CHAPTER - I

INTRODUCTION

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1. **THE BACKGROUND**: 

Education is a means which enables a society to transmit its way of life to the succeeding generation. The way of life the society upholds is reflected in the values of life it cherishes. And these values determine the form of education the society provides for the new generation.

But this is not enough. Society does not stop at determining a form of education which embodies its cherished values of life. It also wants to see how far the values it has set forth have been realised. It wants to evaluate the outcomes of all the processes it employs to bring forth its values to life. In short, it desires to evaluate the teaching-learning process and other processes it employs in educating the child.

This need of evaluating the outcomes of education has been felt urgently in recent times and various tools and techniques are being employed to learn the results achieved by the educational process.
Evaluation and measurement have been regarded as of fundamental importance in education to-day. The present study has been undertaken with a view to fulfilling a need of the present-day education and is an humble effort to provide an educational tool to measure an aspect of education which is, in a way, of great importance in education.

Many and varied efforts have been made in this century to prepare evaluation tools. Hence, in order to understand the study undertaken, it would be interesting to have a brief resume of all the efforts that have been made in the techniques of evaluation in the present century.

2. **MEASUREMENT IN THE TWENTIETH CENTURY**:

Seven decades of the present century have already elapsed and each decade has been a clearly marked phase in the history of evaluation up-to-date.

Before, however, we survey the efforts and researches in this field during the seven decades, it is necessary to understand the modern concept
of the process of evaluation. Evaluation, as it is conceived to-day, is concerned not only with testing a single aspect of the subject-matter in terms of an achievement. Its field is vast and comprises the whole personality of the child. Great emphasis in present-day evaluation is being laid on the appraisal of broad personality changes which includes interest, aptitude, power of thinking and social adaptability of the child.

Let us, now, see how during the last seven decades, this concept of evaluation has been developed and what efforts have been made to evaluate the outcomes of education.

(a) The First Decade: 1900 to 1910: The Construction of Testing Tools:

We could see the origin of the modern concept of evaluation and methods of testing in the work of Joseph M. Rice and his Spelling Test. By and by, the intelligence scales of Binet and their American revisions emerged. Standardized achievement tests in different subjects such as Stone's Arithmetic Test, Buckingham's Spelling Test and Trabue's Language Test, etc. began to
appear in the field during this period.

(b) The Second Decade: 1910 - 1920: The Development of Testing:

During this period, some of the early standardized tests in intelligence and achievement were developed and a marked effort was made to get the new tests accepted both by the educators and the people. Many new tests and scales, too, were devised, during this period. It would, however, be out of place to mention all of them. It would be sufficient to make a reference to what concerns the present study. Thorndike's pioneer work was done in 1910 when his first handwriting scale was developed. In this scale, there is a series of samples of handwriting in order of merit presented on a chart. Each sample was assigned, on the judgment of a jury of experts, a statistically determined numerical value or score. With the help of these samples and their corresponding numerical values, a teacher could easily assign a score to his pupils' writing. This scale of Thorndike's could, appropriately, be called the first scienti-
fically constructed test or the measure of educational achievement.

In 1911, Ayres published a scale wherein the samples of handwriting were arranged in order of increasing legibility, but the scores for the samples were established by less rigorous statistical methods than those employed in Thorndike's scale.

The Hillegas Composition Scale published in 1912, followed the Thorndike Quality Scale pattern. In 1913, Buckingham published a Spelling Scale in which the words were arranged in order of increasing difficulty. It was during this period that Terman's well-known revision of the Binet scale for measuring intelligence saw the light of the day.

(c) The Third Decade: 1920 - 1930: Extension of Standardized Testing:

Tests of intelligence and achievement advanced rapidly in the third decade. The need to classify personnel in the armed forces provided an opportunity for the construction and use of intelligence tests. Commercial publishers, too, came forward to publish tests for use in schools.
In 1920, Stanford Achievement Test batteries and Otis Intelligence Tests were published for the first time to be available for schools. More than 1000 standardized tests were constructed before 1930. The development of statistical techniques of test analysis, too, received considerable attention during this period.


