CHAPTER II
HISTORY OF TESTING AND STUDY OF RELATED LITERATURE
CHAPTER II

HISTORY OF TESTING

AND

STUDY OF RELATED LITERATURE

2.01 : Introduction
2.02 : Significance of Measurement
2.03 : Brief History of Testing
2.04 : Testing Movement in India
2.05 : Review of Achievement Tests
2.06 : Review of Question Banks
2.07 : Summary
2.08 : References
2.01 : **Introduction** :

The problem undertaken for research has been stated and defined in the first chapter. Before a systematic presentation of the plan and procedure of research along with its various stages is made, it is essential to understand the status of this kind of research in the educational world. Such an understanding would help the reader in appreciating the contribution of this study.

2.02 : **Significance of Measurement** :

Measurement goes on constantly everywhere and it seems reasonable that the process of measurement has been used since long. As man came into contact with other men and began to exchange and share ideas, experiences and commodities, it is likely that he must have devised at least some crude standards to measure for the purposes of barter. Earliest records indicate that in ancient times man had developed some system of measurement. The excavations at Mohen-jo-daro, that revealed the striking regularity of the streets, the correspondence of the rows of houses and public buildings with the orientation of thoroughfares or streets, indicates that the people who had lived during that age, had developed a definite system of measurement. Similarly, the ancient Egyptians must have had fairly
accurate methods of measurement to build the pyramids. In the Aryan culture also there are references towards the measurements of the fire-place, where the "Yagya" (the Sacrifice) was to be performed, and the length of the "Samidhas" (dry grass), that were to be used for the sacrifice to the "God Agni" (The Fire).

As a result of remarkable scientific discoveries in the past few centuries, more and more accurate techniques of measurement have been developed. The refinements in these techniques eventually affected all fields of knowledge including education.

As newer and more refined methods of measurement were developed in natural sciences, they gradually influenced methods and thinking in educational field also. The educators began to think that if a teacher wishes to judge the level of attainment of his pupils accurately and fairly, he must have accurate measurement techniques at his disposal, and know how to use them properly, with a view to interpreting the results obtained by using them. Similarly, he must be able to construct appropriate measurement devises, so that requirements inherent in his particular situation can be accurately appraised. Thus the unrefined, unstructured and subjective methods were replaced by the refined, structured and objective methods of measurement.
2.03: Brief History of Testing

The origin of the system of examinations can be traced back to antiquity. Examinations are as old as any formal system of education. The history of education reveals the fact that examinations of various types were an integral part of the system of education in the past.

Dave, R.H., while reviewing the system of examination, writes:

Chinese used examinations for civil servants in 200 B.C. The ancient educational institutions in Greece included examinations in the form of dialogues and debates as a part of their total system of education. Ancient universities in India, like Nalanda held examinations to select students for admission. In ancient times, when Gurukula system was prevalent in India, the Samavartana ceremony that used to be performed to mark the end of formal education for individual students or groups, included the final rigorous evaluation of students' accomplishments. All these examinations were either oral or essay type. The system of examination continued to be as it was during the ancient and medieval ages.

During the last one hundred years or so, unprecedented developments have taken place in various aspects of educational testing. Research approach was adopted as the principal method to innovate the tools and techniques of testing. It was attempted to make evaluation procedures more valid and reliable. This development took place because of many and varied factors. Some of them are as under:
(1) necessity of mass examinations,

(ii) use of public examinations for the selection of candidates for admission and award of certificates or degrees at the end of course, and

(iii) acceptance of certificates or degrees for the selection of personnel for high status employment.

A strong feeling about the necessity of improvement in the examination system was awakened among the educationists as well as masses. The examination system was criticised for countless defects in it. The first target of criticism was the involvement of chance factor in testing. Some pioneers in the field attempted to devise ways and means to remedy the malady.

The following are some of the earliest efforts made in this direction.

(i) In 1690, F.Y. Edgeworth wrote an article entitled "The Element of Chance in Competitive Examinations", in the Journal of Royal Statistical Society.

