mark is the present shortage of skilled manpower. Present-day conditions may justify the inclusion of more pupils who will fail in order to ensure that fewer pupils who will succeed will be excluded. On the other hand, it may be argued with equal justification that the teaching of large numbers of pupils lacking the ability and qualities necessary for success in high school may place an undue burden on teaching staffs already strained to the limit. (See Appendix G, "Cut off scores.")

In the Transvaal the percentage of pupils in each ability level in the secondary school are:

A - 20%; B - 30%; C - 43%; D - 7%.

In the D level are pupils who have an intelligence quotient below 80⁶ and are in special classes and/or schools.

6. In Natal pupils with an intelligence quotient of 84 and below are in special classes or schools.

In Natal the ability levels of pupils in schools are actually:

A - 62%; O - 30%.

no mention being made of pupils in special classes and in special schools. (Stander, 1962.) It should be remembered that in Natal pupils are not promoted from the primary school on age. This could mean that many of the less gifted pupils leave school at the end of the year in which they turn fifteen and so do not reach the secondary school. The percentage of less gifted children in secondary schools in Natal could be slightly lower than that in the Transvaal because the latter Province has an age limit in the primary school, and includes in the C stream pupils with an intelligence quotient range of 80-84.

Summary

- i. There is an increasing demand for highly trained, creative minds.
- ii. There is a limited pool of ability from which to draw such minds.
- iii. Creative thinking ability cannot be equated with intelligence, and an intelligence quotient of 120 should be the basis of further investigation with creative thinking measures.
- iv. In Natal there are approximately 1488 pupils with an intelligence quotient of 130 and above and 5955 pupils with an intelligence quotient of 120-129.
- v. The exact number of intellectually gifted and talented pupils in Natal is not known, but it appears to exceed 1488.
- vi. A few additional measures are not adequate to meet the needs of this group of pupils.
- vii. An effective method of national suicide is to neglect the above-average children.
- viii. In Natal 62% of pupils are in the "A" stream, while in the Transvaal there are 50% in the A and B levels together.

Conclusions

i. With the limited number of persons with high ability, and the increasing demand for trained high ability, it seems that steps should be taken to make the best provision possible for those pupils with such high ability.

ii. No special provision is made in Natal for its gifted pupils.

Suggestions

i. Steps should be taken to make the best provision possible for those pupils who are intellectually gifted, talented and those who have creative thinking ability.

ii. For such pupils an "A+" level (i.e. higher than and different from the present A stream), though of itself inadequate for meeting the needs of the gifted, should be introduced as a first step.

iii. Such pupils should be taught by superior teachers.

iv. Teacher training should include courses and practice in teaching on different levels, especially in one classroom, as well as in teaching the intellectually gifted, talented pupils and those with creative thinking ability.

12. INCREASING DEMANDS ON THE TEACHER

With the expansion of the three perimeters of teaching, viz. the teacher, the pupil and the subject matter, have come new concerns for the teacher. Modern practices aim at adapting instruction to the total wide range of ability in almost every classroom. (Morse, 1960.) Teachers have to attempt to assess individual needs, abilities, ways of thinking and to make accurate observations. For this latter task, says Burt (1962) they should be trained. They will also have to learn how to teach on two or three different levels of each subject, sometimes in one classroom. It appears that too much is being asked of the teacher under present conditions (Thomson and Jones, 1936) of greater knowledge required from training, study of the whole child (Watson, 1938), individuali-

zation of teaching, and large classes.

Teachers, too, are often regarded as pieces on the chess board of the educational system. (National Union of Teachers, 1958a.)

If, in addition to an already overloaded programme, primary and secondary principals and teachers are to do justice to pupils at the time of transfer, classes will need to be smaller, and additional clerical assistance will be necessary. (Fernig, 1956.)

With classes so large (see "Failure" in this section) too much is being asked of many teachers; with the long years of training and the great responsibility which rests on teachers, too little is being paid to all teachers.

Summary

- i. The perimeters of teaching are ever expanding.
- ii. Under present conditions too much is being asked of the teacher.
- iii. The fact that teachers are human beings is sometimes overlooked.
- iv. The added demands of differentiation and all that it involves necessitates some lightening of the teacher's task in some direction.
- v. With need for better training and more responsibility teachers deserve higher pay.

Conclusions

- i. More and more is required of teachers, not only in training, knowledge and skill but also in expenditure of physical energy. Money, alone, cannot compensate for these added demands.
- ii. Individualization of teaching is impossible where classes are too large.

Suggestions

- i. One of the first considerations of any educational system should be the mental health of the teachers for on it depends the happiness of the children whom they teach.
- ii. To those teachers who are particularly involved in the allocation of Standard VI and VII pupils to groups and streams special assistance should be given.
- iii. The number of pupils per teacher should be reduced.
- iv. The salaries of teachers should be increased.

13. RESEARCH

If a system of education is to be dynamic there is need for all educational institutions to be research-minded. (de Villiers report, 1948.) In 1948 the National Foundation for Educational Research in England and Wales was established by teachers to assist in co-ordinating inquiries and to undertake research of its own. Those who participated in this organization felt that the whole movement deserved to be widely extended. (Schonell, 1947.) The Transvaal Education Department has established its own research bureau. As long ago as 1952 the Superintendent-General of Education for the Cape Province expressed the need for such a bureau for Cape education. (Cape Province. Education Dept., 1953.) One of the functions of such a bureau would be to keep teachers up to date in research and developments in education.

Burt (1947) suggests that the local authorities should be free to experiment with different modes of school organization and school allocation according to the requirements of their own particular districts.

Summary

- i. Dynamic education without research is an impossibility.
- ii. The need for research and experiment has been felt and expressed in various educational systems.

Conclusions

Co-ordination of research findings and inquiry of its own is essential to any educational system.

Suggestions

- i. A bureau for research and educational measurement (Kotzee, 1956; Schonell, 1942) should be established to meet the needs of this Province.
- ii. Such a bureau should function within the Faculty of Education of the University of Natal.
- iii. It should share expenses and projects with the Natal Education Department to the benefit of both.
- iv. There should be investigation and small scale experiments, especially in connection with selection and streaming in secondary schools.
- v. Opportunities for research and study, within and outside the school, should be afforded to teachers.
- vi. Teachers should be encouraged and assisted to broaden their educational horizons.

SECTION D

METHODS, PROCEDURES AND TECHNIQUES OF SELECTION
USED IN TEN EDUCATION SYSTEMS

1. TABULATION

This section presents in tabulated form the methods, procedures and techniques of selection which are used in the ten systems of education which have been studied.

Table 8

Methods, Procedures and Techniques of Selection

Methods, procedures and techniques	Natal	Orange Free State	Cape	Transvaal	Scotland	England	Central African Federation	Netherlands	Norway	Sweden	Total
Examinations: Old-type	1					1			1		3
English									1		1
Essay						1					1
Oral						1					1
Entrance						1		1			2
Standardized tests:											
Intellig.		1	1	1	1	1	1	1	1		8
English					1	1	1				3
Norse									1		1
Arith.					1	1	1		1		4
Spat./Mech						1					1
Unnamed		1	1		1	1	1	1	1	1	8
Interest questionnaires						1					1
Measures of personality						1					1
Psychol. examination								1			1
Age		1	1	1	1	1	1				6
Estimates : Teachers		1	1	1	1	1	1				6
Heads		1	1	1	1	1	1				7
Preparation class								1			1
Exploratory year	1	1	1	1			1	1			6
Probationary class								1			1
Interview						1					1
Group observations						1					1
Panel procedures						1					1
Pupil's background				1		1				1	3
Contact between heads*					1						1
Record cards		1		1	1	1	1		1	1	7
Pupil's wishes		1					1		1	1**	4
Wishes of parents	1	1	1 ^x	1 ^x	1	1	1 ^x	1	1	1	10
Guidance				1						1	2
Total	2	9	7	9	10	10	11	9	9	8	83

* i.e. principals of primary and secondary schools.

** Pupils have the choice of course.

x Wishes of parents are paramount.

2. COMMENTS. SECTION D, CHAPTER II

i. The age at which a pupil moves to secondary education in each country is:

England	:	11+ years of age.
Scotland	:	12½ years of age.
Norway	:	13½ - 14½ years of age.
Central African Federation	:	12+ years of age.
Transvaal	:	13+ years of age.
Orange Free State	:	14 years of age.
Cape Province	:	12½ (16) years of age.
Sweden	:	12½ years of age.

ii. Among those countries in which age is one of the factors which determine promotion to the secondary school the Transvaal provides adjustment classes, the Cape and Orange Free State both have an exploratory year, the Central African Federation has two observational years, while Scotland stresses the need to combat retardation as never before. (Great Britain. Scottish Education Dept., 1955.)

iii. In her reconstruction plan, Holland is considering a bridge or "brug" year. The Central African Federation which has multi-lateral schools, or schools on the way to becoming comprehensive schools, has a time of adjustment or exploration. In the four provinces of the Republic which cannot have comprehensive schools (see introduction to this chapter) but which provide, more or less, one course for those who wish to attend a university, and another course for those who will not proceed to university, the first year in the secondary school is one of adjustment or exploration. The Transvaal has six months for exploration. England, Scotland, Norway and Sweden have no such year of exploration.

iv. Those countries which have a large number of different kinds of secondary schools, e.g. England and Holland, are most concerned with selection of pupils to a limited number of places in these schools and have tried many methods of selection. In those areas in the Central African Federation where the technical high school is a separate school and the number of places in it is limited, there is selection of the more intelligent boys.

v. All the systems studied, except Natal, include an intelligence test as one of the methods of selection. Sweden does not select in its comprehensive system.

vi. Standardized scholastic tests are used in selection by all countries except the Transvaal and Natal.

vii. An examination at the end of the primary period is used in England, Holland, Scotland, Norway and the Cape Province.

viii. Wishes of the parents are paramount in the Transvaal, the Cape Province and the Central African Federation; they are considered in Norway and in the Orange Free State. In England and Scotland parents have the right of appeal to the Secretary of State whose decision is final, while in Natal the parents may appeal to the inspector.

ix. Pupils' wishes are considered in the Orange Free State, the Central African Federation and in Norway, while in Sweden the pupils themselves choose their courses.

3. CONCLUSIONS. SECTION D, CHAPTER II

i. There is a marked effort in all the systems studied, with the exception of Natal, to ensure that all pupils experience at least some secondary schooling. Except in Natal, no pupil of over fourteen and a half years of age remains in the primary school. Even in the Cape Province this is usually the case, although the regulation there is that no pupil of over sixteen years of age should be in the primary school.

ii. When transfer takes place on age, some provision is necessary for the adjustment of retarded and backward pupils. This provision is specifically mentioned in the Central African Federation.

iii. Many systems of education are actively involved in the prevention of retardation and backwardness.

iv. Some countries (and here for the sake of brevity the Provinces of the Republic are included in the term "countries")

are trying to postpone selection until there has been a "try-out" experience in the secondary school.

v. Where different kinds of secondary education are provided in separate schools, and there is preference for and shortage of places in the traditional grammar/academic school, selection is highly competitive. This competitive selection is also apparent in regard to entry to the two technical high schools of the Central African Federation.

vi. Competitive selection emphasizes the need for statistically accurate methods of selection, i.e. marks are stressed.

vii. The intelligence test still seems to hold pride of place in many selection programmes.

viii. Many countries find the standardized attainment tests, especially those in English and in arithmetic, useful.

ix. The burden of selection is still, in many instances, placed on the primary school.

x. The people most vitally concerned in the outcome of selection are those who are seldom consulted, i.e. the parents and the pupils. Usually the parents are informed of the selection after it has taken place and their child has been placed in a stream. This is not the case in Scotland where the parents have to be consulted before the placing of their child in a specific course.

xi. The parents' wishes are paramount in three of the ten countries studied.

xii. Some technical high schools select the more intelligent boys.

xiii. Selection procedures, methods and techniques are used in various combinations.

xiv. Some countries still rely on one old-type examination.

xv. Norway is the only country which includes a separate test in a language which is not the home language of the pupil. In Natal the second language is included in the aggregate which the pupil has to obtain in the selection examination at the end of Standard VI.

xvi. The comprehensive school obviates the need for selection to the secondary school.

xvii. Comprehensive schools facilitate allocation of pupils to courses or streams.

In the following chapter a full description of these methods, procedures and techniques of selection is given, the value of each is assessed and suggestions regarding selection in Natal schools are made.

CHAPTER III

METHODS, PROCEDURES AND TECHNIQUES OF SELECTION

If our aim is to build free individuals capable of independent action based on the highest values human life knows, then our strategy of guidance and education must certainly be one which seeks constantly to aid individuals in self-knowledge and direction; and this cannot be done by experts consulting test scores only and exercising strong influence on individual scores at strategic points of decision.

R.H. Mathewson

In this chapter will be found a critical analysis of the methods, procedures and/or techniques which are being used for selection or allocation of pupils for the purpose of placing them in streams in secondary schools. The conclusions which have been arrived at as a result of this analysis and consequent suggestions are also given.

1. EXAMINATIONS

Every day of our lives each of us is assessing the abilities and character traits of every other person, and in the classroom the measurement of attainment, percentages, marks, tests, examinations, and 'pass or fail' form part of the educational system. (Vernon, 1960.) Examinations have, in fact, for so long been part of the stock-in-trade of the teacher, that their limitations tend, at times, to be overlooked, so that the value of their various forms in the selection of pupils for the secondary schools and/or streams in the schools needs to be assessed.

1. Old-type examinations

The phrase "old-type" is used to distinguish these tests from the so-called "new-type" of tests. Because the latter were "new" as long ago as the first two decades of this century, however, they are now more frequently known as "objective" or "standardized" tests. Old-type tests or examinations are subjective, i.e. they are dependent on the personal decision of the marker who sets the questions and assesses the answers in the test. They are not standardized, i.e. their relative degree of success or failure has not been determined on large samples of like pupils in the testing of whom there has been uniformity of procedure. (Anastasi, 1954.)

As a result of the movement in the nineteenth century of the scientific study of education, and of the theories of learning developed by Thorndike, the old-type of examination was challenged in regard to the subjectivity of its marking and criticized because it sampled so narrow a range of ability. (Vernon, 1957a.)