The report of the Eight Year Study of the member schools of the Progressive Education Association published in 1930 in U.S.A. gave a new direction to the measurement movement. This new movement aimed not only at quantitative measurement of the specific aspects of the child's growth such as his intelligence, aptitude, achievement, etc., but also at qualitative as well as comprehensive appraisal and value judgment of his total growth.

It was during this decade that Cooperative Test Service published a large number of parallel forms of tests for secondary schools. Personality tests of Rorschach and other projective techniques
came into existence in this period. Many of the modern tools of evaluation, too, were introduced. Mention may be made of the interest inventories that were devised and the attitude scales and sociometric techniques that were developed. Anecdotal records were introduced as techniques of evaluation. Evaluation of newer tools, too, was undertaken. Tyler, Wrightstone and others carried on studies evaluating new practices in elementary as well as secondary schools.

(e) The Fifth Decade : 1940 - 1950 : Extension of Measurement & Evaluation :

During the fifth decade, the educational evaluation movement grew quite strong and was accepted as supplementing and correcting the inadequacies of educational measurements, practices and techniques. The techniques which were developed in the earlier decades were taken up for further check-up.

(f) The Sixth & the Seventh Decade :
1950 - 1970 : Trends in Evaluation :

In more recent years, the measurement movement has reached its peak and a large number
of standardised tests and hundreds of informal objective tests have been produced. The following trends in evaluation have become most evident:

(1) The present-day teachers are more concerned with important functional learning outcomes.

(2) In the modern tests of educational development, more emphasis is being laid upon the measurement of understanding and interpretation rather than isolated information.

(3) There is an apparent trend towards the excessive use of informal or teacher-made tests for instructional purposes to supplement the formal or standardized tests.

(4) Factor-analysis of mental abilities has developed and it provides a new approach in measurement and evaluation.

(5) Different techniques have been
developed to measure the role of an individual.

(6) Increasing attention has been given to the development and refinement of the tests of personality.

3. EVALUATION IN INDIA:

The evaluation of educational outcomes is comparatively a recent growth in India. It started in the sixties of this century. But mental testing for educational purposes started a long time ago. The honour for the pioneer work for the first standardization of mental tests goes to Mr. C. Herbert Rice of Lahore who translated Binet Scale into Hindustani and adapted it into a point scale in 1922.

However, prior to this, the American version of Binet or the S.B. of 1916 was taken up enthusiastically by some 'missionaries' in India with a view to understanding their students in missionary schools and colleges. In those early days either original tests in English language or their translations in Indian languages were adapted and used. At the time Mr. C. Herbert
Rice was collecting data for his work, Shri C.C. Chatterjee was trying Burt's group tests. Rice published the manual and norms in 1929. It was first a point-scale which he later converted into an age-scale. He has published his results on 5 to 16 years old boys only. However, it was not a complete scale based on children of both the sexes.

In 1926, Shri Naite used the Stanford Adult Test. He administered it to Bengali post-graduate students and reported his studies. By this time i.e. in 1927, Shri Chatterjee reported his preliminary studies with Burt's group tests upon college freshmen at Lahore. J. Manry of Ewing Christian college, Allahabad first adapted verbal group tests, the preliminary Classification Tests, to Indian Conditions and published them in 1927 in Urdu, Hindi and English. Shri L.S. Jha in 1934 used Hindi adaptation of the Simplex mental test by Mr. C.A. Richardson and Terman's group tests of intelligence and published his report on the basis of the available foreign norms. Jalota first prepared a group
tests. A number of Indian psychologists were trained at Edinburgh and they have contributed to psychological testing work after their return.

After independence a large number of group tests in various Indian languages, individual as well as performance have been prepared and standardized. In university departments and in training institutions work at different levels i.e. at Ph.D., M.Ed. or M.A. level has been done and some independent researches have also been published.