(ii) In 1894-95, J.M. Rice prepared a spelling test to ensure optimum objectivity and reliability. This test may be considered to be the first modern formal objective achievement test. A few other similar attempts were made in the beginning of the present century.
Eventually workers in the field accepted the research approach to improve examinations system. The development of concrete and sequential procedures to test standardization started a new era in the field of measurement including achievement testing. In order to improve objectivity and eliminate chance factor in testing the forms of questions were changed. The procedure of the administration of the tests was standardized. New statistical concepts such as reliability, validity, discrimination index, achievement norms and SE of measurement were adopted in improving achievement testing. All these developments helped in placing educational measurement on a scientific footing. Thus, achievement tests tended to provide objective and reliable tools to arrive at dependable findings, and the procedures of test standardization became popular among evaluators and students of education.

2.04 : Testing Movement in India:

Construction and standardization of achievement tests eventually found favour with Indian educationists and research workers. During the second quarter of the present century the process of standardizing achievement tests began to become popular among research workers. Several other innovations that were initiated and introduced in this field in the western countries became known to Indian educators and
and psychologists and a few studies to operate out these in Indian conditions were undertaken.

Dave, R.H., while taking a review of research in educational evaluation in India writes:

The developments in the field of research in educational evaluation that took place during the post independence period are indeed very interesting and significant. It may be observed that of the total research work done in the field of education during the past two decades or so the lion's share goes to examination and achievement testing.

In the "First Mental Measurement Handbook of India", Long and Mehta (1966) included 326 tests. These tests are of various types such as intelligence tests, achievement tests, aptitude tests, interest inventories, personality tests, etc.

In the "Directory of Behavioural Science Research in India from 1925 to 1965", Pareek and Kumar (1966) reviewed 902 studies in the area of achievement testing. These studies were related to examinations, general achievement, languages, mathematics, social studies, sciences, scholastic backwardness, etc.

Dave, R.H. (1968), in the "Third Indian Yearbook of Education - Educational Research", has reviewed 407 studies completed from 1941 to 1966. These studies cover individual research papers published in journals, aided and unsided research projects, M.Ed.
dissertations and Ph.D. studies. The review is mostly based upon either the M.Ed. dissertations or the published work. The categorywise split of the source material is as follows: M.Ed. dissertations about 68%, Ph.D. studies about 25%, published research papers about 25% and projects about 8%. The above data indicate that it is exclusively dominated by research studies conducted at the M.Ed. level. Dave (1966) reviewed only 10 Ph.D. studies, while at that time, i.e. by 1968, probably nineteen Ph.D. studies in education with seven more Ph.D. studies from other disciplines but related to the field of evaluation were available in the country. While categorizing studies reviewed by Dave (1966) according to the structure of this review, it is found that achievement tests, examinations, factors affecting achievement, prediction-admission-promotion and failures number about fiftyone, six, eighteen, nineteen, three and three respectively. Based upon the data from two types of information of Dave's review, viz. (i) the nature of source material and (ii) the nature of studies, as classified above, it can be inferred that most of the studies in the area of evaluation in India educational research are in the field of achievement test construction at the M.Ed. level only.
Passi and Sansanwal in the trend report in "Educational Evaluation and Examinations", have given a detailed account of the research activities done by Indian scholars and educationists in the area of educational evaluation and examinations at the Ph.D. level. This information is presented below in a tabular form. The areawise and periodwise distribution of Ph.D. studies in different subject areas is shown in Table 2.1.

Table 2.1: Areawise and Periodwise Distribution of Studies:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Tests</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Diagnostic Tests</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>4</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Examinations</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>11</td>
<td>10</td>
<td>10</td>
<td>-</td>
<td>33</td>
</tr>
<tr>
<td>Factors affecting Achievement</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>-</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Prediction—Admission—Promotion</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Failures</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>4</td>
<td>13</td>
<td>33</td>
<td>38</td>
<td>34</td>
<td>4</td>
<td></td>
<td>127</td>
</tr>
</tbody>
</table>

Observation: From this table it becomes clear that no research work in the field of achievement testing was done up to 1954 at Ph.D. level. In the years 1960 to 74...
there was a heavy concentration of Ph.D. studies in the area of achievement testing. Another interesting feature is that out of 127 studies completed during the period of 1944-75, 105 studies were completed during the period of 1960-74. Out of these 105 studies, achievement tests claimed 40. Again it can be observed that during the period 1975 onwards the construction and standardization of achievement tests had been paid less attention to.

