Chapter-1

Introduction

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1.1.0 Introduction

The Education is intended to develop basic learning skills, reading, writing, arithmetic and life skills, necessary for the children to survive and improve the quality of life. During childhood, developments in the domains of literacy and numeracy take place through acquisition of Basic Learning Competencies (BLC). These competencies represent levels of learning in a particular subject comprising basic knowledge, understanding, abilities, interests, attitudes and values. The competencies are essentially to be acquired by the end of a particular stage or standard of education. As far as the primary stage is concerned it is in fact the foundation stage for the development of basic competencies.

Primary education in particular has remained a serious concern of the nation since independence. A large number of programs and schemes have been initiated both by the Union and State governments to achieve the goal of the universalization of Elementary Education (UEE). This has led to the opening of a large number of schools with emphasis on enrolment and retention coupled with quality of education. The quantitative expansion seems to have overshadowed the quality of education. Research studies conducted both at national and state levels point out low level of learning in schools and the situation becomes worse as children move to higher classes. Poor level of achievement at primary level is a big demotivating factor resulting in repetition (stagnation) and drop out from the schools. Though there are number of factors which determine the quality of education, the most vital one that attracts the attention of one and all is the level of achievement. These levels of achievement for any nation are so important that they need to be known periodically to keep a tab on the general health of the education system.
Such a requirement warrants the conduct of periodical achievement surveys at different stages of school education in order to initiate remedial measures to improve the quality of learning. National Policy on Education (NPE) - 1986 recommended the conduct of periodical achievement surveys at all stages of school education. It emphasized the need for laying down the Minimum Levels of learning (MLL) for each stage of Primary School Education. This was visualized, so that the MLLs could serve as effective guidelines for organizing teaching-learning experiences and evaluating pupil’s achievement.

Recognizing this the Ministry of Human Resources Development (MHRD), Department of Education, set up a committee under the chairmanship of Prof. R.H.Dave, formerly director of the UNESCO Institute for Education, Hamburg, Germany, to study afresh the learning outcomes defined in the existing curriculum and to lay down minimum levels of learning (MLL) for all children who pass the primary stage of education. In 1994-95 the textbooks based on MLL approach have been implemented from Grade I, II in Gujarat State. Gradually it have been implemented up to Grade VII for all subjects.

The competency based approach does not indicate any new method of teaching. It aims at transforming the present conventional mode of subject oriented education into competency oriented one. The object of this new philosophy of education was to develop fully the inherent competencies of a child. This approach focuses on competency. Here the emphasis was given on activating the hidden capacities and potentiality of children and developing them to their fullest. Each and every competency was to be activated to the maximum extent possible and this in turn, leads to qualitative learning. If the competencies are not fully activated, the learning will consequently suffer. If almost the entire class a level of 75 % or so, the quality of the whole class improves, which will fulfill the aim of equity in MLL approach. Individual achievement of a child is very necessary to increase the over all achievement, and the individual achievement can be increased by competency based teaching. It was expected in MLL approach that 80 % of children in a class attain the level of 75 % (80X75).

To increase the achievement level from 35 % (At present 35 % achievement level is considered for the promotion in the higher class) to 75 % (decided in MLL approach) continuous and conscientious efforts of teachers and education officials were very necessary and change was required in teaching methods as well as evaluation procedures.

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1 MHRD (Dept. of Education, Govt.of India 1991), Report of the committee “Minimum Levels of Learning at Primary Stage”, New Delhi : NCERT (Govt. of India), p.2
Keeping in mind the approach of Minimum Levels of Learning (MLL) Gujarat have also adopted the basic concept of Activity-based and Joyful learning approach given by Shri Gijubhai Badheka, Gujarat have prepared, Activity based, Joyful learning and Competency-based textbooks up to grade VII. Activity based and Joyful learning approach were the main significance of the new textbooks. This approach leads to an individual achievement and performance. So along with the written and oral competencies, Action oriented competencies have been introduced for all subjects and all Grades. So new method of Pupil Evaluation should be introduced for especially Action Based Competencies. Because of this type of evaluation, a teacher can evaluate their student’s individual concept clarification, diagnosis and remedial teaching.