Attention, however, does not seem to have been much bestowed on achievement tests to be used to measure the achievements of secondary school pupils in various subjects of their study. A spur to this movement was given after Dr. Benjamin Bloom of Chicago University was invited to India and he explained the concept and techniques of examination reform in 1957. The former All India Council for Secondary Education under the guidance of Dr. Bloom launched the programme to reform the examination system in India. A number of seminars and workshops on educational evalua-
tion and testing for the lecturers of training colleges and the head masters and teachers of secondary schools were conducted by Dr. Bloom. These seminars were held at different places all over the country and have given the lead and definite programme of action to construct a valid, reliable and objective examination, the movement which was later emphasised by the University as well as Secondary Education Commission. The All India Council also, later on, decided to set up an Examination Unit.

The Government of India was very keen on introducing educational reforms at different levels and in different areas. To enable institutions and individuals to carry on researches, they made provision for grants for, big as well as small, research projects in the Fourth Five Year Plan. One of such provisions was the "Scheme for Researches on problems in Secondary Education". This scheme gave an impetus to carry on researches in the field of secondary education. Individuals as well as colleges and institutions turned towards this neglected, but very important aspect, of education.
Private enterprise in the field of researches in education and psychology was not wanting in the country before Government made the above efforts. Mention may be made of the valuable work done by the Gujarat Research Society. This society had already been taking keen interest in researches in the field of education as well as psychology since its inception in 1936. It had thought of the construction and standardization of Intelligence Tests as far back as 1942 and had prepared an individual scale for measuring intelligence of Gujarati-speaking children. It also encouraged individual efforts for researches on problems in education by granting small research grants for a master's or a doctorate degree. The keen interest of the Gujarat Research Society resulted in the birth of the psychological Research Institute in 1954.

Though, in the wake of the governmental encouragement and private enterprise, many effective tests have been developed in India almost on the same pattern as U.S.A., very
few educators are accustomed to the new approach in the teaching-learning process and in the conduct of the instructional programme. In fact, there are certain areas of educational measurement which have been overlooked by Indian scholars. One such area is handwriting, recognised universally as an important educational product. The present work: The Construction of a Gujarati Handwriting Scale, is an humble attempt in this direction. The scale is intended to provide objective measurements of the qualitative aspects of Gujarati Handwriting.

4. **INDIVIDUALITY OF MOTOR RESPONSES:**

One of the important skills given to the pupil in his school-life is the ability to comprehend ideas and express them through a language. In the case of expressing ideas in one's own handwriting which is a motor activity, uniformity is impossible. It is apparently observed that signatures are all practically different. It is very difficult to duplicate the signature of another person. And hence
bank accounts are operated on the basis of signatures only.

Each person has his own peculiar style of writing and this peculiarity is used in detecting forgeries. The fact that a motor activity is markedly individual could be well understood in such an activity as individuals playing the same piece on a piano. They may strike exactly the same keys but they do not do so in exactly the same way. Everyone has his own individual style. In most instances, performances relating to motor activities often vary from the accepted patterns of response. Not only do individuals vary in their motor activities but the same individual changes more often in motor performances from time to time than in some intellectual performances.

Such observations lead us to accept the view of Robert S. Ellis:

"Motor performances change considerably from day to day. Handwriting may change greatly according to the physical condition
and perhaps the mood of the individual" (1).

5. **HISTORY OF HANDWRITING**:

A brief resume of the history of handwriting will not be out of place to amplify the above observations. Now in the evolution of languages, writing developed along with reading. Writing began with the drawing of pictures, such as a circle, to represent the sun, a canoe to represent an actual canoe and so on. These ideograms always represented concrete things and were intelligible to everybody, whether he understood the writer's language or not. Later on the ideograms became symbolic, as when an Indian drew a pipe to represent peace and a bird with extended wings to symbolize haste. Even to-day the Roman numeral I is a picture of one finger and V, a representation of hand with its five fingers.