2.05: Review of Achievement Tests:

Enormous amount of activity has been conducted in the area of achievement testing by the Indian scholars. Achievement tests are constructed in the areas of social sciences, languages, mathematics, sciences, home-science and physical education.

Passi, B.K. and Padma, M.S., in their article namely, "Educational Evaluation and Examinations - A Trend Report", reviewed many achievement tests constructed in various subject areas such as history, civics, English, Hindi, mathematics, general science, home-science, physical education, etc. This report also consists of achievement test batteries constructed and standardised by Aram et al., Buch et al. and Vanajakshi A.

A brief review of some of these achievement tests is as under:
(i) Aram et al. (1957) constructed and standardized achievement test in English, general science, social studies and mathematics for the middle school stage.


(iii) Buch, M.B. et al. (1960) constructed and standardized achievement tests for standard VIII of secondary schools in Gujarat in the following subjects - (i) Gujarati, (ii) English, (iii) history, (iv) geography, (v) arithmetic, (vi) algebra, (vii) geometry, and (viii) general science.

(iv) Achievement test in Hindi for class VIII was constructed and standardized by CIE(1962), Delhi.

(v) Dash, S.C. standardized a battery of achievement tests for students of class VII in the Basic and Traditional schools of Orissa.

(vi) De, R.K., constructed an achievement test in Educational Psychology. This test has some resemblance with the present study.

(viii) Gupta, J.S. (1962) constructed and
standardized an achievement test in general
science for class VIII in Hindi.

(ix) Jha, S.K. et. al. (1964) constructed and
standardized an achievement test in Hindi
for classes V, VI, VII and VIII.

(xi) Kapoor, I. (1968), constructed and
standardized an achievement test in home-
science for high school classes of
Uttar Pradesh.

(xii) Misra, L.M. (1968), constructed and
standardized an achievement test in history
for high school classes of Uttar Pradesh.

(xiii) Pendharkar, V.Y. (1965), constructed and
standardized tests in arithmetic for
standards V, VI and VII for children studying
through Marathi as the medium of instruction
in Greater Bombay.

(xiv) Rup, Prakash, (1968), constructed and
standardized an achievement test in "every-day
science" for class VIII students of Punjab.

(xv) Saraf, S. (1964), constructed and standardized
an achievement test in history for class XI
of schools in Delhi.

(xv) Sheth, V. (1967), constructed and standardized
an achievement test in general science for
standards V, VI and VII for children studying
through Gujarati as the medium of instruction
in Greater Bombay.
(xvi) Saxena, K.N. (1960), constructed and standardized an attainment test in general science for class VIII in Uttar Pradesh schools.

(xvii) Shukla, N.N. (1957), standardized an achievement test in physical education for boys in secondary schools.


(xix) Vanajakshi, A. (1970), constructed and standardized achievement tests in non-language subjects namely, social studies, general science, and elementary mathematics for class VII of Andhra Pradesh.

Passi, B.K. and Sansanwal, D.N., in their article namely, "Educational Evaluation and Examinations: A Trend Report," reviewed many achievement tests constructed in various subject-areas such as physics, general science, general mathematics, social studies and science. A brief review of these achievement tests is as under:

(i) Chhaya, M.P., constructed and standardized an achievement test in Physics for standards VIII and X of (i) The Central Schools, (ii) Public Schools of Central Board of Secondary Education, (iii) Schools of the Council of
Indian School Certificate of Education of Bombay, Delhi, Calcutta and Madras.

(ii) Gour, R.N. (1973), constructed and standardized an achievement test in different aspects of Hindi for matriculation students of Hariyana.

