

## CHAPTER I

### INTRODUCTION

Every one is well acquainted with the fact that persons differ in intelligence. Despite the divergent views with regard to the nature of this entity, the notion that a child may fail at his school work because he is being faced with a task 'beyond his capacity' is one that is readily acceptable. A teacher who has spent many frustrating months trying to teach an eight year old child, to read or to master the process of multiplication is well prepared to believe that, although most children of this age can do these tasks they are beyond the capacity, at any rate for the time being, of that particular child.

Such frustrating experiences can be avoided if some means are used to ascertain the limited capacity of the child. Intelligence tests are such means of ascertaining more accurately the ability of the child. Consider the case of two children both aged 9 years, and both revealing a very low reading ability - a standard score of say 75 on a test of reading comprehension. It would clearly be of the greatest value to the children's teacher, especially, if

faced with a class of 40 other pupils, to know whether any special efforts on his part to teach the two to read are likely to be at all rewarding. He gives an intelligence test - non-verbal, since the children have poor reading ability and one obtains a standard score of 100, the other 70. Being cautious, the teacher gives a second test which confirms these results. The teacher, then, argues that the first child apparently possesses average intelligence and that, whatever the cause of his poor reading, it is certainly not lack of ability. Efforts on the part of the teacher, then, to find the cause of the difficulty and apply remedial techniques may well result in success. The second child is, however, manifestly dull and there is no need to look ahead for higher achievement. Although poor, his present level of reading is all that can be expected and it is unnecessary to take any remedial action. At this point we should note the basic assumption implicit in this line of reasoning. We may agree that children cannot perform tasks beyond their capacities ~~and~~ as the capacity necessarily limits output, or to use a much quoted analogy - it is impossible to pour more than a pint out of a pint-pot.

For many years, teachers have realised the difficulties inherent in attempting to teach pupils who are widely different in their capacities to learn. They have found that those explanations and materials which are suitable for the

average of the class would bore the bright and confuse the dull. The purpose of intelligence tests according to Terman, is to make a difference in the educational treatment of pupils, not to furnish amusement to the teacher or to gratify an idle curiosity.

#### Need for the Present Study

In Gujarat, the following tests of intelligence have been standardized so far:

- (i) A Group Test of Intelligence (Verbal)  
by Dr. K. G. Desai.
- (ii) An Individual Test of Intelligence  
by Dr. N. N. Shukla.
- (iii) A Group Test of Intelligence (Verbal)  
by Prof. T. P. Lele.

Out of these three, only the first two are available in the market. As regards the non-verbal tests, there is not a single test available. The present investigation, therefore, will be first of its kind in the Gujarat State. Construction and standardization of a non-verbal group test of intelligence has been long overdue in Gujarat. The new, separate and unilingual State of Gujarat was formed on 1st May 1960 as a result of the Bombay Reorganization Act, 1960. Prior to this date it was a part of the greater bilingual

Bombay State. It should be noted, in this connection, that in India to-day, no State can be regarded as exclusively unilingual. The formation of such a State is meant for administrative purposes only and any Indian can stay at will in any State of India. Gujarat was a part of the old bilingual Bombay State for many years. The contiguity of Maharashtra and Gujarat has resulted in the settlement of many Maharashtrian families in Gujarat and many Gujarati families in Maharashtra. This state of affairs has practically remained undisturbed even after the bifurcation of the old Bombay State in 1960. Moreover, there is a good number of Muslims in Gujarat and many of them learn through Urdu. After independence many Sindhi families have come and stayed in different parts of Gujarat and they have their own Sindhi schools. It will be seen from the foregoing discussion that Gujarat is no longer a unilingual State in the strict sense of the term. This will be evident from the table showing the language-wise distribution of primary schools in the new Gujarat State in 1961-62.

TABLE I

Language-wise Distribution of Primary  
Schools of Gujarat State.

Language	No. of primary schools
Gujarati	18500
Marathi	224
Urdu	70
Hindi	34
Sindhi	62
Others	12
<b>Total</b>	<b>18902</b>

It should be remembered that pupils in such non-Gujarati schools have at least the working knowledge of Gujarati and they can be given this test without any difficulty. Verbal tests because of their linguistic character cannot be given to the students of Marathi, Urdu, Hindi and Sindhi schools of Gujarat. The present test will have an extra advantage in that it will be useful to test even the non-Gujarati children of Gujarat if they satisfy certain basic conditions of the test.

Scope of the Present Investigation

The problem of the present investigation is,  
"Construction and Standardization of a Non-Verbal Group Test

of Intelligence with Special Reference to the Gujarat State, for the Children of Age Group 7 to 13".

