CHAPTER - 6
SUMMARY, FINDING, RECOMMENDATIONS AND SUGGESTIONS

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SUMMARY, FINDINGS, RECOMMENDATIONS AND SUGGESTIONS

The present chapter deals with the summary, findings and suggestions based on the present study.

In the field of education, there is a need for further research in the field of test construction. This objective is fulfilled in the present study by preparing a CRT.

6.1 The problem of the present study

'The preparation and standardization of a Criterion-Referenced Test in Mathematics for the pupils of Std. X in the Gujarat State'

6.2 Objective of the Present Study

1. To develop a Criterion-Referenced Test (CRT) in Trigonometry for Standard X

2. To standardize (validate) the test

6.3 Procedure of the Present Study

1. The preliminary considerations consisted of four aspects viz. test purpose, specification of content area, identification of groups to be measured and identification of qualified staff. All these four aspects were duly treated.

2. The selected topic of mathematics was specified minutely. The well-defined behavioral domains were prepared on the basis of content.

3. Twelve item-domains were prepared after adopting Hively's item form-item writing technique.

4. The logical view was conducted to assess congruence between items and objectives. The evaluation of the representativeness of item measuring each objective was done by employing a five-point scale.
The deficient items were duly revised and written again.

The empirical review was conducted to examine the instructional sensitivity of items. An initial form of the test was administered to 200 examinees-girls as well as boys selected from the sample for the empirical review.

After the empirical review, it was found that no item require revision.

The items were selected domainwise from universe of items randomly. The fill in the gaps-type of items were prepared for all the domains.

Two types of reliability - the domain score estimation and mastery classification decision were established.

Three kinds of validity - content, construct and criterion related - were estimated. The test was administered to examinees-girls as well as boys selected as sample. The present group was different from that group which was employed for the empirical review.

The cut-off scores were determined for all the domains.

The manual of the test was also prepared.

6.4 Findings

The following were the findings of the present study.

1. The minute specification of the domain of Trigonometry enabled the investigator to prepare twelve well-defined behavioral domains.

2. The investigator prepared maximum number of items adopting Hively's item form technique. For this, textual and non-textual examples were selected.

3. In the initial form of the test, 136 items were prepared. From this, 100 items were selected in the final form.
All the items were logically reviewed. There was perfect congruence between item and objective. The IOCI of each item was +1.

Each item was representative of its objective and the degree of representativeness was high.

The PPDI of all the items ranged from 0.54 to 0.89 for all the domains.

The items were selected randomly from the universe of items which were logically and empirically reviewed.

In the final form 100 items were decided. The final form was used as pretest and post test for the present study.

The content validity - IOCI of each items was +1.

The construct validity was measured with the help of graph-based unidimensional indices of each behavioral domain. The indices ranged from 0.21 to 0.40. The mean of all unidimensional indices was 0.29.

The critical ratio of differences of the mean scores of instructed-uninstructed groups of all the behavioral domains was significant at 0.01 level.

The SEM of examinee's estimated domain score in each behavioral domain ranged 0.113 to 0.164.

The indices of mastery-non mastery classification decision reliability ranged from 0.90 to 1.00. The present test proved reliable for mastery-non mastery classification.

The cut off score determined for each of the behavioral domains of the test ranged 3 to 5.
6.5 The Recommendation for the use of the Present Test

In the present study, following are the recommendation for the use of the present test.

1. The present test can be used for the measurement of achievement after teaching the unit of trigonometry.

2. The present test can be used to evaluate the implementation of the educational programmes like programme learning and module based on trigonometry.

3. The present test can be used to classify the examinees into mastery-non mastery categories for mastery learning of trigonometry.

4. With the help of the present test, a teacher can diagnose the learning deficiencies as well as teaching improvement of trigonometry.

6.6 Suggestions for Future Research

The investigator faced some problems during the implementation of the procedure of developing and validating the present CRT. As the investigator had limited time and funds, it was impossible to solve those problems. Hence, the investigator makes the following suggestions,

1. The CRT can be developed and standardized on various subjects at various school levels and in different areas.

2. Item-writing technique can be changed for writing items of the test and results can be compared with the results obtained by adopting Hively’s technique.

3. The effect of various methods for finding PPDI can be examined

4. A comparative study of the cut off score determined by adopting other empirical methods can be made.
The effect of the varying number of items in behavioral domains on the
determination of the cut off score can be studied.

A comparative study of the undimensional indices of behavioral domains
of CRT obtained by factor analysis as well as by graph theory can be
made.