As early as 1888-1890 attention had been drawn by Edgeworth and Bryant to errors which were due to the idiosyncracies of examiners and their limitations in sensing differing degrees of merit. In 1897 Rice, in America, was interested in the differences in examination results from different schools. (Rice, 1912.) In the early 1900's Dearborn wrote of the variability in the range of marks given by different instructors in the same class and by different examiners within the same school system. (Vernon, 1957a.)

In 1928 van Veen and Kohnstamm voiced their criticism of the "old-type" (ouderwetsche) of examination because it assessed neither school progress nor the aptitude of school pupils. (van Veen and Kohnstamm, 1928.) The use in tests, which would carry weight beyond the confines of one school, of uncontrolled questions in reading, long examples in mathematics, and essay-type responses in English which are characteristic of the subjective and uncritical examining of three decades ago was deprecated by Fleming in 1946, because such a practice leads to unreliability of marking and subjectivity of educational standards. (Fleming, 1946.) McIntosh (1959, p. 154) writes:

Educational research has revealed the fallibility of examination marks too often for such a procedure

(i.e. a single mark scored in an examination used as a selection procedure)

to be allowed to pass unchallenged, although a child-like faith in 50 per cent as an examination pass mark is still held by many examiners.

ii. Essay-type examinations

As one of the "old-type" examinations, the essay-type of examination was included in the criticism made by the developing science of statistics and the application of scientific methods to education. Professor Vernon (1957a) gives a brief but adequate survey of the research on the marking of essays. Fifty years ago Starch and Elliott (1912-1913) showed the unreliability of essay marks. This unreliability is obvious in the following results from their research:

TABLE 9Discrepancies in Marking of Examination Papers

	No. of teachers who marked each paper	Range of Marks	Mdn.	Probable Error
Eng. (1st paper)	142	64 - 98	88.2	4.0
Eng. (2nd paper)	142	50 - 98	80.2	4.8

(Vernon, 1957a, p. 115.)

In Boyd's research in 1924, 26 essays were selected by 40 teachers as representative of all grades of attainment from several thousand compositions and were marked by 271 experienced teachers. Nineteen of the twenty-six essays received every mark, or every mark but one.

In 1941 Hartog found that when eight examiners marked one hundred essays by allocating marks under various categories there was marked lack of agreement on every category, including the category called "sense".

Wiseman (1949) reported a study in which it was found that when four independent markers used a general impression marking, and the aggregate mark was adopted as the final score, correlations as high as 0.946 and 0.910 were obtained.

The degree of stability of performance of the same candidates from one performance to the next was investigated by Hudelson (1923). His findings produced evidence of a nature comparable with the evidence of the research of Finlayson in 1951 and Vernon and Millican (1954) which was that there is a tendency to greater variations among pupils at different topics than between markers marking the same essay topic. In the light of the evidence which they reported, Yates and Pidgeon (1957) found that the use of a single essay as part of the main examination for all candidates does not appear to be justifiable.

Vernon concludes that it is feasible for the essay to be included in selection examinations, but that if a reliability

closely comparable to that of objective tests is to be achieved, it is desirable to have a minimum of three essays, each marked by three markers. (Vernon, 1957a.) He points out that the Moray House objective English test is a slightly better overall predictor of English than is the essay, but that there is still some disagreement among psychologists who favour, or oppose, the re-introduction of the essay into selection examinations.

McClelland (1942) found that a carefully set and corrected examination is the best basis for the prediction of a pupil's success in the secondary school. It should be noted that the whole of this examination was set and marked by one experienced examiner. (Vernon, 1957a.)

If emphasis is laid on the reliability and validity of assessment, objective tests will tend to be adopted as in the United States of America. If prime importance is attached to the development in candidates of the facility in synthesis which is required for answering the essay-type of question, attention must be devoted to the examiners' methods of assessment. (Petch, 1953.)

Vernon (1960) remarks on the care which is given in America to the development of scientific forms of examinations, and contrasts the 'conservative' reliance in Britain on essay examinations the weaknesses of which are notorious.

iii. Oral examinations

Experiments during the last ten years have shown that oral tests possess good reliability and yield promising correlations with later success. These are oral tests of a special objective type in which children give written as well as verbal answers. Not only are the questions carefully prepared but the answers are tabulated and assessed. This oral examination has developed from the interview. (Vernon, 1957a.)

iv. Entrance examinations

This kind of examination can consist of either old-type or objective tests and the remarks made in regard to each are then relevant to the specific part of this kind of examination.

Idenburg (1960) points out that such an examination has an undesirable "backwash" effect on the work of the primary school, which then tends to plan its programme to meet the requirements of the examination. Kandel (1955) and Watts, Pidgeon and Yates (1952) stress the fact that pupils should not be assessed on the basis of a single examination performance, even where the examination is supplemented in other ways.

Summary

i. Old-type examinations

- a. Where scientific quantitative universal comparisons are required, these examinations have no place; (Burt, 1921.)
- b. the marking is subjective;
- c. standards vary;
- d. results cannot be compared from teacher to teacher, or from school to school;
- e. their results are usually expressed as raw scores;
- f. they are unreliable;
- g. their validity has not been determined.
- h. McClelland found that an examination carefully set and marked by one examiner is the best basis for prediction.

ii. Essay-type examinations

- a. Detailed and exhaustive research has revealed the inadvisability of using examinations of this kind for selection or allocation programmes.
- b. If, however, three examiners each mark three essays for the pupil, there is high reliability.

iii. Oral examinations

Objective oral examinations possess good reliability, although a test in which answers may be written is hardly an "oral examination".

iv. Entrance examinations

If these are of the type which includes (i) and (ii), the same criticisms apply. In addition they may have a detrimental effect on the work of the primary school. A pupil's abilities should not be estimated on the basis of one examination only.

Conclusions

i. Old-type examinations have too many weaknesses for their inclusion in a selection programme. If they are to be used, however, "they should be constructed by persons with experience of psychometric techniques, tried out beforehand, and properly standardized on the test population." (Vernon, 1957a, p. 175.)

ii. If an essay is included in the selection examination at the very least all the essays should be marked by one examiner. It is far better to have three essays for each person marked by three different examiners.

iii. Objective oral examinations may be useful in border-zone cases.

iv. Entrance examinations written in the primary school are subject to all the limitations of (i) and (ii); in addition they may adversely affect the teaching in the school.

Suggestions

i. Unless the precautions which have been suggested by Vernon and are mentioned in the first conclusion are observed, old-type examination results should not be used for selection or allocation of pupils to groups, streams or courses.

ii. Essay marks may be included in such a programme if these are obtained from the results of three essays for each pupil and all the essays of all the pupils are marked by three examiners.

iii. An objective oral examination may be useful in borderline cases.

2. STANDARDIZED TESTS. i INTELLIGENCE. ii SCHOLASTIC

In a standardized test situation, the single independent variable is the individual being tested. (Anastasi, 1954.) There must be uniformity of procedure, including instructions, pace, environment, and many other subtle factors such as tone of voice and attitude of tester; there must be absence of interference by noise, interruption and the presence of persons other than the tester. In addition, apparatus and scoring must be fixed so that precisely the same test can be given at different times and places.

Standardized tests are also objective tests. A test is fully objective if every observer or judge seeing a performance arrives at precisely the same report; the subject selects the best of alternative answers (multiple-choice, or true-false) which all scorers can mark with a scoring key and agree perfectly on the result. (Cronbach, 1949.)

When it is realized that it takes three years to produce an objective test such as a "Moray House" scholastic test, it should also be realized that this kind of test should usually work better than conventional school examinations.

Use of scholastic tests enables comparisons to be made between results of different pupils, marks given by different teachers, and results obtained from different schools. They provide a common currency (Burt, 1921) for schools and an immediate, quantitative objective exactitude.

1. Intelligence tests

a. Development. Although the history of mental tests goes as far back as 1796, the origin of the intelligence test is associated with the name of Binet, who, in 1904, was asked by the Paris school officials to distinguish the genuinely dull. (Cronbach, 1949.) The Binet tests, as well as all their revisions, are individual scales which call for a highly trained examiner.

Group testing was first developed by Burt in 1911 (Stellwag, 1955) to meet the need to classify school pupils. It received

stimulus when a million and a half recruits had to be classified for the United States army in 1917.

During the 1920's the testing movement underwent a tremendous spurt of growth, and new kinds of tests were developed, so that in addition to the predominantly verbal reasoning tests, sometimes known as paper-and-pencil tests, performance and non-language tests were used. In the rush of gathering scores and drawing practical conclusions therefrom it was often forgotten that the tests were still very crude instruments; often the only thing expected of many of them was that they should have a high correlation with the "Binet". (Biesheuvel, 1952.) With the failure of the tests to meet unwarranted expectations, scepticism and hostility toward all testing often resulted. (Anastasi, 1954.)

The original tests were selected because "as the statistical evidence showed, out of the whole range of cognitive abilities they furnished the highest correlations with the general cognitive factor." (Burt, 1962, p. 20.) The term 'intelligence' "was originally adopted as a convenient shorthand name for a well-defined concept, namely, inborn, general, cognitive capacity." (ibid.) The present generation of psychologists now generally employs the term 'intelligence' to designate either present efficiency, or some definite test measurements. This change of measuring has resulted, not unnaturally, in a considerable confusion in the popular mind, so that "there is much to be said for eliminating the word altogether from psychological discussion." (Burt, 1962, p. 17.)

Not only is there divergence of meaning of the term 'intelligence' between the psychologists of the early 1900's and the present time, but there is divergence of opinion on psychological traits of the human being. Anglo-American psychologists have a tendency to believe that personality can be divided into various elements, which are capable of measurement; the continental psychologists, on the other hand, try to see personality as a whole. (Mackinnon, 1944.)

The assumptions on which the practice of intelligence testing was based have been disturbed by the refined analytic techniques now available (Biesheuvel, 1952) and it has gradually come to be

recognized that, although intelligence tests were originally designed to estimate the individual's 'general intellectual level', most of them were quite limited, and the term 'intelligence test' was a misnomer. It is becoming more general practice to designate those tests which during the 1920's would have been called 'intelligence tests' by some term such as 'scholastic aptitude tests' (ibid.) and/or 'general classification and screening tests'. (Anastasi, 1954.)

Vernon (1957a, p. 173) states: "It would be preferable to abandon the terms 'intelligence test' and 'I.Q.' in 11+ selection, and to substitute, e.g. 'general educability' or 'academic (or other) aptitude' tests."

Not to add to the complexity of the problem by, perhaps, erroneous reformulation because of divergent use of words, it has been deemed wiser to introduce frequent quotation in this section.

b. Intelligence tests and the measurement of innate capacity. Binet himself never considered that his tests measured innate capacity alone. (Burt, 1921.) The M.A. "is also an index, largely though not perhaps mainly, of the mass of scholastic information and skill which, in virtue of attendance more or less regular, by dint of instruction more or less effective, he (the pupil) has progressively accumulated in school." (ibid., p. 194.)

In 1947 Mursell wrote that the results of mental measurement cannot be isolated from the total circumstances of life that surround and affect the persons tested, and invariably reflect them. Fleming (1958) says that within limits set by organic inheritance the educational response of pupils is related less to biological maturing than to their educational environment and circumstance and to their own historically-conditioned responses to that environment and circumstance, while Cronbach (1949), has pointed out that no test can measure anything but 'here-and-now'.

McIntosh (1959) says that the centre of the storm of controversy which has raged round selection has been the Intelligence Test. This has been largely because it has been assumed that this test measures only "innate capacity", and a low intelligence quotient, therefore, hurts one's ego and reflects discredit on one's

ancestry, so that one's emotions become involved.

c. Constancy of intelligence quotients. "It is unfortunate that educators have been allowed to gain a somewhat exaggerated notion of the degree of stability of the I.Q." (Vernon, 1957a, p. 104.)

One of the reasons why the intelligence quotient has remained relatively stable in the majority of cases is that the general psychological environment in one conventional school does not differ enormously from that of another conventional school.

The intellectual level that a child "reaches at any age is affected considerably by the kind and amount of intellectual stimulation that the environment has provided up to that age. This level is fairly stable under normal conditions of upbringing." (Vernon, 1940, p. 156.)

Research on variation of intelligence quotients on retesting listed by Biesheuvel (1952) reveals significant results:

TABLE 10

Variation of Intelligence Quotients on Retesting

Year	Investigator	Range of variation
1919	Terman	10 or more points
1926	Hildreth	Occasionally over 40
1930	Brown	Sometimes over 30
1938	Neff	Never less than 20 points
1944	McIntosh	10, 9 and 12 points

In 1940 Anderson found that correlation between the tests for
 fifteenth and sixteenth years was .901,
 seventh and eighth years was .735,
 seventh and sixteenth years was .582.

Biesheuvel states that a particular intelligence quotient at age seven years stood for something rather different from what the intelligence quotient at age sixteen years indicated, and that what was being measured gradually changed its character with time. (ibid.)

The tests of intelligence are often not strictly comparable at different age levels and are, in any case, subject to errors of measurement. This, too, would contribute to the instability of the intelligence quotient. (Super, 1949.)

Change in the intelligence quotient of a child can take place. Inhelder (1956, p. 92) states: "The I.Q. of 70 can in certain cases mask either a normal process unfolding slowly or a pathological process tending towards an early halt."

It is outside the scope of this work to discuss causes of change or methods of improving the intelligence quotient. Because it has bearing on the suggestions made in Part I, Chapter II, Section C, however, the work of Dr. P.H. Boshoff should be mentioned. (Letter to me, 12/1/62. See Appendix C.) In his letter Dr. Boshoff, one of the leading ophthalmic surgeons of this country, describes treatment of three mentally defective children and one severely retarded child for allergic conditions of the eyes. The mentally defective pupils "must have had oedema of the brain of allergic origin" and they responded so well to the treatment that each subsequently has had a normal school career. The pupil who had been severely retarded had reached Standard X when the letter was written.

