Chapter IV
THE PLAN OF INVESTIGATION

Pursuit of the objectives of the present study called for:

1. Planning a strategy for the selection of determinants of success in teacher education course;

2. Tentative selection of factors for success in teacher education course;

3. Seeking views of selected teacher educators and headmasters on the tentatively selected factors;

4. Finalisation of the components of test battery;

5. Development/selection of tools, to assess the factors, constituting the battery;

6. Selection of a sample of student teachers;

7. Determination of the criterion to be used as measure of success;

8. Evaluation of reliability of the criterion of success;
9. Collection of two sets of data, one concerning the test components of the battery and the other relating to the criteria of success in teacher education course; and

10. Statistical treatment of data.

1. A Strategy for Selection of Determinants of Success in Teacher Education Course

The strategy was to consult the following three sources for the identification of factors for success in teacher education course.

a. Related literature,

b. Views of selected teacher educators and headmasters at the secondary education level, and

c. Personal experience.

2. Tentative Selection of Factors for Success in Teacher Education Course

Forty factors associated with success in teacher education course and in teaching were identified on the basis of review of related literature (ante, pp. 58, 59). Each factor was then examined for inclusion in the test battery.
Age and experience were left unconsidered in the present study as only fresh graduates are being admitted to the colleges of education in the State of Karnataka in recent years. Experienced untrained teachers serving in secondary schools are generally deputed to Summer-Cum-Correspondence Courses. Therefore such candidates, by and large, do not seek admission to the regular B.Ed. course since, if they do so, they have to forego their salary and also have to meet additional expenses towards fees, etc. from their own purse during the period of training.

Socio-economic status too is not considered as an important factor in this study since admissions to candidates belonging to various socio-economic strata are governed by the relevant admission rules issued by the State Department of Education. (See Appendix A for relevant admission rules.)

Attitude towards pupils plays an important role in shaping a successful teacher. Feeling of favourableness or unfavourableness towards pupils certainly influences the student teacher behaviour in teacher education course in general and classroom teaching in particular. In other words a student teacher who believes that his students have the capacity to learn and are sincere in their efforts
will behave quite differently from the student teacher who has serious doubts about the capacity and sincerity of his pupils. It was, therefore, decided to include "attitude towards pupils" in the admission test battery. It may be pointed out here that 'attitude towards pupils' and 'student perception' are almost identical and therefore the latter is dropped.

Student teachers who have interest in the teaching profession are likely to take up the teacher education course with all sincerity, pleasure, and enthusiasm, participate actively in all the programmes and activities of the course, and attain success in it. Student teachers who have little or no interest in the teaching profession, may take up the course apologetically and try to complete it somehow. Thus "interest in teaching profession", is considered as another important factor contributing to success in teacher education course, and therefore was decided to be included in the said battery. "Teaching profession perception" was not considered for inclusion in the battery as it is almost represented by "interest in teaching profession."

Professional knowledge, instructional goal perception, and instructional role perception were not
considered appropriate for inclusion in the admission test battery as these are mainly the products of teacher education course.

Verbal ability was considered essential for success in teacher education course for two reasons — (i) This ability is required for understanding professional literature; and (ii) It is essential for effective communication.

Intelligence, mental ability, inferential reasoning, numerical reasoning, logical selection, and convergent thinking ability, for the present study, are grouped under one head viz., 'abstract reasoning'. Divergent thinking ability in the present study formed a part of verbal ability. Scholastic aptitude is nothing but abstract reasoning plus verbal ability. It was, therefore, decided to include 'verbal ability' and 'abstract reasoning' in the admission battery.

Certain personality factors are found to play a significant role in shaping a successful teaching personality. It may be pointed here that adaptability, social adjustment, self perception, participation in extra-curricular activities are covered under personality factors. As regards
personality factors, only those found to be related with teaching success/success in teacher education course in most of the studies were considered for inclusion in the admission test. Such personality factors were:

i. Conscientiousness,
ii. Toughmindedness,
iii. Confidence/Placid,
iv. Outgoing,
v. Experimenting,
vi. Practical,
vii. Self controlled,
viii. Emotionally stable,
ix. Venturesome,
x. Trusting, and
xi. Sober.

Academic achievement was also not considered in the present study for inclusion in the battery for two reasons -

i. Research studies have repeatedly revealed that the relationship between abstract reasoning plus verbal ability, and academic achievement is +ve and significant; and
Research studies have also revealed that previous academic achievement is not related with teaching success. (ante, pp. 32, 33, 47, 48)

Thus the following factors were considered important for success in teacher education course:

1. Attitude towards pupils,
2. Interest in teaching profession,
3. Verbal ability,
4. Abstract reasoning,
5. Conscientiousness,
6. Toughmindedness,
7. Confidence/Placid,
8. Outgoing,
9. Experimenting,
10. Practical,
11. Self controlled,
12. Emotionally stable,
13. Venturesome,
14. Trusting, and
15. Sober.