The next step was to combine ideograms to express ideas. This activity was more prominent among the Chinese. Commenting on this, Peter Sandiford writes -
"The Chinese ideogram to represent a coward is formed by combining the two things representing the heart and white (white-hearted). Working in this way, the Chinese elaborated signs for 40,000 words, a cumbersome system and a terrible strain on the memory." (2)

A great step in the development of writing came when conventionalized ideograms were taken to represent various kinds of sound (phonograms) instead of things. A simplification was at once obtained when the phonogram was made to represent a syllable instead of the entire word and eventually an alphabet was evolved when the sign symbolized one of the elementary sounds into which the syllable could be resolved.

Peter Sandiford in this connection observes,:

"Although all alphabets are ultimately derived from Egyptian hieroglyphs, through the Semites, the Greeks and the Romans, the Egyptians themselves never progressed to the discovery of a true alphabet. Alphabetic writing dates back to about 7000 years". (3)
6. THE TEACHING OF HANDWRITING:

A neglected area:

Handwriting, evolved as it is on the above lines, requires to be attended to as a skill. And again it is so important that its importance could not be overemphasized in the learning process. In day-to-day communication a person could very well be judged by his handwriting. Important as handwriting is in present day education, it seems to be more or less a neglected area. We find but very few young men in our colleges writing a good hand. Good writing demands a close observation of the shape of different letters and an ability to imitate the same. Moreover, there needs to be a neuromuscular coordination in the process.

Again, in order to write well, a child must be able to read correctly. It is for this reason that proper reading habits are necessary both for oral as well as written expression, not to speak of comprehension. But it is a sorry plight of present day education that proper reading as well as writing habits are in most
cases ignored, with the result that one seldom comes across the delicate script or embellished handwriting which was once considered a mark of culture. Calligraphy, of course, was an important attainment in days gone by when manuscript writing was the only means to preserve the lore. But the invention of the printing press and the expansion of education in the last some decades have put a stop to the cultivation of the art. No doubt, at present, writing a good hand is one of the important qualifications for the writer of accounts.

7. THE TEACHING OF HANDWRITING IN INDIA:

Barring the exception of certain schools, handwriting as an important educational skill is not looked after in our schools as it should be. Good writing requires cultivation of these habits: proper holding of the pen, correct sitting posture, attention to curves and slants, writing individual letters in their correct forms, proper gaps between letters, words and lines, etc. These habits are formed in primary schools which mostly are not in a position to
fulfill these objects primarily because the classes are over-crowded and the teachers are not well qualified for this task or are not in a position to bestow individual care. It is individual care that is of utmost importance, if we desire to improve the handwriting of our children. Copy-writing is suggested as a means to improve handwriting. Here, too, desired results will not be obtained but for individual attention. The selection of proper pens is also important. It may be suggested that the Montessorian approach to reading and writing may, to some extent, help the situation. Our primary training colleges would do better, if the aspect of improving handwriting is taken up in earnest by them and the prospective teachers themselves are trained in the art of writing good handwriting. It is hoped this, in some measure, would help improve the gloomy aspect of handwriting seen in our schools.

8. **THE PROBLEM OF HANDWRITING**

The problem of handwriting, thus, is the
discovery and development of muscular habits which will result in legible, speedy and aesthetic handwriting with the least expenditure of time and energy. Peter Sandiford represents the problem in a tabular form as follows: (4)

<table>
<thead>
<tr>
<th>Secured by:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Spacing of words</td>
<td></td>
</tr>
<tr>
<td>2. Spacing of lines</td>
<td></td>
</tr>
<tr>
<td>3. Slant of writing</td>
<td></td>
</tr>
<tr>
<td>(A) Legibility</td>
<td>4. Form and size of letters</td>
</tr>
<tr>
<td>5. Regularity of letters and slants.</td>
<td></td>
</tr>
<tr>
<td>6. Absence of flourishes</td>
<td></td>
</tr>
<tr>
<td>(B) Speed</td>
<td>1. Ease of movement</td>
</tr>
<tr>
<td>2. Rhythm of movement</td>
<td></td>
</tr>
<tr>
<td>3. Slant of writing</td>
<td></td>
</tr>
<tr>
<td>4. Size of letters</td>
<td></td>
</tr>
<tr>
<td>5. Continuity of letters</td>
<td></td>
</tr>
<tr>
<td>6. Methods of holding pen and placing paper</td>
<td></td>
</tr>
<tr>
<td>7. Kind of pen and paper</td>
<td></td>
</tr>
</tbody>
</table>
(C) Aesthetic  1. Form of letters
       Appearance. 2. Regularity of writing.