The intelligence quotient is, however,

sufficiently stable to make possible useful predictions in the majority of cases over the period of primary or of secondary schooling. Yet it is also likely to fluctuate so widely in a minority that rigid segregation or streaming by I.Q. would be quite unjustified. (Vernon, 1957a, p. 104.)

d. Intelligence and educational attainment.

There is no hard and fast distinction between intelligence and educational attainments or acquired information ... Actually there is always a very close correspondence between intelligence test scores and all-round educational standing (though less close with marks in any particular subject). (Vernon, 1957a, p. 107.)

Almost 30 years ago Kohnstamm put forward the view "dat de intelligentie het best beoordeeld kan worden op grond van opgaven waar zij ex officio ingeschakeld wordt en dat is o.a. het doodgewone schoolwerk." (Stellwag, 1955, p. 160.)

Between intelligence test scores and school achievement there is a marked positive relationship (Mursell, 1947), while many of Binet's tests are tests of school attainment. (Burt, 1921.)

Stellwag (1955) writes:

De intelligentie-groep-en-schooltests verschillen nòch in vorm nòch in inhoud zodanig, dat ze als twee verschillende categorieën kunnen worden beschouwd. (p. 144.)

Men zou dus met goed recht kunnen zeggen dat de intelligentietest ook een achievement-test is, dus een schoolvorderingstest met een bijzonder karakter. (ibid., p. 142.)

A better way of looking at intelligence and attainments is to say that the former refers to the more general qualities of thinking - comprehension, level of concept development, reasoning and grasping relations - qualities which seem to be acquired largely in the course of normal development without specific tuition; whereas the latter refer more to knowledge and skills which are directly trained, and whose acquisition and retention depend more on the person's interests and on his personality traits such as industriousness. There is no sharp dividing line between them. (Vernon, 1940, p. 157.)

The difference between intelligence and attainment tests is one of emphasis rather than of purpose, the intelligence test covering a wide range of behaviour, the attainment test being restricted to cover behaviour that has resulted from specific teaching in a specific subject. (Garrett, 1959.)

If an intelligence test is intended as a measure of aptitude for learning (i.e. scholastic aptitude in a general academic course of education) then the test must cover a "wide range of behaviour, and employing verbal, numerical and perhaps abstract reasoning items."

(Pidgeon, 1961a, p. 90.) It would be more appropriate to call such a test a "scholastic aptitude test". (ibid.)

Vernon (1957a, p. 99) says that "different mental tests, with varied form and content, do measure somewhat different factors over and above 'g' and their separate 's's' or specific elements." He points out that no one should expect to be able to tell by merely looking at a test what abilities it involves, more particularly when such a test has been constructed for examining the mentalities of children.

e. Environmental influences. McIntosh (1959, p. 101) states that the standardized group intelligence test was developed "largely by Sir Godfrey Thomson with the express purpose of giving every child an equal educational opportunity." The aim of this test was "to discount the advantages of a large school with individual attention and special coaching and to devise a selection procedure which gave equal, or almost equal, chances to an unprepared candidate." (Vernon, 1957a, p. 23.) "These psychological tests favour the gifted boy with poor advantages, rather than the rich boy with gifted tutors, and are therefore essentially a democratic method of selection." (Thomson, 1921.)

Vernon (1940, p. 158) states that -

even though we must admit that intelligence and I.Q. are only partly innately determined, it is still true that they give better indications of capacity for acquiring further education than do present attainments alone. Intelligence tests are more fair to children from remote rural schools and others whose schooling has been affected, e.g. by absences, and to children of inferior background; although all these factors themselves do have adverse effects on the I.Q.

Research has shown that those pupils who have relatively low attainment are usually handicapped by poor home, and/or poor school environments (including ineffective teaching), poor physical health or emotional maladjustment or a combination of one or more of these. (Burt, 1937a; Schonell, 1942.) (See "Pupils' background" in this chapter.)

These three statements reflect the trend from acceptance of the almost exclusive influence of heredity to the theory which

prevails at present, namely that factors, both in the home and the school, affect the intelligence which intelligence tests attempt to measure. (Schmidt, 1960; Vernon, 1957b.)

The effects of heredity and environment are so inextricably intertwined that their relationship is not regarded as being "either--or" but rather an interaction which is more that of multiplication than addition. The individual's characteristics are thus regarded more as a product than a sum because a slight variation in environment interacting with a slight variation in heredity can result in a very considerable difference in the characteristic concerned.

Anastasi (1958) describes, among others, the study carried out by Husén in 1951 on 722 young men. The scores on intelligence tests of these men were compared with their scores obtained ten years earlier while they were in the primary school. It was found that those men who had had least education showed a loss of intelligence quotient while those with more education showed a gain of intelligence quotient, the gain being greatest in the group with the most education. A longer period of education was associated with increasing intelligence quotients.

In an analysis of the same data Husén (1950) also found that the total amount of education showed a correlation of .61 with the initial test score and .80 with the final test score. This higher correlation of the second coefficient is further evidence of the direct effect of further education upon intelligence test scores.

Ramphal (1961) reviews other research which, too, provides evidence that the amount of schooling has a favourable effect on mental growth. That this should be so is obvious in the statement by Bindra (1956) to which reference is made in this chapter in the section "Educational opportunity", i.e. the brain has to be constantly bombarded by sensory stimulation if it is to develop normally.

It may be that some subtle qualities of the classroom climate and the teacher's personality contribute as much to the intelligence of primary and secondary pupils as do the particular topics

which are taught or the techniques of teaching. It may be that these subtle qualities contribute even more than do the topics and techniques in the classroom. (Vernon, 1958.)

f. Interpretation of results. It would seem that the more closely the content of the intelligence test approaches the content of subjects taught in school the less likely is the intelligence test to be fairer to children from remote rural schools and those whose schooling has been affected by their absences from school and inferiority of background, such fairness, Vernon (1940) says, being the advantage of an intelligence test.

If these tests (I.Q. tests) are regarded as tests of academic aptitude, or ability to profit from an academic type of education, then the usefulness of the test score is not lessened although the criticism (i.e. the tests are not reliable tests of innate intelligence in that the ability to work them is affected by education and environment generally) has less point. (Lovell, 1958, p. 48.)

An intelligence test score, however, no more estimates maximum potential than does an attainment test score. (Pidgeon, 1961b.) Intelligence tests do not yield measures of capacity; they do not and cannot indicate the true limits of performance in actual attainment (ibid.), and there is no justification for the argument that a more fundamental measure of potentiality is provided by mental age than by other kinds of assessment. (Vernon, 1960.)

A score on an 'intelligence' test could be regarded, but only with due caution, as indicating the average level of performance in the wider area of intelligent behaviour covered by the test; and being an average it cannot indicate the score to be expected in any specific (attainment) test in that area. (Pidgeon, 1961b, p. 42.)

"The standard error of measurement should always be very real to the test interpreter. An I.Q. of 90 should always signify to the teacher 'I.Q. somewhere between 80 and 100'." (Thorndike and Hagen, 1955, p. 239.) In addition, data furnished by tests should always be supplemented by information gained by systematic observation; and for this task teachers will need to be trained. (Burt, 1954; 1962.)

It may seem to be a legitimate conclusion from the above account that if 'intelligence' tests are not of any value for measuring 'educable capacity' they have no use at all.

To anyone accustomed to the 'capacity' theory of intelligence and who has attempted to use the difference between 'intelligence' and attainment test scores to reveal the 'under-achievers' such a conclusion may appear inevitable. Certainly it is the present writers (sic) opinion that it is better to abandon completely the use of such tests rather than to use them in the wrong way. Far better that attempts should be made to discover the difficulties of all non-readers and to explore every possibility of teaching them to read without recourse to 'intelligence' testing, than to abandon all efforts for some of them because they apparently reveal an innate dullness by obtaining very low scores on 'intelligence' tests. (Pidgeon, 1961b., p. 40.) (Further reference to this subject is made in "Record cards" in this section.)

The belief that scores on 'intelligence' tests can indicate the level of performance to be expected in attainments may well have the effect of keeping the attainments of some below what they could be; once a child is found to be working according to capacity there is a danger that no further efforts will be made to improve his attainments, whereas all children should be taught to act and think intelligently in all situations, in or out of school.

g. Test content. Pictorial material can be employed to measure verbal comprehension. (Vernon, 1960.) In addition, individuals may employ different methods for performing the same task, e.g. a problem involving spatial contents (geometric forms) may be solved by some subjects through spatial visualization and by others through verbal reasoning. Bradway and Thompson (1962) found that verbal items predict both verbal and performance adult ability better than do non-verbal items.

Pictorial performance or abstract non-verbal tests with no v-content - while excellent for experimental research purposes where it is desired to isolate a non-verbal g-factor - are of relatively little educational or vocational value. However, there is some evidence that non-verbal group tests may be rather more predictive of ability in technical and scientific subjects at the secondary stage than are verbal tests. It is particularly unwise to use them as a criterion of educational potentiality. (Vernon, 1960.) Their use for scholastic purposes should be avoided. (Vernon, 1958.)

Non-verbal tests, consisting of problems based on pictures, abstract diagrams or concrete (performance) material are fairer

to the verbally handicapped but cannot be considered as giving a truer measure of innate ability. (Vernon, 1940.)

An individual's performance on different parts of such a test (i.e. an intelligence test) often showed marked variation. ... Test users, and especially clinicians, frequently utilized such intercomparisons in order to obtain more insight into the individual's psychological make-up. Thus not only the "IQ", or other total score, but also scores on subtests would be examined in the evaluation of the individual case. Such a practice is not to be generally recommended, however, since intelligence tests were not designed for the purpose of differential aptitude analysis. (Anastasi, 1954, p. 14.)

h. Tests of different abilities. If intra-individual comparisons are to be made, tests are needed which are specially designed to reveal differences in performance in various functions. The more recent development in testing is the designing of differential aptitude tests, e.g. verbal reasoning, numerical ability, abstract reasoning, space relations, mechanical reasoning, clerical speed and accuracy, language usage. (ibid.)

It is still a very difficult problem to differentiate abilities along different lines by means of objective tests. (Vernon, 1960.)

There is very little evidence that tests of these alleged components (Guilford (1956) claims to have broken down intellectual capacity into over forty factors) of high-grade intelligence do link up with abilities for different college courses or careers any better than do general scholastic aptitude tests. (ibid., p. 24.)

(For further discussion of factor analysis see Anastasi, 1954; Burt, 1962; Cronbach, 1949; Guilford, 1962; Vernon, 1960.)

i. Creative thinking abilities. The work of Getzels and Jackson (1962) and of Torrance (1962) who adopted some of Guilford's measures demonstrated that the creative thinking abilities are apparently as important as those measured by traditional measures of intelligence in educational achievement.

Torrance (1962) shows that, on the population on which he and his associates are working, i.e. seven educational groups ranging from Grade I to Graduate class, they would miss about 67 per cent of the upper 20 per cent on creative thinking, if they were to rely

upon the traditional measures of intellectual promise.

Investigators have been insisting for years, to little or no avail, that tests of creative thinking should be used together with traditional measures of intelligence to identify and guide the development of intellectually talented individuals.

To discover "gifted pupils", i.e. not only those who are intellectually gifted, but those who are "talented", it is necessary to select all pupils on a broad basis, i.e. intelligence quotient of 120 and over, then to refine the selection by using tests of the creative thinking abilities. (ibid.) The intelligence quotient should be determined by the use of an individual test. (Woolcock, 1961.)

j. Future of tests. Burt (1921) has said that tests should be regarded as the beginning of the examination of a school child, while McClelland (1942) suggests that the present intelligence tests should be replaced by some kind of composite test which would include English and arithmetic and which would be free from the evils of external examination.

The suggestion is that mental testing should move towards greater differentiation, and that measuring instruments of more diversified kinds and for more diversified purposes, capable of dealing better with the immense variety of human mentality and development, should be constructed. (Mursell, 1947.)

In 1955 Stellwag wrote:

Naar goede beoordeling kan zeer zeker gestreefd worden door een goede examenteknik, en door het voorleggen van opgaven die meer kanten van de intelligentie tot hun recht doen komen dan uitsluitend het abstract-logische element. Waardering moet niet alleen berusten op het principe van het percentag passing, maar een qualitatieve analyse der prestaties, i.c. der denkhandelingen, moet in het onderzoek mede opgenomen worden. (p.144.)

Dr. Kuiper was in deze jaren tot de conclusie gekomen (Med. No 7), dat de intelligentie-tests weinig prognostische waarde hadden en dat een test voor logisch denken niet te vinden was, zeker niet een — zo meent Kohnstamm — die „ het maken van juiste gevolgtrekkingen uit enige gegevens en het inzien van de onjuistheid van verkeerde gevolgtrekkingen zou kunnen toetsen ". (ibid., p. 188.)

More research is needed in order to develop a wider range of aptitude, attainment and other tests as diagnostic tools for twelve- to sixteen-year old, as well as for ten- to eleven-year old pupils. (Vernon, 1957a.) There is no need to confine ourselves in the scholastic field to

the rather stereotyped and narrow range of types of item conventionally included in intelligence tests. Better predictions might be obtained from tests aimed at different kinds of reasoning, flexibility of mind, critical judgment, original thinking, and other partially distinguishable intellectual faculties. (Vernon, 1958, p. 5.)

k. The new south african group test.

(1) Content

In regard to the original form of this test which I have used frequently in the course of my work mention must be made of the following facts which appear to have bearing on the use of this particular test for purposes of selection in the secondary school. The test has two sections, verbal and non-verbal. The constructors of this test wished to be able to give an indication of the level of an individual's intelligence in general and to diagnose educational backwardness by a comparison of the verbal and non-verbal intelligence quotients. Vernon (1957a) has found, however, that the non-verbal intelligence test has relatively little value in the selection of pupils to grammar schools; and that the verbal intelligence test is by far the best predictor of even non-verbal performance. In his research on Indian pupils Ramphal (1961) found the verbal section of this test to be superior in educational prognosis to the non-verbal section, while Anastasi (1954) does not recommend intercomparisons between different parts of an intelligence test.