(iii) Hira Devi Sujen Singh (1973), constructed and standardized achievement tests in general science for standards V, VI and VII for children studying through Sindhi as the medium of instruction in Greater Bombay.

(iv) Md. Faisul Islam (1975), constructed and standardized an achievement test in general science for students of class VII of Bihar.

(v) Patel, J.M. (1977), prepared and standardized achievement tests in Hindi, history and geography for delta class (Standard VIII).

(vi) Sali, V.Z. (1977), constructed and standardized unit tests in physics for pupils of standard VIII for Maharashtra State Board of Secondary Schools.

(vii) Sharma, V.S. (1976), constructed and standardized a battery of tests in mathematics and general science for the delta class pupils studying in different parts of Rajasthan.

(viii) SIE (Kerala) in 1965, constructed and standardized an achievement test in general mathematics for standard VIII students in Kerala.
(ix) SIE (Kerala) in 1965, constructed and standardized an achievement test in general science for standard VIII students in Kerala.

(x) SIE (Kerala) in 1965, constructed and standardized an achievement test in social studies for standard VIII students in Kerala.

Besides the achievement tests mentioned above, one more study was done in this field. Ketkar, S.R. (1981), constructed and standardized unit tests in Mathematics for standard VIII (Marathi medium) based on the syllabus of Maharashtra State.

Regarding these achievement tests the following observations can be made:

(i) All these tests are constructed and standardized on approximately an uniform pattern. Different investigators have used samples of different sizes and natures. The samples have been drawn from grades III to XI. Almost all the tests have been administered twice each. Item-analysis has been done. The tests have been validated against the criteria of experts' judgements, or the researchers' thought processes. The reliability coefficients have been calculated either by K-R formula or by Split-half method. The mean, SD have been calculated.
(ii) Most of the achievement tests in social sciences constructed by various researchers are available for grades V to XI employing samples from various states.

(iii) Achievement tests in social sciences have not been developed for all subjects even within a state.

(iv) They are not available in all the states for even one subject.

(v) For certain subjects like economics and sociology they have not been standardized at all.

(vi) Almost all these efforts are confined to the construction and standardization of achievement tests in school subjects only. There are hardly any tests constructed and standardized for the subjects taught at college levels, with the exception of the achievement tests constructed by Dr. R.K. The researcher while going through the available literature regarding achievement test construction was struck by this fact and thus chose the present subject for study.

The present study had been undertaken to develop an achievement test in Educational Psychology for B.Ed. Marathi Medium students and to prepare a Question Bank. The procedure followed for the development of an achievement test has some common points with that of an achievement test developed by Dr. R.K. (1965) from
Calcutta University. A detailed review of the work done by that investigator is given in "A Survey of Education" published by C.A.S.E., Baroda in 1974, which is as under:


The present work was undertaken for developing an achievement test in educational psychology, which is taught in the teacher training colleges, having the qualities of objectivity, practicability, consistency and relevance.

At first, the objectives were defined in detail under the general heads, such as knowledge, comprehension, application, analysis, synthesis and evaluation. Then, by the process of analysis of textual materials and syllabi, the following topics were selected as contents of the test: the scope and nature of educational psychology, heredity and environment, learning, motivation, intelligence, memory, imagination, thinking and reasoning. Determination of weightage to different objectives and content areas was carried out by expert judgement. As many as 223 items were prepared which fitted the specifications of objectives and covered the content areas selected. They were submitted to the judges for verification of their coverage and relevance. The test was then applied to 320 student-teachers belonging to the three levels of training—Junior Basic, Senior Basic and Post-graduate Basic Training and B.T. The last two were equal in status, validity of the test was determined by expert judgement, logical analysis and students' thought process. Seventy five items were retained for the final form of the test. Reliability of the test was found by K-R formula.