9. EVALUATION APPROACH TO THE TEACHING OF
   HANDWRITING:

   Any improvement in the existing pattern for an instructional procedure should start with a survey of the present set up. Many surveys on handwriting have been made in foreign countries, some in connection with the general surveys of the city school system and others as special surveys in this field. These surveys taken together give a fairly accurate measure of the attainments of pupils under existing conditions of instruction.

   A careful study of the present position demands an immediate development of measuring instruments suitable for the evaluation of handwriting. The use of such instruments would enable the educator to know the exact status of the learner which eventually would help him in planning the instructional programme of an individual pupil or his class.
10. **A SCALE FOR EVALUATION OF HANDWRITING:**

Evaluation is an essential component in the educational process to learn about the progress of education. The following are some of the main functions of evaluation:

1. To determine the extent to which objectives have been achieved by pupils.

2. To provide guidelines in improving school - curriculum, teaching methods, textbooks, etc.

3. To reveal individual differences and to make provision for guiding the growth of pupils.

4. To diagnose pupils' weaknesses and strengths and thus discover their current status.

5. To point out areas where remedial measures may be taken up.

6. To improve pupils' motivation in effective learning.
(7) To select and classify pupils.

(8) To provide learning experiences to meet the needs of individuals and groups of pupils.

Scientific studies on human development and abilities that develop in the child at each of the stages of development are available. Educational objectives should be in harmony with the psychological development of the child and the psychology of learning. Handwriting is universally recognised, together with writing, as a fundamental aspect of literacy. Any educational programme must give enough weightage to instruction in handwriting. The child must speak fluently and must be able to write legibly in his mother tongue. This is the minimum of what could be expected from schools.

The investigator of the present scale has tried to construct a scale of handwriting in Gujarati. It is hoped that it will help measure the quality of writing Gujarati symbols with a high degree of accuracy. It was also felt, while constructing the scale, that a separate
scale for measuring the speed of writing might become necessary. But the scope of the present study being limited, this scale is constructed to measure, only, the quality of handwriting.

11. THE SCOPE OF THE PRESENT SCALE:

The present scale will provide a standardized measuring tool. It will help the teacher to assign numerical scores for the quality of handwriting in the Gujarati language. While considering the quality of handwriting almost all possible components of qualitative aspects of handwriting have been considered. However, certain factors affecting quality like speed, the use of writing materials, etc. are excluded, because separate norms are required to be established by preparing another scale. The components taken into consideration for handwriting quality are listed in chapter 5. The scale prepared is specially meant for assigning scores to handwriting specimens of the pupils of Gujarat attending Stds. V to XI.
The immediate purpose for which the scale is constructed is to use it for the evaluation of the quality of handwriting in Gujarati. However, it may be used for the following purposes, too:

(1) For the selection to certain professions, such as clerks, record writers and others, which demand better handwriting.

(2) As a crude basis for the diagnosis of specific weaknesses in Gujarati handwriting so as to help in remedial instruction.

(3) For the selection and the grouping of pupils for certain specialized educational programme which requires a minimum level of handwriting quality.

(4) As a tool of educational and psychological research in which handwriting is one of the variables to be measured.
12. ASPECTS OF THE FINAL SCALE:

While constructing the final scale, all the available procedures of evaluation are taken into consideration. The scale was standardized on a sample of 2069 pupils of Std V to XI studying in different schools of the state. A high degree of objectivity was maintained by standardizing methods of administration, scoring procedures and interpretation. The reliability and the validity of the scale has been established by most appropriate methods. Separate grade norms for boys and girls are provided to facilitate the interpretation of the scores. A test manual is also prepared for the scale. The details regarding various procedures will be presented in the following chapters.
BIBLIOGRAPHY


3. Ibid. Page No. 356

4. Ibid. Page No. 355

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