Because the non-verbal part of the New South African Group Test contains items on numbers, the manipulation of which is largely dependent on formal school work, and, at the same time there are arithmetical problems in the "verbal" part of the test, if a pupil is weak in arithmetic, his scores in both the verbal and non-verbal parts of the test will be reduced. Again, a weakness in both

reading and arithmetic could cause the scores on both parts of the test to be reduced, so that a specific weakness in either of these subjects would be obscured. These difficulties appear to vitiate the usefulness of the test as a diagnostic instrument.

On the non-verbal part of the test, too, it is assumed that if no "words" appear in the test it is non-verbal, e.g. in the English Senior A form, Test 1 contains the following item which is pictorially represented:

No. 17: aeroplane: propellor: fish: ? .

A fishtail B hook C anchor D wing E backbone.

Items 26, 29 and 30 are similar pictorial representations of words.

It is assumed that a printed symbol (i.e. aeroplane) is different from a pictorial symbol, whereas the difference is in degree, not kind, for both depend on experience and insight.

Vernon (1960) points out that pictorial material can measure verbal comprehension, verbal reasoning and/or spatial visualization.

In measuring intelligence one wants to assess what has been stored by the individual as well as his ability to perform or to manipulate ideas and concepts so as to produce new information, i.e. "what-he-can-do-and-has-done" as well as "what-he-can-do-or-be-made-to-do." Verbal tests measure the former, and performance tests measure the latter. For example, a vocabulary test proves not only that a child can make the finer distinction between "fragility" and "frailty", but that he has read and has come into contact with these words and found their meanings.

If a verbal test measures stored material, and the non-verbal test measures manipulative ability and the ability to produce new information, one wonders whether the division is not artificial.

Many of the verbal items, in the tests for both languages, appear to be similar to language work which is drilled in the schools. Ramphal (1961), too, states that the verbal section relies heavily upon schooling and that even the non-verbal section involves school knowledge. There are items which contain calcu-

lations in £.s.d., and pupils are now taught decimal coinage.

(ii) Two sets of norms.

This test has two sets of norms, one for the English language group, and one for the Afrikaans language group of the population.

The "non-verbal" items are identical for the two language groups, but the raw scores are converted by means of separate standardizations to yield non-verbal intelligence quotients which, in every case, benefit the Afrikaans-speaking group. The average credit is approximately 10 points. Identical performances, therefore, yield non-identical intelligence quotients.

Biesheuvel (1952, p. 132) states: "the mean intelligence test performance is slightly lower in the Afrikaans than in the English-speaking sections of the population", and, in 1960, that there is a difference in test intelligence between Afrikaans and English-speaking groups. (Biesheuvel, 1960.)

The National Bureau of Educational and Social Research has now produced a new form, "Intermediate G", of the New South African Group Test, with common norms for the two language groups.

There is only one form of this test; the age range for which it may be used is from ten to fourteen years; items have been selected from the forms A, B and C of the original test, and these are still grouped as verbal or non-verbal items.

From the manual of the test one learns that in the verbal items, those items which had equal validity for the Afrikaans and English versions of the test were also of nearly the same order of difficulty.

It seems, thus, that the new test has the same limitations in regard to test content as has the original test. In addition there is only one form, and no classification or grouping of pupils should take place on the result of one intelligence quotient, at least two being needed.

In 1960 in Natal there were 612 pupils of fifteen years and older in Standard VI. (See Table 2 in Part I, Chapter I.) With no age limit in the primary school it is reasonable to suppose

that because there are now at least as many as 612 pupils who are fifteen years and older there will be more than this number in Standard VI in 1964 when the school-leaving age is raised to sixteen years. These older pupils could not be tested on the Intermediate G form of the New South African Group Test which has an age range of ten to fourteen years; they would have to be tested on the Senior form which has separate norms for the two language groups. The norms of the Intermediate G form and those of the original tests are not comparable, so that the results in this wide age range in Standard VI could not be used for selection purposes.

Nothing is said in the manual about discrimination value. It has been suggested that items which show no difference between Afrikaans and English-speaking pupils or which show only a slight difference limited to five points either way are probably items which tend to minimize differences and are items of an odd type. Such items would impose an adverse difference on English-speaking pupils. (Biesheuvel, 1960.)

The predictive validity of this new Intermediate G form of the test has not yet been determined in regard to Natal schools.

In some schools in Wales no intelligence test is used in selection because of the language difference between that country and England.

For further implications see the following section, "Scholastic tests" and Part II, Chapter I.

1. The south african individual scale. Biesheuvel (1952, p. 122) states that the Individual Scale of General Intelligence, "which is based largely on Terman's and Burt's revisions of the Binet was standardized in its present form by the late Dr. M.L. Fick (1939)" and suffers from a standardization defect.

On the basis of this test, it is easy to be deemed superior, difficult to be found defective in South Africa. As the Individual Scale is the principal instrument for the diagnosis of backwardness, this is a serious matter which should be rectified without delay. (Biesheuvel, 1952, p. 124.)

It is understood that a New South African Individual Scale is being devised by the National Bureau of Educational and Social Research. Such a new test is necessary, especially if it is to be used in an attempt to discover "gifted pupils".

Research will be needed, too, in respect of the predictive validity of this test when used in Natal schools.

m. The use of intelligence tests in selection for secondary school.

(i) A verbal intelligence test was found to be the best single predictor (i.e. for grammar school success) among the tests and examinations used. 90% of local education authorities in England employ verbal intelligence tests. (Yates and Pidgeon, 1957.)

(ii) That such a test is one of the best individual measures for predicting success in academic courses and that its predictive value increases throughout the secondary school has been shown by the large volume of research on this topic. (McIntosh, 1959.)

(iii) It is inadvisable to use the results of a single test for allocating pupils. In the Fife Scheme there is ample provision for safeguarding the child against his being labelled with an intelligence quotient which is contrary to all other evidence of the child's innate ability. (ibid.) No decision should rest on the intelligence quotient alone. (Vernon, 1960.)

(iv) Their scope is more limited than is generally supposed even for the purpose of educational prediction. (Biesheuvel, 1952.) It has been shown that the correlation between the intelligence quotient obtained on the South African Group Intelligence Test and mean examination marks in six school subjects drops considerably from standard to standard in the secondary school. (Gouws, 1951.)

(v) Vernon (1957a) warns that care should be taken not to regard this evidence of the high predictive value of verbal tests at the age of eleven, as evidence of the value of other 'intelligence' tests for predicting future attainments.

(vi) All mental tests are not of equal merit, and an intelligence quotient of unspecified origin is woefully lacking in meaning as an item of information about a personality. (Shaffer, 1936.) An intelligence quotient should always be stated with reference to its origin, e.g. intelligence quotient on New South African Group Test.

English psychologists appear to vindicate the use of a verbal intelligence test in selection, because, writes Vernon (1957a, p.39) "the main basis of any segregation or selection must be general, all-round intellectual ability; and this is what we are, in fact, able to measure fairly effectively at 11 years." The particular tests or examinations used for selection at the present time are chosen mainly because they give the best predictions of later success in grammar schools or G.C.E. results. (ibid.)

If, however, we decided to adopt a less intellectualistic criterion of 'profiting from secondary education', we would doubtless find changes in the predictive value of our instruments. ... It is for society and its educational leaders, not for psychologists, to say whether modifications are desirable, and if so in what direction. (ibid., p. 40.)

Stellwag (1955) says that because school examinations do not explore (measure) growth, both qualitative and individual, it does not mean that they should be replaced by something which is not good either! She adds that now they (i.e. in the Netherlands) know what England does, without being unkind, they know what not to do!

Many countries, and particularly America since the Russians have achieved spectacular success in outer space, have become concerned at the neglect of the gifted, and numerous attempts are being made to define various kinds of "giftedness" and to develop measurements of such kinds of giftedness, and methods for its training. General interest in and concern with "giftedness" is revealed, too, in the 1961 and 1962 Year Books of Education, both of which are devoted to this topic.

In South Africa there are two intelligence tests which have been standardized on the white population of the country, viz. the Individual Scale of General Intelligence and the New South

African Group Test. The former is being revised, (see pp. 195, 196 of this work) and one form, Intermediate G, of the latter has been drawn up with new norms. (See p. 194 of this research.)

In 1959 the Director of Education in the Transvaal wrote:

Intelligence tests have always played an important role in the grouping of pupils and the guidance of parents, but the new S.A. Group tests had provisionally to be withdrawn from use since the National Bureau for Educational Research was not yet satisfied with the accuracy of the results obtained. (Transvaal. Education Dept., 1962, p.16.)

Summary

i. Standardized intelligence and scholastic tests

- a. These tests are objective, their validity, reliability and predictive validity are known.
- b. Their results are comparable outside of the class.
- c. Great care is given to their construction which takes about three years.

ii. Intelligence tests

a. Development

- (i) As standardized tests intelligence tests possess the virtues of such tests.
- (ii) The definition of "intelligence" has been very varied, so that confusion has resulted in the use of this term and in interpretations of the results of "intelligence tests".
- (iii) The term appears to have not only one, the original, meaning, i.e. "inborn, general, cognitive capacity", but a second, that assigned to it by the present generation, i.e. "present efficiency" or "some definite test measurements".
- (iv) There is much to be said for eliminating the word from psychological discussions and from the names of tests.

b. Measurement of innate capacity

Intelligence tests do not measure innate capacity alone.

c. Constancy of intelligence quotient

- (i) The intelligence quotient need not, and frequently does not, remain constant. Physical, emotional, intellectual, social, (including the school) and environmental conditions do affect the intelligence quotient.
- (ii) The intelligence quotient should not be used as a basis for streaming.

d. Intelligence and educational attainment

- (i) It is difficult to determine what an intelligence test does measure.
- (ii) Kohnstamm said that intelligence can best be judged in ordinary school work.
- (iii) Some intelligence tests have content similar to that of scholastic tests.
- (iv) The difference between the two is one of emphasis, the former covering a wider range of behaviour, the latter being restricted to cover behaviour that is limited to the results of specific training in a specific subject.

e. Environmental influences

- (i) Thomson in 1921 stated that these tests discount "school environment".
- (ii) An intelligence test does not estimate potential nor does it indicate the true limits of performance in actual attainments.
- (iii) School environment stimulates intellectual growth; schooling does matter.

f. Interpretation of results

- (i) A score on an intelligence test could be regarded, but only with due caution, as indicating the average level of performance in the wider area of intelligent behaviour covered by the test; and being an average it cannot indicate the score to be expected in any specific (attainment) test in that area. (Pidgeon, 1961b.)
- (ii) Data from tests should always be supplemented by information gained by systematic observation, for which task teachers should be trained.

- (iii) It is better to abandon the tests than to use them in the wrong way.
- (iv) Knowledge of an intelligence quotient can often keep attainments below what they could be.

g. Test content

- (i) Pictorial material may measure verbal comprehension, spatial visualization or verbal reasoning.
- (ii) Verbal items are better predictors of performance than are non-verbal items.
- (iii) Non-verbal group tests should not be used as a criterion of educational potentiality.
- (iv) Intelligence tests are not designed for differential aptitude analysis. Intercomparisons of the individual's performance on different parts of an intelligence test are not recommended.

h. Tests of different abilities

Differential tests are still a matter of controversy and experiment.

i. Creative thinking abilities

- (i) Traditional intelligence tests do not measure "creative thinking", but favour convergent thinkers rather than divergent thinkers.
- (ii) Tests of creative thinking ability should be used with individual intelligence tests, if the latter are to be used.

j. Future of tests

- (i) Further research and experiment are desirable in connection with mental measurement.
- (ii) Tests can only be the beginning of examination of a school child.
- (iii) Research is needed into the use of the New South African Group Test, including the new Intermediate G form of the test, before it is used in Natal schools for purposes of selection, streaming or allocation to any particular course in the secondary school.

- (iv) Sums on £.s.d. will have to be replaced by sums on decimal coinage. ¹
- (v) A new individual scale is needed if such a test is to be used in the selection of "gifted" pupils.

Conclusions

- i. Standardized tests are more reliable and valid than are "old-type examinations" and provide a means of comparison between pupils from different schools.
- ii. Research is needed into the adverse effect which such tests might have on teaching in the primary school, and into the development of improved tests.
- iii. Intelligence tests are still the focal point of much controversy, and it would be better not to use the term "intelligence" in the title of a test.
- iv. Since not all intelligence tests measure the same thing, the name of the test which has been used, or is under discussion, should be given.
- v. Although intelligence tests (unspecified) have revealed a high predictive value for "grammar school" success, it should not be concluded that they are equally successful in other educational situations.
- vi. Intelligence tests are found useful in England because they predict "general all-round intellectual ability" at eleven-plus.
- vii. It is not possible to assess accurately the predictive value of any technique of selection unless one knows what the criterion is of "profiting from secondary education".
- viii. Research is necessary on the predictive value of "intelligence tests" in relation to the criterion of "success" determined by the society and the educational leaders of Natal.

1. In the English Intermediate G form of the New South African Group Test no £.s.d. sums are included.

ix. It is better to abandon the tests than to use and interpret them in the wrong way.

x. Until the majority of people know what an intelligence quotient really means, how fallible the intelligence test is, and how the intelligence quotient can vary, it is wiser to keep the intelligence quotient of a pupil confidential. (See also "Record cards" in this chapter.)

xi. The view that schooling itself contributes to the development of intelligence has implications which are fundamental in any system of selection, and needs to be considered in conjunction with the statements:

- a. "individual differences existing at the time of directing the pupil toward his new studies" will be crystallized by specialized education, (see Part I, Chapter II, Section C, "Types of children");
- b. "an undifferentiated environment in which the whole range of interests and abilities is represented, produces higher gain in pupils of lower scholastic aptitude than does an educational environment in which they have no contact with bright and school-motivated classmates", (see Part I, Chapter II, Section A, "Sub-grouping"), and
- c. "when problem-solving is the learning task in hand the brighter pupils are likely to be able to solve their problems faster by themselves." (See Part I, Chapter II, Section A, "Variety of goals of a group".)

Some of these implications are:

- (i) Separation of the less intelligent pupils from the brighter pupils could result in the former becoming relatively duller and the latter brighter.
- (ii) The best schooling possible is necessary for all pupils from the beginning of school, for lack of this can produce lasting effects on the intelligence of pupils.
- (iii) What is best for the duller pupils appears to be diametrically opposed to what is best for the brighter pupils.