The results of the study were as follows:

(i) The mean item difficulty and the mean discriminating power of the final test were .53 and .30 respectively. (ii) Reliability coefficient was found to be .96. (iii) The mean of the scores of the original test was 106.78 with a standard deviation of 20. (iv) The distribution approximated
to normality. (v) The time limit of the final form of the test was found to be three hours on the basis of the proportion of examinees who had completed the test. (vi) The test appeared to have wholesome influence on the teaching method, selection and guidance of students and acquainting the student-teachers with the principles of objective-based examination which they might apply in their fields of specialisation.

Though the present study has been designed on similar lines mentioned in the above two paragraphs, it differs from the latter on the following points:

(i) The present study undertakes to prepare a 'Question Bank' which consists of objective based and objective type items having varied difficulty values and positive discriminating power.

(ii) The 'Question Bank' and the Achievement Test are prepared for only Marathi medium B.Ed. students.

(iii) In addition to the topics covered by De's test, this achievement test covers some more topics such as personality, stages of human growth and development, individual differences, mental hygiene and guidance and counselling.

(iv) The items have been grouped into 8 subtests. The number of students taking each of them ranged between 229 to 430.
(v) The sample consisted of B.Ed. students studying during the academic year 1979-80 in four Colleges of Education situated in Pune City only.

(vi) The SE M, SE Md, SE SD and SE Q have been calculated.

(vii) Norms have been prepared in terms of percentiles, stanines and standard scores.

(viii) Normality of the distribution of Achievement Test was checked against the following three criteria:

(I) Skewness and SE Sk,

(ii) Kurtosis and SE Ku,

(iii) Comparison of a frequency polygon/histogram of obtained scores with the normal curve of the same area, M and S.

(ix) In addition to reliability coefficient by K-R formula, index of reliability of the test has been calculated.

(x) Reliability of the test scores have been calculated in terms of SE Sc and regression equation.

(xi) Index of reliability has been considered as a validity coefficient. Predictive validity has been established by the following two methods

(1) criterion related validity, and

(2) validity in terms of decision-making accuracy.
2.06: **Review of Question Banks**

University Grants Commission has taken cognizance of the urgency of seeking solutions to the problems of examinations. In the document of U.G.C. (1973), "Examination Reforms - A Plan of Action" it has taken note of the problem and has suggested various measures to improve examinations. Among several recommendations made by the U.G.C., building of Question Banks is the most important one. As a result, projects for developing Question Banks has been undertaken by various institutions and individuals at various levels from pre-degree upto graduation in various faculties such as Arts, Science and Education. Some of the Question Banks have been reviewed briefly.

**06.a: A Question Bank by Gnanpragasam, N.S.**

Gnanpragasam, N.S. had undertaken project of setting up a Question Bank of objective tests in Loyola College, Madras (1975)? A brief description of this Question Bank is as follows:

The project was undertaken as the College Science Improvement Programme (COSIP) initiated by U.G.C. ... The most important outcome of the project is the creation of Loyola Chemistry Question Bank. The bank consists of objective-type questions, mostly at the B.Sc. level, numbering 2983. The questions have been classified into various topics in the three main branches of Chemistry, namely, organic, inorganic and physical.
The Association of Indian Universities undertook question banking as a development project. It has built, initially, Question Banks in 10 subjects namely, Mathematics, Physics, Chemistry, Botany, Zoology, History, Geography, Psychology, Commerce and Economics at the first degree level. Nearly 60,000 questions/items in those subjects are available in specially designed 6" x 5" cards and stored in Kardex trays.

These questions are collected from the following sources:

(i) Question Bank workshops conducted in various colleges.
(ii) teachers/item writers from all over the country, and,
(iii) the past examination papers of universities in the relevant subjects.

The researcher studied the "Question Bank Book Series, 08 Psychology" published by the Association of Indian Universities, Delhi. The questions/items are based on all topic areas of the subject Psychology at the first degree level. The following information is provided along with the Questions/Items in the Question Bank:
Types of questions/items:

The questions/items in the Question Bank are of various types. They are as under:

- (i) Constant alternative (CA)
- (ii) Multiple choice (MC)
- (iii) Multiple facet (MF)
- (iv) Matching (M)
- (v) Rearrangement (R)
- (vi) Simple question (SQ)
- (vii) Complete Question (CQ)
- (viii) Short answer (SA)
- (ix) Long answer (LA) and
- (x) Problem solving (PS)

To each type is allotted a separate code word which is reproducéd along with the item in the Question Bank.

