PART II

* Planning.

* Test construction.
Planned procedures for test construction vary, depending upon a large number of factors such as the nature of the test, the purpose of the test, the type of ability measured etc. Planning is an essential activity in all stages of a test construction project. Lack of proper planning in the initial stages may lead to countless difficulties in all stages afterwards. As K. W. Vaughn¹ of the Co-operative Test Service puts in,

"Planning encompasses all the many and varied operations that go into producing a test. Not only does it involve the preparation of an outline or a table specifying the content or operations to be covered by the test, but it must also involve careful attention to item difficulty, to types of items, to arrangements for tryouts ........."

Before a test is planned out, it is essential that the criticism of similar tests already in use is properly studied. The planning of a new test can only be based

on the study of previous tests. The plan of the present test has been laid down bearing in mind the criticism levelled against the existing tests of social intelligence.

1. The first requisite for a good test is that one must be clear about what the test is going to measure. The present test is meant to measure social intelligence of individuals. The meaning of the term has been already discussed in the previous pages and the definition of the term has been decided so far as it concerns the present work. The definition of social intelligence accepted for the present work is, "It is the ability to understand and manage people and to act wisely in human relations".

2. The second important pre-requisite in planning a test is to be very clear about the purpose of the test. Why is the present test constructed? To what use is it going to be put? These are the questions that the test constructor has to put to himself before proceeding with the actual work of test construction. The major purpose of constructing the present test is to provide a reliable tool to measure the social intelligence of people. The test is to be used with S.S.C. class pupils of secondary schools of Gujarat.
on the one hand and as a selection test for salesmen, insurance agents and supervisors on the other.

3. The third important consideration in a test construction project is to decide the type of the test that is to be constructed. Is it going to be a speed test or a power test? The technique of standardization varies according as the test is a speed test or a power test. The present test is to measure the social ability of persons. It is more akin to professional aptitude tests. No useful purpose is served by making aptitude tests as speeded tests. The present test is to be a power test and liberal time will be given to testees.

4. After deciding the nature, purpose etc. of a test under construction, the next important consideration in test planning is to decide the procedure of selecting the sub-tests and writing the items. If it is a test of achievement, one must fix the educational objectives that he desires to evaluate. If it is a test of mental ability, one should be clear about the concept of intelligence. He has to decide the type of sub-tests to be included in his battery on the basis of previous work. If factor analysis results in the past have shown the existence of some particular factors in a test,
the test constructor designing a similar test should include in his battery sub-tests and items based upon those factors.

In the present case, a review of past work shows that no factors have been isolated as a result of the factor analysis of tests of social intelligence. R. L. Thorndike\(^1\) carried out a factor analysis of George Washington University Test of Social Intelligence with George Washington Mental Alertness Test, but the results are not quite conclusive. Thorndike concluded,

> "These results suggest that in so far as the parts of either of these tests measure a general trait of the individual, it is the same one that is measured by the other test. The size of the first factor loadings suggests that comprehension and use of words accounts for most of what is measured both by the Mental Alertness Test and by the Social Intelligence Test. There is evidence in the second factor that the parts of Social Intelligence Test do have a little in common that they do not share with the abstract intelligence test....."

Thorndike's work is not very helpful in the construction of this test except that the test should be evaluated at the end and a factor analysis should be carried out.

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In absence of any useful evidence about the existence of some factors in social intelligence, the selection of sub-tests to be included in the present test has been based upon a new independent approach. This approach as will be seen in the next chapter, depends upon the experience of persons belonging to occupations known to require social intelligence. The plan of constructing the tests will have the following steps:

1. An analysis of the abilities of successful salesmen, insurance agents etc.

2. Ranking of these abilities

3. Selecting these abilities which have a rank above the median rank value and basing the tests on these abilities.

5. Sample: The sample of standardization will be selected from the population of S.S.C. class pupils of the secondary schools of Gujarat.

The test will be administered to insurance agents, salesmen and supervisors in textile mills and other factories.

6. Item analysis: In the present test, the item analysis will be carried on a very sound and systematic base. The following will be the chief steps in carrying out the item analysis:
(i) Fixing the criterion for item validation:

Two criterion groups will be obtained on the basis of (a) teacher's ratings for participation in cocurricular activities and good manners and proper social etiquettes and (b) sociometric studies of pupils in different classes. One group will consist of pupils with high social intelligence. The second group will consist of pupils with low social intelligence.

(ii) Item validation:

Each item will be validated against these two criterion groups. Only those items which will clearly discriminate between the two criterion groups will be included. The chi-square test of significance will be applied.

(iii) Internal consistency:

For internal consistency of the test, the well-known technique of selecting two extreme criterion groups and finding out the item-total test correlation will be used. The total score on the test will be taken as the criterion score. The upper and the lower 27% of the sample will constitute the two extreme groups.
(iv) **Item difficulty:**

The item difficulty will be calculated from the two extreme 21% groups by applying the following formula:

\[
\text{Difficulty value} = \frac{U + L}{2}
\]

where \( U \) = P.C. of correct responses to an item from the upper 21% group.

\( L \) = P.C. of correct responses to the same item from the lower 21% group.

These percentages will be corrected for guessing.

7. **Standardization of the test:** The plan for standardizing a test requires clear decisions about fixing the norms, the methods to find out the reliability of the test and the methods to establish the validity of the tests.

(i) **Fixing the norms:**

The test will have four sets of norms for different populations, viz. S.S.C. class pupils, insurance agents, salesmen, supervisors. Both percentile norms and standard score norms will be calculated. The following formula for converting the raw scores into standard scores will be used:

\[
Z = (\frac{R - M}{\sigma}) 10 + 50
\]

where \( Z \) = Standard score.

\( R \) = Raw score

\( \sigma \) = Standard deviation of the distribution of test scores

\( M \) = Mean of the distribution.
(ii) **Reliability:**

Reliability of the test will be determined by more than one method. The following techniques will be used:

1. Split-half method.
2. Method of rational equivalence (Using K-R formula)
4. Test-retest method.

The reliability of the test will be determined on a sample of S.S.C. class pupils.

(iii) **Validity:**

Validity of the test will be established by the following procedures:

1. Selecting only valid items in the test.
2. Validating the total test against ratings of insurance agents.
3. Cross validating the test against new independent samples.
4. By factor-analysis of the test.

The essential and very desirable conditions for test-validity as stipulated in "Technical Recommendations for Psychological Tests and Diagnostic Techniques" of the "American Psychological Association" will be followed.
(iv) **Factor analysis:**

A factorial analysis of the test will be carried out on a sample of about 100 pupils of S.S.C. class. Thurston's centroid method will be employed.

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**Selected References**