As Action Based evaluation was still a new intervention, it was strongly felt that some demonstrative pattern for Action Based testing (Constructed on Action based Competencies) was urgently needed for a teacher of Primary schools. So that a teacher may get some idea for putting Action based Evaluation into operation. With a view to meet this requirement the investigator has modestly ventured to develop Action based Competency based tests in Mathematics for Grade V, VI and VII.

According to NCF 2005, ‘A major goal of examination reforms should be to improve the reliability and validity of examinations and to make evaluation a continuous process aimed at helping the student to improve his level of achievement rather than at 'certifying' the quality of his performance at a given moment of time.’

The Evaluation Process and Examination Reform Assessment of performance is an Integral part of any process of learning and teaching. As a part of sound educational strategy, examinations should be employed to bring about qualitative improvements in education.

The objective will be to re-cast the examination system so as to ensure a method of assessment that is a valid and reliable measure of student development and a powerful instrument for improving teaching and learning; in functional terms, this would mean:

The elimination of excessive element of chance and subjectivity; The de-emphasis of memorization; Continuous and comprehensive evaluation that incorporates both scholastic and non-scholastic aspects of education, spread over the total span of instructional time; Effective use of the evaluation process by teachers, students and parents.
As the Action oriented, Joyful learning, Competency based approach were applied to grade V to VII, when the investigator selected the problem and grade V, VI and VII students were quite grown up in compare to grade I to IV children and can understand the instructions given to them easily, the investigator selected the students of grade V, VI and VII of the Gujarat state to study their achievement level. The main subject of investigator is Mathematics, so the investigator wanted to study the achievement level of the students in Mathematics. From the need and selection of the study, the research problem undertaken by the investigator is presented below.

1.2.0 Statement of the Problem

The problem selected by the investigator was entitled as -

“Construction and Standardization of a Competency based, Action oriented Test of Mathematics for the students of grade Five, Six, Seven”

1.3.0 Importance of the study

As has mentioned earlier that Activity-based, Competency-based and Joyful learning approach is a new intervention and it has become necessary to study the effect of such approach. The present study will be helpful to get an idea about the achievement level of Grade V, VI and VII students in mathematics.

The study will also become helpful to teachers in understanding the concept of Action-oriented and Competency-based evaluation. In an indirect way the teacher will also get an idea about the construction of Action-oriented and Competency-based test items. Thus this study will provide remarkable support to the teacher to get some idea of putting Action-oriented and Competency-based evaluation in operation.

It will also be helpful to get an idea about the Action-oriented competencies which are felt difficult by the students of Grade V, VI and VII so that teachers can identify them and proper remedial measures can be developed for the difficult competencies.

This study will also helpful for future investigators to apply different methods for Reliability and Validity through software for the Tests.

This study will also helpful to compare the achievement levels of the students of rural and urban area schools as well as the difference between the achievement levels of boys and girls.
This study will also be helpful to District Institute of Education and Training to get direction in conducting need based inservice training programmes for the primary teachers after getting the knowledge about the achievement level of the students and for the follow up work after the training programmes.

In short the present study will help in following matters.

1. Child-centered teaching and Continuous evaluation
2. For the measurement of Achievement
3. Diagnosis for deficiency of concepts
4. Self evaluation of Teachers’ own work
5. For the evaluation of teaching-learning material
6. To know the effectiveness of teaching method
7. To know the achievement of competencies of students during start, end and through teaching method.
8. For productive and effectiveness of teaching.

### 1.4.0 Objectives of the study

Without clear formulation of the objectives of research, the investigator is likely to wonder aimlessly in the selected field and achieve nothing worth while. Objectives give direction to the research work. They are necessary to streamline the investigation and make it fruitful.

The Study was undertaken with the following objectives.