3. Seeking Views of Teacher Educators and Head Masters

Copies of the list of fifteen factors tentatively selected for inclusion in the test battery were dispatched
to selected teacher educators \((n_1 = 40)\) at the national level, and headmasters of high/higher secondary schools \((n_2 = 10)\) on 22nd January 1976 to avail their views on the factors. In all 31 \((n_1 = 25\) and \(n_2 = 6\)) replies were received in time. (See Appendix B for the request letter along with the list of factors.)

**TABLE 4 : Analysis of the Responses of the \(S_s\) \((n=31)\)**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Factor</th>
<th>No. of (S_s) considering the factors important for success in teacher education course</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attitude towards pupils</td>
<td>26</td>
<td>83.87</td>
</tr>
<tr>
<td>2</td>
<td>Interest in teaching profession</td>
<td>28</td>
<td>90.32</td>
</tr>
<tr>
<td>3</td>
<td>Verbal ability</td>
<td>23</td>
<td>74.19</td>
</tr>
<tr>
<td>4</td>
<td>Abstract reasoning</td>
<td>21</td>
<td>67.74</td>
</tr>
<tr>
<td>5</td>
<td>Conscientiousness</td>
<td>18</td>
<td>58.06</td>
</tr>
<tr>
<td>6</td>
<td>Toughmindedness</td>
<td>14</td>
<td>45.16</td>
</tr>
<tr>
<td>7</td>
<td>Confidence/Placid</td>
<td>20</td>
<td>64.52</td>
</tr>
<tr>
<td>8</td>
<td>Outgoing</td>
<td>14</td>
<td>45.16</td>
</tr>
</tbody>
</table>

Contd...
The above table indicates the order of importance given to various factors by judges for success in teacher education course. On the basis of this analysis, it was decided that the six factors interest in teaching profession, attitude towards pupils, verbal ability, abstract reasoning, conscientiousness, and confidence/placid be included in the proposed test battery.

4. Finalisation of the Components of Test Battery

Based on the review of related literature, opinions expressed by the teacher educators and headmasters, and self experience it was felt that the following factors should be included in the battery for selecting candidates to teacher education course.
i. Interest in Teaching Profession (ITP),
ii. Attitude Towards Pupils (ATP),
iii. Verbal Ability (VA),
iv. Abstract Reasoning (AR),
v. Conscientiousness, and
vi. Confidence/Placid.

5. Development/Selection of Tools

Interest in teaching profession inventory (ITPI), attitude towards pupils scale (ATPS), verbal ability test (VAT), and abstract reasoning test (ART) were developed using the standard procedure since the available tools for the assessment of ITP, ATP, and AR were not found to be that satisfactory in terms of comprehensiveness, relevance, and culture-fairness. Further verbal ability test was found to be conspicuous by its absence for the type of sample involved in the study. So far as the two personality factors - conscientiousness and confidence are concerned, the relevant portions of the Indian adaptation of 16 P.F. Questionnaire of R.B.Cattell were selected for their assessment, as the 16 P.F. Questionnaire is being used extensively in India for the type of sample involved in the present study.

The procedure used for the construction of four tools is described in detail in the next chapter.
6. **Nature and Size of the Sample**

343 student teachers who had opted Kannada as the medium of instruction for practice teaching, and were undergoing B.Ed. training course during the academic year 1977-'78 in the seven out of eight colleges of education coming under the jurisdiction of the Karnatak University, Dharwad (Karnatak State) constituted the Ss of the sample of the present endeavour. For clarification it may be pointed here that the sample described was involved for the purpose of determining the predictive validity of the battery. However, the sample involved for the purpose of development of tools is described in the next chapter.

The seven colleges of education involved in the study were:

1. University College of Education, Dharwad;
2. Government College of Education, Jamkhandi;
3. Government College of Education, Belgaum;
4. Government College of Education, Gulbarga;
5. Kotturswamy College of Education, Bellary;
6. Kamala Baliga College of Education, Kumta; and
Thus one university college, three government colleges, and three private colleges were involved in the present study. All these colleges follow the one-year programme—theory and practical, prescribed by the university and prepare the candidates for the B.Ed. degree of the university. Generally, before the commencement of the academic year, the selection of candidates from those seeking admission to the course is finalised by each college as explained earlier in the opening chapter.
7. **Criterion of Success in Teacher Education Course**

The battery is designed to predict whether the candidate seeking admission to B.Ed. course will be successful in the course or not. Therefore predictive value of the battery was to be found out. It is for this that some external criterion was necessary. The colleges of education, through the medium of professional courses, aim at bringing about certain desirable changes in the thought and classroom behaviour of the prospective teacher. The evidence of change, if and when identified, can give a clue to the nature and extent of success in teacher education course. This change is generally reflected in the standard of performance of the student teacher at the internal and external examinations in theory and teaching practice conducted during and at the end of the course. Therefore the criterion, grand total marks, was first accepted as a measure of success in teacher education course.