It would seem that:

No. (i) is a further argument in favour of a common middle school. (See Part I, Chapter II, Section C, "General or special education".)

No. (ii) indicates more strongly the need for adequate guidance and teaching from the pupil's first day at school. (Part I, Chapter II, Section C, "Guidance".)

No. (iii) indicates "setting" as part of the solution to this problem; different kinds of grouping, too, are also indicated. (See Part I, Chapter II, Section A, "Suggestions" Nos. 1, 2 and 3.)

Suggestions

- i. Pidgeon's (1961a and 1961b) warning about the wrong use of the intelligence test should always be borne in mind.
- ii. It should not be assumed that if the "EA = MA" the pupil is really getting the best from her/his schooling.
- iii. An intelligence test should be used only by those who are trained to assess the validity, reliability and predictive value of any test used.
- iv. The result of more than one intelligence test should be used in any decisions taken about the pupil.
- v. New kinds of prognostic tests should not be used as part of any selection or allocation procedure until they have been tried out experimentally by psychologists concerned in pupil guidance.
- vi. There is need for further investigation into the provision of scientifically accurate standardized tests with common norms for both language groups.
- vii. If common norms are impossible of attainment, the situation should be accepted, as it is in some schools in Wales.
- viii. Until further research has been conducted on its predictive value in the selection and allocation of secondary school pupils to streams in Natal, it is suggested that the New South

African Group Test (of intelligence) should not be used for this purpose.

ii. Scholastic tests

These are standardized objective tests drawn up in specific school subjects. Burt included a set of group tests for elementary scholastic knowledge and skill (particularly in English and arithmetic) in his "ideal programme for selection at 11+". (Burt, 1943.) Scholastic tests in these two subjects are used in the programmes of selection by many of the local education authorities in England, some schools in Scotland, Norway, the Central African Federation, the Orange Free State and the Cape Province.

Yates and Pidgeon (1957) found that objective tests of attainment in English and arithmetic were better predictors of success in secondary schools than were their traditional counterparts.

Measures of English were found to be most efficient with the senior secondary courses and least efficient with the junior secondary courses, while measures of arithmetic were least efficient with the senior secondary courses and most efficient with the junior secondary courses. (McIntosh, 1959.) It should be stated that McIntosh referred to tests in English and arithmetic which were more closely allied to McClelland's (1942) qualifying examination than to the Moray House objective tests and which were developed over several years by research groups of teachers.

McIntosh (1959) found that the mechanical section of the arithmetic test is a relatively poor predictor of success in secondary education, but that it should not be omitted from the test battery. Straightforward tests of attainment have been shown to be useful in predicting a child's performance on a later occasion, but the prediction is likely to be specific to the subject tested. (Pidgeon, 1961a.)

Because many teachers have complained of the unfavourable "backwash" effect of the use of objective tests for selection on the teaching of English and arithmetic in the primary schools, newer types of test, "creative response" tests, in English,

(Vernon, 1957a) and different types of arithmetic tests are being developed. (Yates and Pidgeon, 1957.) The results of the use of these tests appear promising, but it is not yet known whether they are superior in validity to the more mechanical and rigid objective tests. (Vernon, 1957a.)

Bruner (1960) suggests that examinations, both of the "objective" and essay-type should be devised in order to emphasize an understanding of the broad principles of a subject.

It does not appear possible to arrive at a clear decision on the superiority of either old or new-type attainment tests. But if the old-type examinations are preferred, "they should be constructed by persons with experience of psychometric techniques, tried out beforehand, and properly standardized on the test population". (Vernon, 1957a, p. 175.)

In South Africa scholastic tests have been standardized by the National Bureau of Educational and Social Research, and new norms became available in 1961 for tests in English and Afrikaans. Arithmetic tests had not in 1959 been revised and contain sums on £.s.d. Although these tests have many uses, selection for a specific course or stream in the secondary school does not appear to be one of them. (See Part II, Chapter I.)

Summary

- i. Standardized objective tests in English and arithmetic are better predictors in secondary schools than are the old-type of examinations.
- ii. English tests are more efficient with senior secondary courses.
- iii. Arithmetic tests are more efficient with junior secondary courses.
- iv. Mechanical arithmetic, although a relatively poor predictor, should not be omitted from a selection battery.
- v. A test of attainment is likely to be a good predictor of success in the specific subject tested. (See, also, p. 323.)

vi. Standardized objective tests have an adverse effect on teaching in the primary school because they do not test "creativity".

vii. New creative response type of tests are being developed, but their superiority in validity to the older objective tests has not yet been shown.

viii. If old-type examinations are to be used for selection, they should be constructed by persons with experience of psychometric techniques, tried out beforehand and properly standardized on the test population.

ix. The scholastic tests standardized by the National Bureau of Educational and Social Research should not be used for secondary school selection. (See Part II, Chapter I, "The need for standardized tests".)

Conclusions

i. Standardized tests of English and arithmetic have a useful place in selection. Tests suitable for use in Natal schools should be constructed. For further discussion see Part II, Chapter I.

ii. The creative response type of test appears to be worthy of further research.

iii. In the setting of examinations and tests the need to "examine for understanding of the broad principles of a subject" should be borne in mind.

iv. Research is needed into the question of constructing standardized tests of equivalent difficulty for the two language groups if these are to be used in selection to secondary school courses.

v. This is all the more desirable because in "streaming" or in allocating the very dull to special classes, a combination of intelligence and attainment tests is likely to provide a better prognosis than either separately. (Vernon, 1958.)

Suggestions

i. Tests in English (home language) and arithmetic which have been standardized on the Natal syllabus should be used, among other criteria, in the selection or allocation of pupils to groups and/or streams in the secondary school. (See Part II, Chapter I.)

ii. The construction and standardization of similar tests for Afrikaans-speaking pupils should be undertaken.

iii. Tests of whatever kind in the other official language should not be used for purposes of grouping and/or streaming pupils, unless it be for instruction in that language.

iv. Language tests for grouping and/or streaming in the secondary school should be in the pupil's home language only. (See Part I, Chapter II, Section D, "Conclusion xv".) A pupil whose home language is neither Afrikaans nor English should receive special consideration, as should an Afrikaans-speaking pupil who is in an English-medium school and vice versa.

3. SPATIAL AND MECHANICAL TESTS

Reuchlin (1959) agrees with certain English investigators that the technical aptitude factor makes its appearance more or less at the age of fourteen years. Research shows that the contrast between the spatial-mechanical (K:M. or practical ability factor) and the linguistic factor does exist well before eleven, but that the tests for children at "11+" do not give such good prediction of later ability as do those for children at thirteen years of age. Some local authorities use group paper-and-pencil tests based on non-verbal spatial problems. All "K" tests are measures of "g" first and "K" second, so that not more than about one third of able pupils can be effectively allocated to grammar and technical schools at the same level purely on the basis of these ability tests. (Vernon, 1957a.)

Summary

These tests may be useful for pupils who are older than thirteen years of age.

Suggestion

Research on their use in selection in this Province should be undertaken before these tests are used in Natal schools.

4. TESTS OF INTERESTS

The psychological aspects of interests have been the subject of a great deal of study, particularly in the United States, where the most authoritative work has been that of D. Fryer, E.K. Strong, and D.E. Super. In spite of there being no consensus of opinion regarding the main problems, there appears to be some broad agreement on the utility of the tests known as "interest-questionnaires".

In France it has been found that it seems possible to distinguish as early as eleven years of age, a coherent series of interests. In Belgium, Brazil and Italy it has been found that vocational interests do not make their appearance until about the age of fifteen. It is still uncertain whether the interests shown at eleven will remain static or how they will develop. Research on this aspect is being undertaken by Mr. Reuchlin (1959) in France and in Sweden by Professor Husén (1959).

Strong (1943) found that interests change rapidly from those held at fifteen years to those held at about twenty-five years of age. Greater stability of interests on the part of those who decide early upon choice of vocation is suggested in the study by Dyer (1932). (See Part I, Chapter II, Section C, for discussion of "crystallization" under the heading "Types of children".)

Occupational decision-making, however, can be divided into three distinct periods:

- i. the period of fantasy choice in the latency period of between six and eleven years of age;
- ii. the period of tentative choice in early adolescence;
- iii. the period of realistic choice in early adulthood.
(Ginzberg, 1951.)

Sanderson (1954), too, refers to the instability of adolescent interest patterns which, although they do not change greatly over a relatively short course of time, vary with the age of the indivi-

dual and with the amount of time that has elapsed between the test and retest. This instability of the main interests of adolescents is frequently overlooked. (Valentine, 1943.)

Most of what is known about the role of interests in vocational adjustment comes from work with interest inventories or questionnaires (Super, 1949; 1957), the best known being:

- a. the "Strong Vocational Interest Blank" which is not to be used with boys below seventeen years of age except by a competent counsellor (Strong, 1943.);
- b. the "Kuder Preference Record", which is used with high school students, i.e. those of sixteen years of age, and
- c. the "Guilford-Shneidman-Zimmerman" test.

Not one of these tests has been standardized for South African children and the American norms used here would not give reliable or valid results. A standardization of the Kuder Preference Record for use in Natal schools is, however, being attempted at the University of Natal.

The C.V. Interest Questionnaire for Boys was compiled by Dr. J.F.A. Swartz and his co-workers for use as an instrument for vocational guidance by the Cape Education Department. In a critical analysis of this test, Mr. A.O.H. Roberts (then of the National Bureau of Educational and Social Research, Pretoria, now of the National Institute of Personnel Research, Johannesburg; 1955, pp. 79, 80) states:

7. Waste Material. - This method of firing hundreds of questions in order to guarantee a minimum number of hits on several distinct targets has become known as the "Buckshot" method. It is an essential part of such a test but has the disadvantage that it is very fatiguing to many testees, whose responses are thereby influenced towards the end. There is therefore little room for items which have no significance for any category, even in the rôle of "distractors", and none for complete questions which have no diagnostic value. We can find no significance for 68 items and for five complete questions included in this test (Part II, questions 2, 8, 29, 105 and 131).

Summary and Conclusions.

1. The form of this test (i.e. Preference) may have certain advantages over the Inventory or Rating forms but there can be

little doubt that it introduces significant spurious negative tendencies in intercorrelations, giving the appearance of dichotomies to unrelated pairs, and concealing the relationship of related pairs. There is evidence in support of the Guilford-Shneidman-Zimmerman criticism of this type of test. Strictly speaking it is applicable only when dichotomous material is being used. (To a lesser extent these criticisms apply also to the Kuder test.)

2. It follows that there will be dangers involved in drawing conclusions about a testee from the results obtained on this test. The interference effect will certainly cloud the issue as far as the second and later interests are concerned, and will probably affect the indicated extent of the first interest. Results are made more haphazard since little attention was paid to uniformity of comparisons.

3. The division of the field into twelve categories was over-optimistic and not altogether a happy one. One category (SO) is a "blanket" category, one (OP) is rather artificial and eight fall naturally into four pairs with little statistical or Face-Validity evidence for their being kept apart.

4. In this connection there is additional support for some of the author's findings and suggestions.

5. There are criticisms of the phrasing, content and Face Validity of some of the items, and of the inclusion of waste and unused material.

6. There are indications that the large body of useful material might be profitably re-examined.

I cannot conclude without paying tribute to the thorough and systematic presentation of the statistical results by Dr. Swartz - without these this analysis would have been impossible; also for his attempt, rare among test-constructors important though it is, at Validation.

In reply to "Some Criticisms of the C.V. Interest Questionnaire for Boys" J.F.A. Swartz (1955, pp. 80, 81) writes:

The C.V. Interest Questionnaire is an aid in studying the vocational interests of high school pupils which was standardised for official use by the Vocational Guidance Service of the Cape Department of Education. Since I left the service of this Department, I have unfortunately lost contact with the use and further development of the C.V. Interest Questionnaire.

As one who had a large share in the work that led to the standardisation of this questionnaire, I wish to state at the outset that the plans that were originally laid for its development included plans for continuous and long-range research. With the example set by, for instance, E.K. Strong,

It was realised that a great deal of research and possibly more than one re-standardisation would be necessary before an instrument of this kind could be regarded as, within reason, satisfactory. This means that I of all people who are interested in the development of the C.V. Interest Questionnaire should welcome Mr. Roberts's statistical analysis and the criticism to which it led him and this I do wholeheartedly.

While I will have to differ from Mr. Roberts in respect of what he makes of the facts of his analysis, I certainly do not want to quarrel with the facts themselves. On the contrary, I find myself in entire agreement with Mr. Roberts in regard to both the inherent limitations of this kind of interest questionnaire and some of the specific weaknesses of this particular instrument revealed by his statistical analysis of the intercorrelations between its twelve scales.

I know that the designers of the C.V. Questionnaire were not wholly unaware of the problem of interference and the likelihood of spurious tendencies. They were, however, without such evidence as Mr. Roberts places before us, not aware of the extent of interference.

On this count and also in response to Mr. Roberts's criticism in respect of waste material and some of his remarks on the Face Validity of the items, the C.V. Interest Questionnaire would appear to be in need of a thorough revision and re-standardisation. I do believe that the C.V. Questionnaire could be made much shorter without a loss to its effectiveness

(p. 83) In conclusion, I would thus advise those responsible for the further development of the C.V. Interest Questionnaire to welcome Mr. Roberts's criticism but not to be hasty in rejecting any of the 12 categories of this questionnaire and also not to make the mistake of assuming that such a questionnaire cannot be an effective instrument unless all interference between its categories is removed. (Swartz, 1955.)

In the answering of any interest questionnaire there is always the possibility of faking the scores. (Darley and Hagenah, 1955.) In addition, the assessments of children's interests at pre-adolescence as a means to more objective differentiation of suitability is extremely difficult because interests at this stage are unstable. (Vernon, 1957a.)

In discussion with teachers, parents and children I have found that parents and children very often regard interest questionnaires as tests which indicate ability in a specific direction, and the results on these questionnaires sometimes tend to turn the thoughts of adolescents in the direction indicated by a high score.