During the course of preliminary testing it was found that the test works well with the age group 8 to 14, instead of 7 to 13. Here age of 8 years means 7 years 6 months to 8 years 5 months. Similarly, age of 14 means from 13 years 6 months to 14 years 5 months. So the test can be applied to the boys and girls of Gujarat whose age is not less than 7 years 6 months and not more than 14 years 5 months.

The word 'Gujarati' means one who lives in Gujarat and who has some workable knowledge of the Gujarati language. The test, thus, will be useful to test the intelligence of any Gujarati boy or girl provided;

- (i) he or she can use a pencil or a pen without difficulty;
- (ii) he or she is able to read and understand the Gujarati numbers at least upto hundred;
- (iii) the true birth date of a child to be tested is available;
- (iv) the child understands simple spoken Gujarati language.

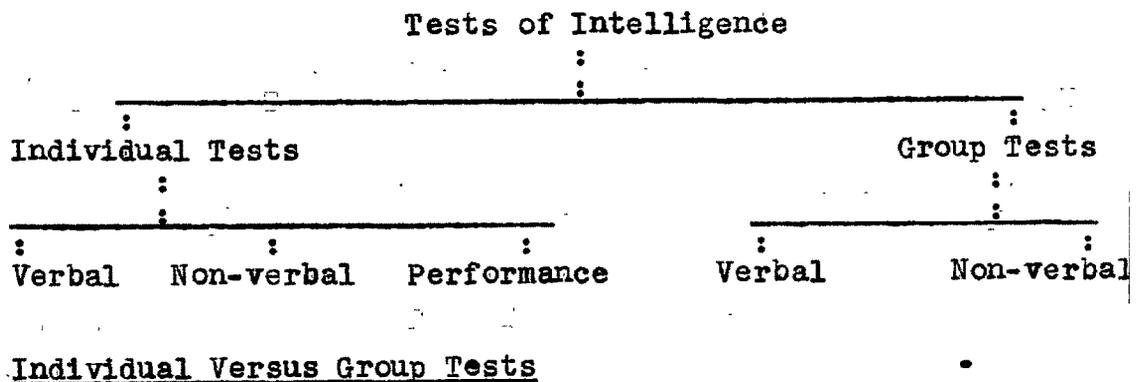
Incidentally, the test will be useful to

- (i) measure intelligence of most of the children of standards III, IV, V, VI and VII of the primary schools of Gujarat;
- (ii) measure intelligence of many children of standard VIII in secondary schools of Gujarat as the average age of the children of standard VIII is 13 years;
- (iii) know about the intellectual ability of the problem children of Remand Homes of Gujarat;
- (iv) test intelligence of children whose reading ability and language performance are poor;
- (v) test intelligence of those children who do not go to school but fulfil the conditions one, two and three of the test;
- (vi) test intelligence of the children whose mother tongue is not Gujarati but who can understand simple Gujarati and can recognize Gujarati numbers;
- (vii) a teacher-counsellor in giving educational and personal guidance to all those who need it.

Furthermore, the test is meant for the Gujarat State and not the Gujarat region only. This naturally includes the three well-known regions of the State viz., Gujarat, Saurashtra and Kutch. Being non-verbal, the test is language-free to a large extent. It is not, however, culture-free to the same extent as it does involve some items in which the Gujarati culture is reflected. Language is involved to the extent of understanding the oral instructions only.

As mentioned in the statement of the problem itself, the task is both to construct and standardize the test. The items of the test are original and new as the test has not been adapted from any foreign or Indian test of the kind.

With this preliminary discussion as a background, let us now turn to consider the different tests of intelligence and their salient features.



Individual tests are devised for being applied to

only one individual at a time. The problems in some are purely verbal, in some the problems are non-verbal i.e. they are done on paper with the movements of a pencil. No reading or writing or speaking is involved in non-verbal tests, while in some the problems are of performance type. The performance tests involve the solution of some problems by handling concrete material; the problems in verbal and non-verbal tests, on the other hand, involve the use of abstract thinking.

Both these types have their own advantages and limitations. Group tests are not so incisive and searching as the individual tests. The individual tests are more reliable. The result of a group test is verified, in case of doubtful cases, by using an individual test. Children who are slow in action and nervous by temperament get confused and are more at a loss in group tests. The tester does not come into contact individually in group tests, so he does not know whether all the testees take the test with equal seriousness. In individual tests, the tester can stop the procedure if he finds that the testee is not mentally prepared. In group tests the tester takes it for granted that all have followed his instructions. Chances of disturbance are more in group tests. Whispering or asking a difficulty in the middle, will disturb all the testees. In group tests nobody knows whether all have the same motivation

and desire to work. Such is not the case with individual tests. Especially, young children require incentive and rapport and as such the group tests are not suitable for the lower age group.