1. To construct an Action Oriented test based on the Activity based competencies related to Mathematics of Grade V, VI and VII.
2. To establish the reliability and validity of the constructed Action Oriented test.
3. To study the achievement level of the students in Mathematics of grade V, VI and VII.
4. To study the effect of gender on achievement level of students of grade V, VI and VII.
5. To study the effect of Area on achievement level of students of grade V, VI and VII.

### 1.5.0 Hypothesis of the Study

\[ H_0 \] There would be no significant effect of gender on mean achievement of the students of Grade V.
Ho2  There would be no significant effect of gender on mean achievement of the students of Grade VI.

Ho3  There would be no significant effect of gender on mean achievement of the students of Grade VII.

Ho4  There would be no significant effect of area on mean achievement of the students of Grade V.

Ho5  There would be no significant effect of area on mean achievement of the students of Grade VI.

Ho6  There would be no significant effect of area on mean achievement of the students of Grade VII.

1.6.0  Operational Definitions of the terms used

The operational definitions are working definitions i.e. what is the meaning of the word in the situation, in which it is used.

The operational definitions of the terms used in the present study are given below.

Construction :

A construct is a tract of ability, temperament or attitude which is hypothesized to explain certain aspects of behavior. To construct means to coin the items from the material of related subject.

Standarisation :

The effectiveness of a test in achieving specified purpose can be established by test, reliability and validity. This procedure is known as Standardization.

Competency-based Tests :

The MLLs curriculum in the form of statement emphasizes competencies instead of content. It rightly makes a teacher aware that his success will be judged by the extent to which competencies are acquired by most of his students. The aim of MLL programme was to help students in achieving at least minimum essential competencies. It will be necessary to test them on a specific competency at a time
and again to find out whether they have acquired or not. Since the test has reference to competencies, it will be proper to call competency-based tests. The test items should be based on one competency at a time.

**Action-oriented test:**

A test or a set of items in which a student is required to perform Action. It is neither Activity based nor Performance based.

### 1.7.0 Limitations of the Study

Research is an endless quest for knowledge or unending search for truth. The universe is too wide to study for focusing on the problem of study. One has to make the study limited.

Following were the limitations the investigator resorted to make the study feasible within the stipulated time.

1. The present study was limited to the government primary schools with Gujarati medium.
2. The present study was regarding action oriented achievement in Mathematics of students studying in grade V, VI and VII.
3. Out of Written, Oral and Action based competencies, only Action based competencies were considered from the curriculum of the Mathematics for grade V, VI and VII students.

The present study is conducted to know the achievement level of the students for the Competency based and Action-oriented test in Mathematics with context to some variables. Variables selected for the study are as follows.

1. Gender (Rural and Urban)
2. Area (Boys and Girls)

### 1.8.0 Planning of the following Chapters

The method of presentation of research work requires careful attention. Any report to be comprehensive, should have a logical sequence of chapterization. Chapterization makes the work presentable and provides pleasure to the reader and guidance to future investigators. It makes the work easy for reference.
The second chapter gives a detailed information about the concept and basic theme of the Activity-based, Competency-based and Joyful learning approach.

The third chapter reviews the relevant literature. The synopses of various studies, related to the present study have been cited, stating their objectives, samples, tools, analysis and findings. How this study differs from the above mentioned studies are also discussed.

Research design and procedure of the investigation are outlined in the fourth chapter. A detailed description of methods of research and their selection, sampling procedure, the method of data collection and scoring of the data is given.

The fifth chapter gives a detailed information about tool construction. Item selection, Try-outs, Test administration, scoring keys of three tests are given.

Chapter six deals with the methods of estimating Reliability and Validity. Also the reliability and validity of the Tests have been derived.

Chapter seven provides a detailed data analysis and interpretation of the same.

Chapter eight gives a summary of the study. It contains the main findings of the study, the inferences arrived at after interpretation and suggestions made for future studies In other words this is a chapter of Retrospect and Prospect. Retrospect, because it gives a birds’ eye view of the study and Prospect, because it suggests new avenues for research.

As mentioned earlier, theoretical perspectives of the subject have now been presented in the next chapter.