Objectives to be tested: The questions/items purported to test the following objectives:

Knowledge:

- (i) Knowledge of specifics, terms, specific facts. (A1)
- (ii) Knowledge of conventions, trends, sequences, classifications and categories, criteria, methodology. (A2)
- (iii) Knowledge of universals, abstractions, principles and generalizations, theories and structures. (A3)

Skill:

- (i) Skills of sketching, drawing, computing, reading.

Comprehension:

Translation (C1)
Interpretation (C2)
Extrapolation (C3)

Application:

- (i) Using information in concrete situations. (E1)
- (ii) Problem solving (close as well as open ended). (E2)

Analysis:

- (i) Analysis of elements and relationships. (E1)
- (ii) Analysis of organisation. (E2)

Synthesis:

- (i) Production of unique communication, summary. (F1)
- (ii) Production of a set of abstract relations, a plan or proposed set of operations. (F2)
Evaluation:

(i) Judgement in terms of internal evidence. (G1)
(ii) Judgement in terms of external evidence. (G2)

To each objective is allotted a code number which is reproduced along with the text of the item in the Question Bank.

The items in the Bank are of various type. A specimen of an item in the Question Bank is as shown in Table No. 2.2.

Table 2.2: A specimen of an item in the Question Bank

Series 08: Psychology

2896: Psychology of adolescent; MC; E1; 1 mt; 1 mk.

The runaway reactions seem to be caused by
(a) Low intelligence and achievement.
(b) Low socio-economic level.
(c) Pathogenic family condition including parental rejection.
(d) Peer influence.

This item is of multiple choice type, testing the analysis objective and expected to require 1 minute to answer it. It carries 1 mark. It is important to note that question/item analysis for finding the difficulty value and discriminating power of the items which is central to the idea of question/item bank is not done in this book series. It is expected that the universities and teachers would undertake to do question/item analysis and report their results to the Association of Indian Universities.
S.N.D.T. Women's University has established an Examination Reform Unit (E.R.U.) in the year 1976. This unit is working under Dr. Upasani, N.K., and has prepared Question Banks for B.A. Part I, B.A. Part II and B.Ed. courses in subjects like Psychology, Economics, Geography, Sociological and Philosophical Foundations of Education, Psychological Foundations of Education, etc. Each of the Question Banks includes a number of questions/items and are of one of the following types:

(i) Essay type,
(ii) Short-answer/short note type, and
(iii) Objective type.

The form in which the essay type and short answer/short note type questions are presented is shown in Table 2.3.

<table>
<thead>
<tr>
<th>Q.No.</th>
<th>Topic No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Point :</td>
<td>Objective :</td>
</tr>
<tr>
<td>Specification :</td>
<td>Question :</td>
</tr>
<tr>
<td>Marking Scheme :</td>
<td>Points :</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Marks</td>
</tr>
</tbody>
</table>
Note: This proforma has not been very strictly followed for all the questions. There are some variations, for example in some questions marks allotted are mentioned and in case of some questions they are not.

These Question Banks also contain a number of objective-type items. The pattern for writing these items is slightly different from that of short-answer type or essay-type questions. It is as shown in Table 2.4.

Table 2.4: Proforma for writing an Objective-type item in the Question Bank prepared by E.R.U. of S.N.D.T. Women's University.

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Unit</th>
<th>Teaching Point</th>
<th>Objective</th>
<th>Specification</th>
<th>Question</th>
<th>Stem</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(i)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(ii)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(iii)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(iv)</td>
</tr>
</tbody>
</table>

Note: This proforma has not been strictly followed for all the items. There are variations, for example for some items the correct responses have been given and for some other items they have not been given.
The Question Bank developed by E.R.U. in the subject namely, "Psychological Foundations of Education" for B.Ed. courses consists of questions/items. This Bank also includes questions/items of the following types:

(i) Essay type,
(ii) Short-answer and short-note type, and
(iii) Objective-type.