In spite of the limitations discussed above, the group tests enjoy a prominent place, on account of the peculiar features of their own. The group tests bring mental testing within the limits of universal application. In spite of the searching and incisive nature of individual tests, they are over-shadowed by their limitations. As each individual is to be tested singly, it involves a lot of time and skill in administration. The group tests, on the other hand, can be administered within a short time. The 'personal equation' of the tester is extremely important in individual tests. Much depends upon the voice, appearance and approach of the tester. These may probably affect the test results. There is no such direct effect of the tester in group tests. In group tests spirit of competition prevails, questions are interesting and because of the short duration, it is easy to maintain interest, while in individual tests, the attitude of the tester and of the testee changes as time passes on.

In fine, while group tests should enjoy a prominent place in school-testing, individual tests should have their limited but privileged position in the psychological laboratory as a final, incisive and searching tool for testing the

child.

### Verbal Versus Non-verbal Tests

Verbal tests, though of great advantage in general, turn out to be great handicaps in certain cases. They are not suitable in the case of illiterates, foreigners or in case of deaf and dumb children.

Non-verbal tests require the use of a paper and pencil but are non-linguistic in character. They differ from the performance tests in that, the responses are not of the type of motor or manual manipulation. Owing to their general deficiencies in linguistic development, the deaf are handicapped on verbal tests even when they can read and write. Similarly, the children with serious speech defects will be unable to take many of the tests such as Shukla's test which require oral replies. Moreover, children with poor reading ability will not be able to get justice on verbal tests.

Persons with foreign language background may likewise experience special difficulties in taking the usual predominantly verbal intelligence tests. The students of Convent schools, for example, may be knowing Gujarati but they cannot be tested with verbal tests in Gujarati. In a country like India where there is free interflow of persons from one State to the other non-verbal tests are of immense

utility. India is a multi-lingual country and there are cities of cosmopolitan character. Non-verbal tests such as prepared by the present investigator can be of great use under such conditions.

There is at present a movement for organizing multipurpose schools in the country, each high school providing at least three or four of the alternative courses as suggested by the Secondary Education Commission. These schools are specially aided both for recurring and non-recurring expenditure by the Government of India as well as the State Government. The types of multipurpose courses and their number in Gujarat are as under:

TABLE 2  
Multipurpose Courses in  
Gujarat

Types of courses	Number of courses
Agriculture	21
Commerce	38
Science	11
Fine Arts	21
Home Science	18
<b>Total</b>	<b>109</b>

The test will enable the heads of the institutions

to select students for such different courses. Educational guidance is based on the intelligence, interests, aptitudes and the personality traits of the children. They are analysed with the help of different varieties of tests. The case under educational guidance generally fall into two types:

- (1) those seeking aid in the choice of school or college courses, and
- (2) those seeking guidance in case of school children who are apparently backward or dull.

The latter type of guidance is not possible without the use of an intelligence test such as this.

The test will be useful to pick out the brighter pupils out of many who seek admissions in the school. Looking to the age-group for which the test is prepared the test will be applicable to those who want admission either in fifth or in eighth standard of a secondary school. It will enable the teachers to classify the students according to their intelligence and adopt instructional procedures to the individual differences in learning capacity. The test may as well be useful in finding out the unusual cases of pupils who suffer from some mental or physical abnormalities. Moreover, a pupil's score on such intelligence test can be one of the items of information for vocational guidance. Vocational guidance is a need of modern complex life with a lot of

specialization owing to the advent of machines and large-scale industries. The test can be of much use to psychological and child guidance clinic. Without intelligence tests such as this, the psychological diagnosis and treatment cannot be complete. This test will be particularly useful for the diagnosis and treatment of cases wherein reading ability is a factor to be done away with. It is well to remember here that the test will not be of much use for the cause of vocational selection as it is meant for the age-group 8-14. The score on the test may, however, provide an employer with a useful information of the past of an employee.

#### A Word about the Present Work

In view of what has been discussed so far, it was decided to prepare a non-verbal test of intelligence. It is clear from the foregoing discussion that there has been a 'felt' need for such a test in Gujarat. The present test will be an humble addition to the valuable stock of intelligence tests which have been prepared by some investigators so far. The present test will be first of its sort in Gujarat and it is hoped that the test will prove to be the beginning of many similar tests of wide variety for different age-groups.

India in general and Gujarat in particular needs many such tests and this is just an humble attempt in that

direction. Educational and vocational guidance in Gujarat is just a fallow field awaiting zeal, tenacity and untiring work on the part of every one who is interested in the qualitative development of education. Here is an honest attempt to provide a tool to measure intelligence of the Gujarati children. This volume embodies the complete account of the procedure of constructing and standardizing the present test.