8. **Reliability of the Criterion of Success**

The criterion - grand total marks, obtained by the candidate in the B.Ed. course is composed of the following:

1. Internal theory marks based on the performance of the candidates at the internal test of about one hour's duration and one assignment carrying six and four marks respectively per course
ii. Internal practice teaching marks based on the performance of the candidates in twelve lessons in each of the two school subjects selected for teaching and each lesson carrying ten marks

iii. Practical work marks based on the performance of the candidates with reference to the following:

   a. Project,
   b. Teaching aids,
   c. Journals,
   d. Co-curricular activities,
   e. Work-experience,
   f. Attendance, etc.

   each carrying ten marks

iv. External theory marks based on the performance at the external examination conducted at the end of each semester in five courses at a time and each course carrying forty marks

v. External teaching marks based on the performance at the two lessons—one in each of the school subjects delivered by the candidate at the practical examination at the end of the B.Ed. course, each lesson carrying 100 marks.

For examining the reliability of the criterion—grand total marks, the methods available are:
i. Test - retest (repetition),
ii. Alternate or parallel forms,
iii. Split-half technique,
iv. Rational equivalence, and
v. Analysis of variance.

In view of the nature of the criterion selected in the study, split-half technique is the only possible method that could be applied for examining its reliability.

However, this method could not be applied for determining the reliability of the criterion - grand total marks, because of the non-availability of the required data pertaining to some of the aspects of the criterion viz. coursewise internal theory marks, lessonwise internal practice teaching marks, and itemwise practical work marks. Hence it was finally decided to accept the external examination marks in theory and teaching together as the criterion for the present study. It may be pointed out here that external examination marks - coursewise and lessonwise were available in the office of the controller of examinations.

The reliability of the criterion 'External Total Marks' - EToM, was found out as follows:
Marks obtained by each candidate in the five subjects/courses - (i) Educational Psychology, (ii) Principles of Education, (iii) Practice of Education-1, (iv) School Organisation and Management, and (v) History of Education, at the semester end university examinations plus marks obtained in the first lesson delivered at the practical examination formed one set of scores; and marks obtained in the rest of the five subjects/courses - (i) Experimental Psychology and Statistical Methods, (ii) General Methods, (iii) Practice of Education-2, (iv) School Hygiene and Educational Administration, and (v) Current Indian Education, at the semester end university examinations plus marks obtained in the second lesson delivered at the said practical examination formed the other set of scores with reference to the criterion.

The consistency coefficient of the criterion after using Spearman-Brown prophecy formula was found to be .77 (n=343) which is quite significant.
\[ r = \frac{343 \times 670 - (114)(-39)}{\sqrt{343 \times 1126 - (114)^2 \times 343 \times 1077 - (-39)^2 \times 1126 - (114 \times 1077 - (-39))^2}} \]
\[ = \frac{229810 + 4446}{\sqrt{(386218 - 12996)(369411 - 1521)}} \]
\[ = \frac{234256}{\sqrt{373222 \times 367890}} \]
\[ = .6324 \text{ (This is for half of the test length.)} \]

Therefore for whole test, \( r = \frac{2 \times .6324}{1.6324} \)
\[ = .77481 \]

Correlation of the criterion with grand total marks was also computed and it was found to be .9391 (n=343).

It may, therefore, be inferred that the criterion of success in teacher education course finally selected for the present study is reliable although it may be incomplete.

9. Administration of Tests and Collection of Data

In the present study, the sample of student teachers is treated as one sample and analysis has not been made with reference to the Ss classified according to the variables—sex, academic qualifications, previous teaching experience or subject fields chosen for teaching.
Data relating to the four factors - ITP, ATP, VA, and AR were obtained by administering the corresponding tools developed to the Ss in the beginning of the first semester in August 1977. The data relating to the two personality factors were also obtained by administering the relevant portions of the 16 P.F. Questionnaire. The scoring procedure suggested by Cattell was followed in quantifying the responses of the Ss to the P.F. Questionnaires.

Data relating to the criterion were obtained from the Office of the Controller of Examinations, Karnataka University.

10. **Statistical Techniques Employed in the Analysis of Data**

The purpose of the present investigation was to determine the value of the battery as a whole and the relative value of each component of the battery in predicting the criterion of success in teacher education course. The data relating to the predictors and criterion were in the form of numerical scores. Therefore correlation and regression analysis techniques were selected for the statistical treatment of the data.