Marketing scheme and approximate time for answering the essay-type questions have been given along with the text of the question. For some of the short-answer and short-note type questions also marking schemes and approximate time for answering them have been given. The specimen of an objective type item is given in Table 2.5.

### Table 2.5: Specimen Item from the Question Bank in Psychological Foundations of Education for B.Ed. course, prepared by E.R.U. at S.N.D.T. Women's University

<table>
<thead>
<tr>
<th>Q. 37</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 5: Learning</td>
</tr>
<tr>
<td>Teaching Point: Types of Learning</td>
</tr>
<tr>
<td>Objective: Knowledge</td>
</tr>
<tr>
<td>Specification: The student recognises the characteristic of classical conditioning</td>
</tr>
</tbody>
</table>

**Test item:** With regard to human behaviour classical conditioning is -

**Alternatives:**
- (a) Probably the basis for learning motor skills.
- (b) Probably the basis for emotional reactions.
- (c) Probably the basis for the development of language.

(Choose the appropriate answer from the above and mention its alphabet in bracket given below.)

**Key:** (b)
Observation: This item is purported to test knowledge objective and is provided with the alternatives. The correct response is mentioned along with the text of the item. Marks allotted and time required to answer it have not been mentioned.

This Question Bank consists of questions/items based on the topics included in the subject namely, "Psychological Foundations of Education". The number of items is not very large. It doesn't cover all the topics from the prescribed courses. Many important topics such as, personality, individual differences, mental hygiene, etc., have been excluded from this Question Bank. The objective type items in the Question Bank have been tried out on a small sample, which consisted of some students from two Colleges of Education. The difficulty value and discriminating power of each of the items have been calculated.

The Question Bank prepared by the researcher is different from the abovementioned Question Bank in the following respects.

(i) It contains only objective type items.

(ii) The number of items in it is substantially greater than that in the Question Bank prepared by E.R.U.

(iii) The content coverage of this bank is more than that prepared by E.R.U. It is more comprehensive in nature.
(iv) The item has been tried out on a larger sample.
(v) The Question Bank is divided into 8 sub-tests whereas the Question Bank prepared by E.R.U. is a single unit.

2.97: Summary:

This chapter began with the discussion of the significance of measurement in various phases of human life including education. Further, it deals with the history of testing movement in the world. A comprehensive and clear picture of previous studies conducted in the field of achievement testing has been drawn. Review of some of the achievement tests revealed the fact that though there are numerous achievement tests for a teacher's common use, there is hardly any achievement test available for college going populace. This is applicable to the B.Ed. level also. There is no achievement test available to test the attainment of the B.Ed. Marathi-medium students. Dr. Dc. R.K. has prepared an achievement test in Educational Psychology for students in training colleges at three levels - Junior Basic, Senior Basic, Post-graduate Basic Training and B.T. The present study is different from this study in many respects, such as the number of topics covered, the statistical techniques used for description and analysis of scores on the test and methods used for ascertaining the predictive validity of the test.
The concept of Question Banks is comparatively of recent origin. Its roots can be found in the recommendations made by the University Grants Commission in respect of Examination Reforms. The review of the "Question Bank Book Series 08, Psychology" reveals that though there are thousands of questions prepared by the Association of Indian Universities, question/item analysis data is not available. This concept of item-analysis is central to the idea of Question Bank.

The Question Banks prepared by the E.R.U. of S.N.D.T. Women's University are not published. They include many questions/items of various types such as, essay, short-answer, short note and objective.

The present study is undertaken to plug the loopholes in the work done in the field of achievement testing and Question Banking. The researcher has attempted to prepare a Question Bank in Educational Psychology for B.Ed. Marathi-medium students. An attempt is also made to develop an achievement test in Educational Psychology for B.Ed. Marathi-medium students consisting of objective-based and objective-type items.
References


2. Ibid., p. 63.


9. Ibid., p. 259.


11. Ibid.

12. Ibid.