Interests of children are unstable because they are influenced by a number of factors besides the differences that naturally exist between one individual and another. A child's environment naturally provides a stimulus that itself provokes reaction, while at the same time it provides the material on which these reactions will be exerted. It is suggested

that it should not be left to chance to decide whether children have the opportunity to interest themselves in this or that activity but that they should be given regular instruction, either in school or by some other appropriate means, about the activities in which they can engage. (Reuchlin, 1959, p. 135.)

Last century Herbart (1892) called the first part of the educational aim "many-sidedness of interest", not to be confused with dabbling in many things. He wrote:

Every man must have a love for all activities, each must be a virtuoso in one. But the particular virtuosoship is a matter of choice; on the contrary, the manifold receptivity which can only grow out of manifold beginnings of one's own individual efforts, is a matter of education (ibid., p. 110); while the task of instruction is to create and develop the interest which arises from interesting objects and occupations. (ibid.)

Interest questionnaires are more useful in counselling than in selection (Super, 1949) where their main use is as a basis of discussion in which both parents and pupils should understand the limitations of such questionnaires. They should realize that the choice of subjects, a stream or a career should not depend on the pupil's score on an interest questionnaire.

Summary

- i. Research into the stability of interests of adolescents is in progress in France and in Sweden.
- ii. There seems to be considerable agreement on the instability of the main interests of adolescents.
- iii. The C.V. Interest Questionnaire, and to a lesser extent the Kuder Preference Record, introduces "spurious negative tendencies in intercorrelations". There will be dangers involved in drawing conclusions about a testee from the results obtained in

these tests.

iv. Both Mr. Roberts, who critically analysed, and Mr. Swartz who constructed the C.V. Questionnaire, emphasize the need for research on and re-standardization of this questionnaire.

v. Interest scores are liable to "faking".

vi. Scores on measurements of interests are frequently, and erroneously, regarded as indications of ability. This wrong assumption can influence the thinking and choice of the adolescent.

Conclusion

Certain tests of interest may be of use in counselling if they are used as a "talking-point" and are not regarded as indications of ability or suitability for a certain field or career.

Suggestion

Interest questionnaires should not be used in selection or allocation of pupils to streams in the secondary school.

5. MEASURES OF PERSONALITY

Qualities often listed on school records, and for the inclusion of which in selection procedures there is often a demand, are persistence, conscientiousness, perseverance and initiative. Teacher ratings of these qualities do not add anything to the accuracy of the battery used by McClelland (1942). There are probably two reasons for this. The first is that each pupil can, and often does, react differently to each teacher, and in each subject, and the second is that teachers' ratings are made under the 'halo' effect, so that those who are rated high on personality factors are frequently those children who show good attainments. (Vernon, 1957a.)

Objective tests of personality (Vernon, 1953) would have to be lengthy if a satisfactory level of reliability is required, so that they are not ever likely to be practicable for widespread application in selection. (Vernon, 1957a.)

Summary

Objective tests of personality appear to be too lengthy to be practicable for widespread application in selection.

Conclusion

These tests might be useful in discussion of borderline cases.

Suggestion

These measures of personality could be used in the consideration of pupils who are on the borderline.

6. THE PSYCHOLOGICAL EXAMINATION

This is an individual examination which is conducted by a psychologist. It may include an intelligence test, and an assessment of the initiative, speed, perseverance, and interest shown by the pupil as well as his reaction to a new environment. This procedure might be useful in individual borderline cases, but, like the measures of personality, it would be too time-consuming for wide use in selection.

Summary

Of possible value in borderline cases, this procedure is too lengthy for general selection programmes.

Conclusion

It would be useful in the consideration of certain borderline pupils.

Suggestion

The use of a psychological examination should be considered in decisions on those pupils who are on the borderline in selection programmes.

7. AGE

Chronological age has to be considered in different ways, viz. an "age allowance" at the time of selection, "transfer on age" from primary to secondary school, different rates of development of skills in the sexes and certain preferences of the sexes.

Where a pupil must, as a rule, write the examination with his age-group and where the highly competitive examination is held only once a year, as it is in England, an injustice is done to children who were born in different months of the year, unless an allowance is made for age. (McClelland, 1942.) Vernon (1957a), and Yates and Pidgeon (1957), too, emphasize the need for age adjustments to be made. McClelland (1942) found that not only was the calculation of an age allowance a very difficult problem but that such an age allowance made prediction less accurate, and in Scotland in those areas, e.g. Fife, where promotion is made bi-annually no allowance is made for age. (ibid.)

Although there is a lowered predictive value of a test battery due to age allowance, omission of such an allowance results in a maldistribution of awards throughout the age group, more of the awards going to the older pupils. (McIntosh, 1959.)

Yates and Pidgeon (1957) reported that at the age of eleven the gain per month of age was considerably greater for girls than for boys, and that at the age of thirteen the performance of girls on verbal intelligence tests and on some tests of attainment are significantly superior to those of boys. These differences may be due to earlier maturing of girls (Blair and Burton, 1951) and/or to cultural emphasis on the acquirement of certain skills. There is considerable uncertainty as to when and to what extent these differences eventually disappear. It would seem advisable, therefore, to treat boys and girls separately for the purpose of allocation to secondary school courses. If this is not done in the present system of streaming, proportionately more girls than boys are likely to be in the "academic" stream. In this research it has been found that on the "S-G" tests girls have a higher achievement in spelling than have boys. (See Part II, Chapter I, and Appendix E.)

It was found that differences in performance due to sex and age show up more often and better in unstandardized tests, than they do in standardized tests. (Yates and Pidgeon, 1957.) (Further reference to sex differences is made in Part I, Chapter II, Sections B and C.)

At pre-adolescence (eleven to fourteen years) boys should have the opportunity of associating themselves closely with men to a greater extent than is common in the home and in the school. (Blair and Burton, 1951.)

Only after the introduction of compulsory education did age differentiation become useful. (Zazzo, 1956.) It was after the introduction of compulsory education, too, that Binet suggested the definition of the various grades of mental deficiency in terms of mental years. (Burt, 1937a.)

The school has, it seems, marked the following stages: three, six, twelve, fifteen and eighteen years with which stages there is some kind of concordance of psychological studies.

Twelve years of age is regarded as a sort of culmination of a certain type of development and the hypothesis has been put forward that all the fundamental mechanisms have been acquired at the ages of, approximately, twelve to thirteen years, (Zazzo, 1956) but maturation is a gradual process; "boys and girls are not human caterpillars one year, and human butterflies the next". (Burt, 1954, p. 8.) As far as psychological grounds are concerned, the chief reasons for re-classifying children during the stage of early adolescence arises out of increasing intellectual differences between individuals rather than to any abrupt general change at or soon after the age of eleven. (Burt, 1943.)

Once the age of transition has been decided on many countries attempt to have in the secondary school all pupils above that age irrespective of standard passed. This is done in order to try to meet the needs of those who have matured physically and socially with their age-group, but have not kept pace in their attainments. (Blair and Burton, 1951.) It should, nevertheless, be left to the discretion of school principals in consultation with the parents not to transfer those pupils who are physically and socially too

immature for the secondary school, as well as to advance those who are very mature in these two respects. (Yates and Pidgeon, 1957.) Preservation of social values with such individual adjustment as may be needed has influenced the trend in the United States of America for a child to move ahead with his age-group. (Olson, 1960.)

Where pupils have been promoted on age, arrangements must be made for them to "catch-up" on school performance. (Shaffer and Shoben, 1956.) The Transvaal provides adjustment classes for such pupils, while Holland allows time for "catching-up". The Central African Federation tries to help the pupil to carry on from where he left off in the primary school if he has been transferred on age to the secondary school. (See Part I, Chapter II, Section B.) Retardation in the primary school will also need to be obviated. (van Wyk report, 1955.)

From a psychological point of view, secondary education might be considered as education for adolescent pupils, and thus should not start before pupils are twelve or even thirteen years old. If it is accepted that secondary education is for the adolescent, then it would seem that no pupils of, at the most, thirteen years of age should be in the primary school. McIntosh (1959) is of the opinion that it is educationally unsound to keep in the primary school those children who are older than twelve years.

A break between the ages of eleven and twelve in the education of all children was advocated in England in the report of the Hadow Committee. (Hadow report, 1927.) Although secondary education is for the adolescent and primary education is for the stages prior to that, the education of all children is regarded as a single continuous process.

The principle of a break between eleven and twelve years of age which was enshrined in the Education Act of 1944 was not evolved on purely educational grounds. The school-leaving age was fourteen, secondary education was to be a three-year course, and the move of pupils to the secondary school at eleven plus was an administrative necessity. (National Union of Teachers, 1958a.) As Burt (1954) says, the choice of age at which the pupil is trans-

ferred from primary to secondary education depends far more on administrative than on psychological factors. (Lowndes, 1955.)

From an organizational point of view educators in most countries regard a secondary course of less than three years as being of dubious value and urge the need of four or five full-time years, so that the upper age limit of full-time school should be seventeen or eighteen years. The compulsory school-leaving age in many countries is fifteen years, but in many of these again, there has been an extension of optional or compulsory part-time education. It seems that contemporary society has come to accept that the entire period of adolescence, and not just the first few years, should be considered as a period predominantly of guided growth.

It could be argued that if the minimum of secondary school education is three years, then, with a school-leaving age of sixteen years, all pupils of thirteen years of age should be in the secondary school. (Wall, 1955a.)

If it is desired that the secondary school should begin to provide vocational specialization, and if this is possible only in the latter half of the teens, probably not before the age of fifteen years, it would seem that a minimum of three years for the secondary course and two for the specialization is desirable. (ibid; de Villiers report, 1948.) This would mean raising the compulsory school-leaving age to seventeen years and making transition from primary to secondary school necessary at twelve years of age. (See Part I, Chapter II, Section B, "General or special education".)

Summary

Age allowance and transfer on age have to be considered.

1. Age allowance

- a. It was found by McClelland (1942), McIntosh (1959), Vernon (1957a) and Yates and Pidgeon (1957) that in selection by competitive examination at a certain age (eleven plus, twelve plus years) an age allowance should be made for the younger pupils.

- b. Girls mature earlier intellectually and have a higher verbal ability than have boys at this age, so that it is advisable to treat boys and girls separately for the purpose of allocation to secondary school courses. (See Appendices E, G, and H.)

ii. Transfer on age

- a. Boys at the age of late pre-adolescence/early adolescence need to associate more closely with men than with women.
- b. Twelve years of age is regarded as a sort of culmination point, although maturation should be seen as a gradual process.
- c. There is a gradual increase in intellectual differences between individuals during early adolescence.
- d. Transfer on age is an attempt to meet the physical and social needs of children.
- e. It should be left to the discretion of the principal, in consultation with the parents, not to transfer pupils whom they consider too immature physically and socially to benefit from the secondary school course.
- f. Time for "catching-up" and adjustment should be given for those pupils who are transferred on age.
- g. Secondary education is for the adolescent, i.e. it should commence somewhere between twelve and thirteen years, but not later than thirteen.
- h. The break at eleven plus in England is one of administrative expediency.
- i. From an organizational point of view a secondary course of less than three years is not favoured. The compulsory school-leaving age largely determines the "age of transfer" to secondary school.
- j. Specialization which appears to be possible from fifteen years of age seems to require a two-year course. This would necessitate transfer to the secondary school at twelve years of age.

Conclusions

- i. Age allowances for younger pupils appear to be necessary in the eleven plus examination in England where the age differences are in months. In Natal the spread in Standard VI may be eight years. (See Part I, Chapter I.)

ii. It may be necessary to take into account the earlier maturing of girls if there is competitive selection. (See Part I, Chapter II, Section C, "Education for girls".)

iii. There appear to be many psychological and sociological reasons for a pupil's being in the secondary school once he reaches early adolescence, i.e. \pm twelve to thirteen years of age.

iv. Transfer to the secondary school on age will involve re-thinking on the lock step age-grade (standard) type of organization which still exists in Natal schools. (This is discussed in Part I, Chapter II, Section C, "Failure".)

v. In Natal, where he may start school on his 7th birthday, a pupil could, if his birthday were late in December, turn fourteen years of age in Standard V.

vi. Principals and parents should be able to use their discretion in regard to "transfer on age limit".

vii. Organizational factors have played a large part in determining the age at which a pupil should be in the secondary school.

viii. Automatic transfer on age to the secondary school could affect the flow of pupils to the technical high schools in Natal.

Suggestions

i. Transfer of all pupils to the secondary school should take place at early adolescence. Exceptions should be allowed on the recommendation of the principal in consultation with the parents.

ii. In Natal, in the present circumstances, no pupil should remain in the primary school beyond the end of the year in which he has turned fourteen years of age. This will mean, however, that he will have two years only in the secondary school even when the school-leaving age is raised to sixteen years in 1964.

iii. Such transfer procedure, however, should be determined on psychological principles and not by administrative expediency.

8. ESTIMATES

Although skilfully constructed tests and examinations yield more precise measurements of attainments and skill and are less subjective than are assessments made by teachers, Yates and Pidgeon (1957) found that the best single prediction of subsequent success in secondary grammar school courses was provided by the judgements of the primary school principals, and that success was unlikely in the instance where the pupil was promoted against the head teacher's recommendation. (McIntosh, 1959.) Vernon (1957a) suggested that teachers' judgements and primary school marks can be made use of for many reasons.

The advantages of such estimates are that they are based on the performances of the children over a long period of time under normal conditions which are free from strain, while personality factors, intellectual promise and other qualities required for secondary school success are considered; no coaching is possible (Watts, Pidgeon and Yates, 1952); and there is no backwash effect on the work of the primary schools.

The disadvantages are that teachers tend to overrate the convergent, conforming type of pupil and there is the halo effect in allocating marks. (See "Old-type examinations".) McClelland (1942) found that teachers' estimates were generally too high; they tended to over-estimate the attainments of the weak pupils and to under-estimate those of the good pupils while the standard varied from teacher to teacher and from school to school.

McClelland (1942), Yates and Pidgeon (1957), Vernon (1957a) and McIntosh (1959) recommend inclusion in criteria for selection, head teachers' recommendations and numerical estimates in English and arithmetic, the numerical estimates to be scaled. McIntosh, Walker and Mackay (1949) and Petch (1953) deplore the fact that in some quarters, unfortunately, a devout belief in the sanctity of raw scores still lingers. Vernon (1957a) recommends scaling on a battery of intelligence and attainment tests, with a validity of around 0.90. This is a more accurate scaling than that on single tests with validities around 0.75. He states that it is essential to aim at a battery with the highest possible validity, because

if a single intelligence, or attainments, test were used, the numbers of places gained by small schools would show enormous chance variations. It should be realized that, however great may be the unreliability of quotas (i.e. numbers of pupils who gain places in the grammar school) derived from estimates and tests, the variability of teachers' standards is likely to be greater still Even inaccurate scaling is far better than no scaling at all. (ibid., p. 193.)

In a new scheme of transfer which is regarded by the Primary and Secondary Schools Sub-Committee (Campbell, 1956) as being a definite step forward the head teachers are given a greater share in the process of determining the secondary school to which each pupil ought to be transferred. It is felt that such a procedure will tend to enhance the importance of a pupil's achievement and progress in the junior school. (ibid.)

Summary

- i. The value of assessments of teachers is recognized.
- ii. These estimates should be scaled.
- iii. There should be a greater share by principals of primary schools in the decisions on transfer to secondary schools.
- iv. The pupil's achievement and progress in the primary school should count in any selection or allocation.

Conclusions

- i. Teacher estimates are invaluable if they are scaled.
- ii. The primary school should have some say in the future of its pupils.
- iii. Where pupils are streamed after a year in the secondary school, the estimates of primary teachers would not be of much use.
- iv. Some Standard VI pupils in Natal are attached to a primary school, and the use of primary teachers' estimates and primary school marks for the purpose of selecting pupils to the A- or O-level would mean that not all pupils in the Province were being treated alike.

Suggestions

i. Scaled primary teacher estimates should be used as one of the bases of grouping Standard VI pupils at the beginning of the secondary school.

ii. The possibility of using S-G Tests (see description in Part II, Chapter I) for the purpose of scaling the estimates of primary school teachers should be explored.

iii. The assessments of the principals of the primary schools should also be used as one of the bases of grouping Standard VI pupils at the beginning of the secondary school.

9. AN EXPLORATORY OR BRIDGE YEAR

The first year of the secondary school is regarded differently in different countries. The Netherlands suggest that in such a year all secondary schools should follow the same curriculum (Idenburg, 1960) in order to facilitate transfer of wrongly allocated pupils. In the Orange Free State this "bridge" year is to be used to give pupils an opportunity of sampling many subjects and to give teachers the opportunity of finding out as much as possible about the pupils by means of standardized tests and personal observation, so that the pupils may then be effectively advised on choice of courses in Standard VI. The first six months of the Standard VI year is an "adjustment" period which is allowed for testing in the Transvaal. In Natal Standard VI is regarded as an exploratory year.

The Norwood Committee (Norwood report, 1943) recommends that the lower school, i.e. catering for children of eleven to thirteen years of age, should have a common curriculum in all three types of school.

In both the Netherlands and in the separate high schools (of the so-called "tripartite" type) in England it would seem that if such an exploratory year, i.e. with common curriculum, were introduced allocation should really take place at the end of the first year in the secondary school, making unnecessary the early allocation at the end of the primary period.

This recommendation is based on the common assumption that, until actual trial has been made, it is impossible to say whether a particular child possesses, or does not possess, the ability required for studying those subjects of the secondary curriculum which are new to the pupil - foreign languages, abstract mathematics, or the various branches of natural science. (Burt, 1943, p. 138.)

The best way to establish their absence (i.e. absence of aptitudes for such subjects) it is supposed, "is to try out the pupils and observe their response to the teaching,..... pupils who after a year show little linguistic aptitude had better drop the foreign language." (Spens report, 1938, p. 182.)

Research, however, has proved that in the main, particularly at the ages of ten to sixteen, the ability to take up any such subject turns on the possession of a sufficiently high level of general intellectual ability.

If an intelligence test has shown that the child has an I.Q. of only 100, and therefore possesses no more than average (i.e. average of the whole population, not what a secondary school master would regard as average) ability - then he will only waste his time in trying to learn French or Latin grammar, in struggling with quadratic equations, or in endeavouring to determine the specific gravity of a given solid or the conditions of equilibrium upon an inclined plane. (Burt, 1943, p. 139.)

Both the Hadcw (1927) and Spens (1938) Reports state that retransference is exceptional, and that once a pupil has been placed he tends to remain in that school, stream or course.

Summary

- i. The first year of the secondary schools is regarded differently in various countries, as either:
 - a. a means of further assessment when there is a common curriculum in all types of schools, or
 - b. a means of "trying-out" courses so that the ability of pupils in certain courses can be assessed by their actual performance in them. Retransference seldom occurs.
- ii. In the Netherlands a common curriculum is provided in all types of schools, although there is selection in the previous year, i.e. in the last year of the primary schools.

iii. Research has shown that, particularly at the ages of ten to sixteen, the possession of a high level of general intellectual ability determines the ability to take up any subject.

Conclusions

i. An exploratory year is not necessary if it is being used to ensure try-out experiences.

ii. A "bridge" or "adjustment" period is necessary for those retarded and backward pupils who are transferred to the secondary school on age only.

iii. If there is no exploratory year the burden of selection and/or allocation may fall on the primary school.

iv. Sufficient flexibility, with opportunities of transfer for pupils who have been wrongly allocated, obviates the need for an exploratory year.

v. An adequate guidance programme throughout the school renders an exploratory year superfluous. (This has been discussed in Part I, Chapter II, Section C.)

vi. If such a year is to be really exploratory, the pupils should, during that time, explore more than two new subjects on one level. Teachers should be able to explore new methods, new content, new approaches to the subject, various levels of teaching the same and different pupils, and to observe, discuss and try to know and understand each individual pupil. They should explore, too, their own attitudes and approaches to Standard VI pupils and the kind of social group which their control produces in the classroom. (Jersild, 1955; Lewin, Lippitt and White, 1939.)

Suggestions

i. With adequate guidance in the primary school, sound principles of grouping pupils at the beginning of Standard VI, a common middle school and flexibility, an exploratory year should not be necessary.

ii. If such a year is to be retained it should be truly exploratory, i.e. the behaviour of pupils should be observed and interpreted. Pupils should be given the opportunity of studying a wide variety of subjects; different methods of teaching different children should be explored; different class groupings should be tried out; there should be experimentation with the success of different children with different teachers.

10. THE PREPARATION CLASS

Preparation classes (voorbereidende klasse) were used in the Netherlands as early as 1815. (Stellwag, 1955.)

Preparation classes are attached to the secondary school, and replace the last (6th) year of the primary (basis-onderwijs) school. Similar in certain respects to the probationary class, or "proefklas" (see next sub-section), this class lasts a longer time, at least one quarter, sometimes a year. Whereas the aim of the "proefklas" is better selection for and transition to secondary education, the preparation class was introduced primarily to ensure better preparation for the entrance examination and for the secondary school (M.O.) itself. (Stellwag, 1955.) It does, nevertheless, provide an important indication of the suitability of pupils for this type of education. Organization of preparation classes appears to differ from school to school; in one school the examination even preceded the preparation class! (ibid.)

Recent consideration of the revision of education in the Netherlands produced the "Memorie van Toelichting tot het Ontwerp van Wet". In this report the Minister of Education, Arts and Science, discussed the value of the preparation class in a programme of selection for secondary education, and objected to its use because it has meant that children have been withdrawn from the primary school too soon, and that there has been a difference in treatment of pupils who should all enjoy equal opportunities in the primary school. (Idenburg, 1960.)

Summary

- i. This class lasts for at least one quarter, sometimes for a year.
- ii. Its aim is to ensure better preparation for the entrance examination and the secondary school.
- iii. It varies from school to school.

Conclusion

With the added weight of objection by the Minister of Education to this procedure, it is obvious that the preparation class has no place in the educational system of Natal.

Suggestion

This procedure should not be used in Natal schools.

11. THE PROBATIONARY CLASS

A number of secondary schools in the Netherlands have generally had successful results with the probationary class or "proefklas" which can last from one to eight weeks, i.e. at least 16-24 lessons, before the beginning of the new school year. (Stellwag, 1955.) To obviate coaching for the probationary class there is no set syllabus, and different methods are tried out in various subjects. Pupils are observed and their adjustment is of prime importance. The arrangement of, and teaching in, such a class require the closest co-operation between the primary and secondary schools which are promoting and receiving the pupils. The entrance examination can be woven imperceptibly into this course.

It is recommended that enrolment in probationary classes should be restricted to those pupils concerning whom no agreement is reached between the heads of the primary and secondary schools concerned. (Idenburg, 1960.) Professor Stellwag (1955) expresses the opinion that, from an educational point of view, this kind of class offers the most effective method of selection and transition.

Summary

i. Pupils are taught and observed by various teachers using different methods for periods varying from one to eight weeks.

ii. The "proefklas" has been found to be an effective method of assessment of borderline pupils.

Conclusion

This procedure merits experimentation in Natal schools in the assessment of borderline pupils.

Suggestion

Experiment with this type of class in the consideration of borderline pupils might well be instituted in Natal schools.

12. THE INTERVIEW

The child, and sometimes his parents, may be interviewed by the grammar school head, or by a small panel of teachers. This method is used by certain local education authorities in England for border-zone pupils; it makes possible the collection of all the relevant data and the seeing of the pupil as a whole, as well as the assembling of further material on the child's interests and abilities and his parents' attitudes.

The interview puts considerable strain on the pupil, so that he may not behave characteristically. Interviewers may be impressed by, and attach value to, the wrong things. (Vernon, 1957a.) In addition doubt has been expressed regarding the consistency of interviewers and the validity of their judgements of personality. (Allport, 1937.)

In Northumberland the interview has been gradually changed to a more objective type of oral examination. (See this chapter.)

In his discussion of the difficulty of human assessment Allport (1937) points out the divergence of judgements by different individuals. This means that in any non-statistical assessment account has to be taken of the kind of person who makes the assessment.

Summary

- i. An interview is subjective and places a considerable strain on the pupil.
- ii. A standardized type of interview is used successfully in Northumberland.
- iii. Subjective assessments differ from individual to individual; the difficulty of judging others is discussed by Allport.

Conclusion

An ordinary interview is too subjective for use in a general selection programme.

Suggestion

Experiment with the type of interview which is used successfully in Northumberland might be introduced for the purpose of reaching decisions on border-zone cases.

13. GROUP OBSERVATIONAL TECHNIQUES

This is a different method of observed activity; it contains three main elements:

- i. Observed activity: The children working in groups of ten to fourteen are given various outdoor tasks, such as erecting a tent, making a 'bridge' with tubular scaffolding etc.
- ii. Observation of range of interests: The children are given free scope to do whatever they wish for 45 minutes in a classroom which contains a variety of different things: books, games, toys, material for drawing, painting, modelling, sewing etc.
- iii. Observation of lessons: The children are observed in a class while they are taught two separate lessons on material which is new to them. Both written and oral answers to questions are used.

Three observers to each group of children pose their assessments on grammar school suitability. The findings of follow-up

studies appear to support the rationale of the procedure, but it is too elaborate and time-consuming a method to be readily applied to more than about two hundred children a year. (Vernon, 1957a.)

Summary

- i. Pupils are observed in various work and group situations.
- ii. Three observers assess their suitability for grammar school.
- iii. This appears to be a sound but time-consuming procedure.

Conclusion

These techniques may be useful in considering borderline pupils.

Suggestion

The suitability of these techniques for the assessment of borderline pupils in the Natal situation might profitably be tried out.

14. PANEL PROCEDURES

Border-zone pupils are considered by a panel consisting of primary, grammar and modern school heads (not the primary heads directly concerned), the Education Officer, and, if possible, an educational psychologist. The Education Officer and educational psychologist have to control the use of non-quantified evidence for only in exceptional cases should subjective judgements outweigh more objective data. The dangers of being influenced by chronological age should also be borne in mind. (Vernon, 1957a.) In Wiltshire the panel visits each primary school and deals directly with the head. In the initial assessment in the City of Lincoln two intelligence quotients, two sets of scaled school marks (obtained when the pupil is ten plus and eleven plus years old) are used together with the school assessments of industry, health, character, general suitability and remarks on special aptitudes and handicaps. An independent

report is also made by a small interviewing panel, with the doubtful cases being further studied during visits to their schools. (ibid.)

The border-zone cases are followed up with great care and after each term in the first secondary school year or subsequently can be transferred to a grammar or to a modern school.

It is suggested by Vernon (1957a) that the psychologists may act as assistants to the Chief Education Officer and take responsibility for the tests or other methods of selection and for controlling the work of the panels. In addition, those psychologists with child guidance training may act as advisers to the panels rather than as selectors. They could examine children whose performance had been irregular or contradictory, who showed signs of maladjustment or minor physical handicaps which made the usual procedure invalid. They could then recommend the most suitable educational treatment. Full account should be taken of home circumstances.

Until further inquiry has been conducted into the results of such panel procedures it will be difficult to argue their merits convincingly against those Authorities which are satisfied with either purely quantitative, or less well controlled qualitative, procedures. (ibid.)

Summary

i. A panel consisting of the primary, grammar and modern school heads, the Education Officer and psychologist visits each primary school to consider border-zone pupils.

ii. The border-zone pupils are carefully followed up and retransference is possible.

iii. The psychologists, if equipped, can give advice on clinical matters.

iv. It is difficult to convince Authorities of the advantage of this procedure if they are already satisfied with other methods.

Conclusion

These procedures appear to be painstaking and efficient. The follow-up of all pupils, especially borderline pupils, is a necessary part of school guidance which has already been discussed. (See Part I, Chapter II, Section C.)

Suggestion

Experiment with these procedures, too, might be instituted for decisions on borderline pupils.

15. THE PUPIL'S BACKGROUND

There are certain factors in the life of the child which, although they can only be subjectively assessed, have such vital bearing on her/his performance in school and school work that they cannot be disregarded when decisions on the child's school career are taken. Although these factors are interacting and inseparable they may, for convenience, be grouped as follows:

1. Home environment.
11. Educational opportunity.

A full discussion of these factors will be found in many works, among them those of Burt (1937a) and Schonell (1942). It is proposed, here, to consider these factors only in a programme of selection and/or allocation to streams in the secondary school.

1. Home environment

Evidence from the research of Yates and Pidgeon (1957) and the results of research by Campbell (1952; 1956) show that there is significant relationship between a child's chances of being allocated to a grammar school course and the amount of encouragement which it is considered a pupil is likely to receive from his parents.

The influence of a home can be decisive in determining the child's success or failure and, although this influence cannot be measured statistically, there is strong argument for taking it into account when allocating pupils to secondary courses. (McIntosh, 1959.)

Vernon (1957a), on the other hand, recommends that the home background should be disregarded on the grounds of fairness. Yet at the same time he says that if the junior school can provide clear evidence that certain home circumstances are relevant, e.g. that there has been adverse strain in the past but that prospects of parental encouragement are good, it should be possible to take this into account at the final stages of selection.

If there has been some unusual circumstance such as the illness or death of a parent, or if the pupil has herself/himself been ill prior to a test and the result is not up to standard, special allowance should be made for this poor performance. This is particularly necessary where the examinations or tests are done on one or two days only.

Burt (1947) says that, as far as possible, account should be taken of the pupil's whole personality and sociological background when he/she is allocated to or selected for a secondary school.

There is no hope of getting near to equality of educational opportunity until something like a basic minimum in standards of home life and housing is achieved, so that until the best conditions and most effective stimuli for that particular child's success have been provided no child should be written off as low in ability in any given direction. (National Union of Teachers, 1952.)
(See "Intelligence" in this chapter.)

Summary

- i. There is a significant relationship between a child's educational chances and the conditions in her/his home.
- ii. Unfavourable circumstances in the home can cause retardation and backwardness in the children.
- iii. In the allocation of pupils to secondary school courses, there is strong argument for taking the home influence into account.

Conclusion

The influence of the home cannot be ignored in any programme of selection and/or allocation.

Suggestion

In the guidance of a pupil consideration of her/his home background is necessary. Even more essential is it that such consideration be given in the decisions on borderline pupils.

ii. Educational opportunity

One of the most difficult influences for which to provide is that of the differences in efficiency of different schools (Vernon, 1957a) and different teachers.

Retardation and backwardness can be caused by many factors: lack of consultation between infant and junior departments; transfer at different ages from infant schools using varied methods; change of staff in the middle of the school year; change of school due to transfer of parents; illness; deafness and weak eyesight, especially when these defects are discovered late in the pupil's school life, etc. (Burt, 1952.) (See Part I, Chapter II, Section C, "Failure".)

For a human brain to develop normally "it has to be constantly bombarded by sensory stimulation." (Bindra, 1956.) (See "Intelligence" in this chapter.) Research has also pointed to a "critical period" in learning (see "Failure" in Part I, Chapter II, Section C) which, if missed, appears to have long-lasting and even permanent effects.

It is now known that the final educational attainment of pupils who appear initially alike can differ according not only to the quantity but also the quality of education which each receives. (Fleming, 1958.) Because this is so, considerations of unequal educational opportunities should be noted on the child's school record in spite of the fact that no sound method of giving a quantitative assessment of these influences has been evolved. (Vernon, 1957a.)

Summary

1. It is difficult in any assessment to provide for differences in efficiency of different schools and teachers.

- ii. Many factors within the school can cause retardation and/or backwardness.
- iii. The child's brain must receive continual sensory stimulation.
- iv. There appear to be "critical periods" in the learning process.
- v. Unequal educational opportunities should be noted on the pupil's school record card.
- vi. The effects of such unequal educational opportunities should be assessed even if such assessment can only be subjective.

Conclusion

Difficult as it is account must be taken of the differences in educational opportunity among school pupils.

Suggestion

Consideration of unequal educational opportunities should be noted on the child's record card which should be used in guiding the pupil.

16. CONTACT BETWEEN PRIMARY AND SECONDARY SCHOOLS

The Minister of Education, Arts and Science (Scotland) recommends that the recommendation of the head of the primary school be used as one of the methods of selection only if there is regular contact between the primary school and the secondary school. It is, however, the secondary school which finally decides the admission of a pupil, and for this decision it must take full responsibility. (Great Britain. Scottish Education Dept., 1958.) This contact is stressed by Scotland as being most desirable.

Summary

There is need for regular contact between the primary and the secondary school principals.

Conclusion

Regular contact between primary and secondary school principals is most desirable.

Suggestion

Regular contact between the two principals concerned with the pupil at the time of transition should be facilitated in every way.

17. RECORD CARDS

A panel which was set up in 1945 by the London Teachers' Association under the terms of reference "Record Cards and the Selection of Pupils for Secondary and Further Education" submitted a report in 1946 stating that all its members appreciated the value of the record card. Some, however, expressed the fear that such a dossier could be a burden to a child, while others saw it as a saving of time in finding out about new pupils. The following recommendations were made:

The card should not be the sole means of selection, but it should form the basis of selection of all pupils. Teachers should, during school time, attend courses of instruction on the technique of keeping record cards. Classes should be of such a size that teachers could get to know the pupils properly. The teachers should have adequate time, within the limits of the school day, in which to do all the clerical work on the cards. Teachers should be encouraged to offer constructive criticism. The record card should not be seen by any unauthorized person. (London Teachers' Association, 1946.)

This report includes a sample record card on which a space is allocated for results of mental ability tests. A meeting of the Education Section of the British Psychological Society on 19th February, 1944, however, agreed in wide measure on some of the main points. Three of these points which are relevant to this discussion are:

- i. In general, the direct numerical results of tests (either scores, mental ages, or intelligence quotients) should not

be disclosed except occasionally to psychiatrists and social workers on the staffs of their clinics, but should always be embodied in a verbal report or case study which places them in perspective in relation to the testee's personality as a whole and points out their educational or vocational significance. Professional psychologists should make every effort to see that intelligence quotients and the like are not abstracted from their reports and quoted in isolation. Nor should any test results be quoted without mentioning in full the tests employed.

ii. Intelligence quotients should scarcely ever be communicated to teachers unless they are well trained psychologically. Mental ages and educational ages are of far greater value to the teacher, since it is these, not the intelligence quotient or the educational quotient, which determine the school class for which a child is fitted and whether he is working above or below the level expected.

iii. Intelligence quotients which are to be communicated to non-professional persons should never be calculated from a single group test. (Vernon, 1944.)

In America, on the other hand, there seems to be better understanding of what an intelligence quotient means, and, in many instances, pupils know and discuss their abilities and aptitudes. The Test Service Bulletin of the Psychological Corporation (America) stresses the need to discuss with parents the progress of their children, but to do so in terms which they can understand, and with the avoidance of technical and/or scientific language. (Bennett, 1959.)

Langeveld (1955) writes that not everyone can bear to know the truth, that the parent has the right to know about his child, but that the child, too, has the right to privacy.

Although they are unlikely to be more valid than predictions derived merely from test scores and scaled estimates, record cards may help to correct injustices to pupils who have had "flop" scores. In addition, they not only improve the acceptability of the selection procedure, but are also of particular value in educational guidance of children throughout their career, in both the primary

and secondary school. (Vernon, 1957a.)

Summary

- i. Record cards are useful as the basis of selection.
- ii. Classes should be of such a size that the teacher has the opportunity of learning to know all the pupils.
- iii. Time within school hours should be available for the completion of the record cards.
- iv. In England it is advised that the intelligence quotient be kept confidential.
- v. In America the intelligence quotient is known and discussed.
- vi. Parents should be told of their child's progress in terms which they can understand.
- vii. Both parents and children have rights which should be respected.

Conclusions

- i. Record cards are an essential tool in the guidance of pupils.
- ii. The rights and difficulties of parents in understanding the results of tests have to be considered.
- iii. The tests should not be regarded as the incomprehensible, infallible magic of the psychologist in whom many people still feel that they should either believe or disbelieve much as if he were the Devil. (Stephenson, 1949.)
- iv. It is necessary to educate all those, i.e. children, parents, teachers, testers, who use the test results to comprehend what the results mean.
- v. Until this is general policy, much harm and unhappiness can be prevented by keeping the results of tests confidential.

Suggestion

Properly kept records should form the basis of any decisions on the pupil.

18. THE PUPIL'S WISHES

In Sweden the pupils are allowed to choose their courses, while in the Orange Free State, the Central African Federation and Norway specific mention is made of the wishes of the pupil in regard to selection of secondary school courses.

In those countries where there is competitive selection for the (A) academic stream, it would appear that the pupil has a negative choice, i.e. if he has an A-stream pass he may elect either the B or C stream, although he will be encouraged by the school to choose the A-stream. Whether his choice would be decisive would obviously depend on the attitude of his parents, and, possibly, of the school.

At the time of choice the pupil will be influenced by many factors such as his concept of himself, the choice of his friends from whom he does not wish to be separated, likes and dislikes of certain subjects and teachers, ignorance of his own ability - bright children often under-estimate themselves - and an inability to look ahead. He would be influenced, too, by the environmental factors in his own home, especially the emotional atmosphere and morale created by his parents, and their expectations, demands and ambitions. (Super, 1957.)

If the individual is eventually to experience satisfaction of the need to be all that he can be (Roe, 1956), he would, it seems, need help at this moment of decision, (Langeveld, 1955) for it is a pupil's desire to be educated that provides the motivation for success. (Stellwag, 1955.)

Summary

- i. Four countries make specific mention of the pupil's wishes or preferences.
- ii. A pupil may have a negative choice.

iii. Many factors influence a pupil at the time of choice.

iv. A pupil is too immature, as a rule, to be able to make a long-term decision, and therefore needs help.

v. Pupils need to be able to make some sort of self assessment.

vi. The pupil's desires provide the motivation to work.

Conclusions

i. A pupil appears to have little choice in regard to the course which he/she will follow.

ii. Children are generally too immature to make realistic choices.

iii. A child needs help in making decisions.

iv. The co-operation of the pupil is necessary in any choice if the best motive for success is to be obtained.

Suggestions

i. The pupil's wishes should be ascertained.

ii. The necessary help should be forthcoming to ensure that a pupil understands that, as far as it is humanly possible to judge, the decision has been made with her/his best interests in view.

19. THE WISHES OF THE PARENTS

The wishes of the parents are paramount in the Central African Federation and in the Transvaal; in England and Scotland parents have the right of appeal to the Secretary of State whose decision is final. In Natal parents may appeal to the inspector, although they are advised to accept the advice of the headmaster. (Natal. Education Dept., 1961b.)

The fact that the parents in the Netherlands, in the first and last instance, have the right and duty of educating their children, will give a particular slant to the problem of selection in that country. In the rush of ideological enthusiasm, however, parental wishes are apt to be forgotten. (Stellwag, 1955.)

In Belgium the parents may choose, contrary to the advice of the headmaster, provided that, if after a year the pupil does not succeed in the course which the parents chose, the pupil will then follow the course which the headmaster originally recommended. (Natal. Education Dept., 1957.)

Parenthood is a fundamental form of human existence, and to deny to parents their educational duty would mean a loss of much of the significance of their marital relation and an undermining of the sense of parenthood. We must remember that parents have a deep sense of doing the things of life connected with the task of parenthood, and that much incapability of parents is corrected by their serious intention which is felt by the child in its fundamental value, as reliability, personal devotion and love. (Langeveld, 1955.) "It is highly dangerous to create a situation in which parents principally are supposed to be unable to take the task of education upon themselves." (ibid., p. 48.)

Every support should be given to the parents' independence in dealing with their educational responsibilities which should also be a matter of consideration for the community. Most parents want to do their best for their children, yet they may not know what is best, so that they should be helped to become better and more competent parents. It is defeatist to adopt the attitude that parents are hopeless. (ibid.)

It should be remembered that parental choice is frequently influenced by psychological factors such as the self-concepts of the parents, family traditions and patterns, aspirations and pressures of which the outsider may know nothing and yet which can prove to be powerful motives in the children. If the parents are disappointed in the choice of stream or course both they and the children need assistance in making satisfactory re-adjustments.

Summary

i. In some countries parents make the final choice; in others they have the right of appeal.

ii. In Belgium the parents have, in the first instance, the

right to decide on their child's course. If the child fails at the end of the year, then the original recommendation of the school has to be followed.

iii. Langeveld points out that denial to parents of their educational duty would undermine parenthood.

iv. Parents should be helped to become better parents.

Conclusions

i. Parents have not only obligations but also rights in the education of their children.

ii. It is on the parents that the results of wrong allocation or selection of their child fall; it is the parents who should have the final say.

iii. The provision for reversal of the parental choice made in Belgium appears to be a reasonable one.

iv. Decisions in regard to the pupil's school career should be taken in consultation with the parents.

v. Often parents are unwilling for their intelligent children, especially daughters, to continue the more academic and higher courses.

vi. It is difficult to reconcile this lack of parental right in the choice of stream/level in Natal with parental right to choose the medium of instruction. (See Part I, Chapter I, No. 4.)

Suggestions

i. The wishes of the parents should be paramount, unless the parents are such bad parents that they have abandoned the child and know nothing of her/his progress and needs. There are two provisos which should, nevertheless, be observed:

- a. If failure by the child proves the parents to have been over ambitious the pupil should then follow the course originally indicated. If, on the other hand, the pupil's progress shows that he/she would be better in a more demanding stream or course, the position should be reviewed with the parents.

- b. No effort should be spared in trying to obtain the parents' consent for the pupil to pursue the more advanced course if this course is indicated by the selection or allocation procedures which have been used.

ii. Parents should be informed of the reasons for and the implications of new policies in education.

iii. Parents should be encouraged to discuss with the principals of schools any decisions on the school career of their children.

The following chapter describes the construction and standardization of scholastic tests suitable for use in Natal schools. The development of these tests was foreshadowed in the Introduction which gave the first aim of this research as an attempt to offer something concrete to Natal teachers and pupils.