Chapter-2

Theoretical Background of the study

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Chapter-2
Theoretical Background of the study

2.1.0 Introduction:

Detailed theoretical description regarding MLLs and New activity-based Text books has been given in this chapter from various angles. The sources of information used are divided into two categories-

1. The original report of the committee- “Minimum Levels of Learning at Primary Stage” which was printed and published by the Ministry of Human Resource and Development (MHRD) in February 1991.

2. Number of papers and reports presented by individuals and institutions like – The elementary Education Department of M.H.R.D., Department of Pre School, an Elementary Education of NCERT and other educational institutes at the time of national level workshops an at seminars during the implementation of the programme.

2.2.0 Present Scenario of Primary Education

India has one of the largest elementary educational system in the world. In line with the commitment of the country to provide elementary education to all children, educational facilities have been tremendously expanded during the post independence period.

According to the fifth All India Educational Survey, conducted by the NCERT in 1986, 94.5 % of the rural population is served by a primary school within a walking distance of 1 k.m. and 83.98 % of the rural population is served by upper primary school within walking distance of 3 k.m..¹ The expansion of facilities since independence is phenomenal

¹ Elementary Education Division (Dept. of Ed., 1993) A paper out line “Towards Quality Education for All” (New Delhi, MHRD, Govt. of India) p.2
and an important step in our endeavours to achieve the constitutional mandate of providing free and compulsory education to all children until they complete the age of 14 years, but the expansion has produced two sets of problems— one related to quality and another of equity.

In the base line studies conducted in various states, it has been found that the achievement levels of the students are very low. Most of the students were scoring around 40% marks in most of the subjects.

Only 30% of the students were mastering the desired competencies.²

In terms of learning outcomes, the system is apparently operating at a very low level of efficiency. If the destiny of our nation being shaped in our learning centers has to be bright, it is imperative that we should aim at not merely “Education for all” but “Quality education for all”

Recognizing the urgent need for rectifying this analogous situation with respect to quality, the National Policy on Education (NPE), 1986 called for paying immediate attention to improve the physical facilities of schools and laying down the minimum levels of learning, that should be achieved by all the children at different stages of primary education. Considering the need, the Department of Education, MHRD, Govt. of India, set up a committee under the chairmanship of Prof. R.H.Dave, Director (Retired) UNESCO, Institute of Education. The committee chose to state MLLs in terms of terminal competencies among different approaches. The report of the committee was published in February, 1991 and subsequently its implementation was taken up in right earnest. The programme has been initiated in 10 states including Gujarat³.

There have been a series of workshops conducted in Gujarat by Prof. R.H.Dave, whose presentation has been invaluable in shaping the course of the programme. The achievement levels of students have gone up from 40% to 60%— i.e. while 40% of students were at mastery level earlier, at the end of two years 60% of the students had achieved near mastery level. The teachers have shown extraordinary receptiveness to the strategy mainly because it has infused a sense of direction to the entire process and they find that the levels prescribed are not unachievable. With a little effort and constant guidance they have come to realize that change for the better is possible.

² Ibid, p.3
³ Ibid, p.14
2.3.0 Minimum Levels of Learning (MLL)

In line with the NPE (1986), Minimum Levels of Learning (MLL) have been specified by the committee, set up by MHRD, for lower primary classes, based on UNICEF assisted projects for “Primary Education Renewal” and “Developmental Activity in Community Education Participation”. After conducting rigorous empirical researches, NCERT, at the national level prepared a document titled “Minimum Levels of Learning” at primary stage.

These MLLs were competencies to be developed in school children both the formal and non formal channels. MLL were quality loaded concepts. The major focus of MLL was attaining quality with equity, which is necessary in the context of vast expansion of primary education, They were specified subject wise and class wise. They were fundamental and priority based concepts to be achieved by all school children in a specific period of time at primary stage. They were performance goals to be achieved by the class teacher. MLL were terminal competencies to be aimed at by the class room teacher from beginning of the academic year. These were functionally relevant and are achievable in order to accelerate the pace of development. They may guide the class room teacher in directing his mental energies for the overall development of children’s quality with equity.

Learning is the acquisition of knowledge, values, habits and attitudes and it is not merely accumulation of facts and figures. It is a relatively permanent change in the behavior and is not mere accidental. The term ‘Core’ refers to minimum contents. The core curriculum aims at developing the essential basic skills, which facilitate the individual to prepare for purposeful living. So, the term ‘Minimum Learning Competencies’ as a whole represents certain essential core elements to be imparted to the individual in a specific period. Minimum learning does not limit the potentialities of the individuals in the class room but helps them to go beyond it, deepening their potentialities and capacities.

Minimum Levels of Learning can, perhaps be specified in a variety of ways. For instance, MLL can be stated as expected learning outcomes defined as observable terminal behaviors. One may also go for a taxonomic analysis of learning objectives such as knowledge, comprehension, application, analysis, synthesis, evaluation and so on and accordingly indicate the expected learning outcomes. One can also state the MLL in terms of learning competencies expected to be mastered by every child at the end of a particular class or stage of primary education. Each competency can be further delineated in terms of sub competencies while specifying the content inputs or while specific measures of learning.
Education is unquestionably a process of empowerment leading to better and higher quality of life. Empowerment occurs when competencies are acquired. Competencies are the basic building blocks of the edifice of education. They are the “cells” of the power pack. The quality of learning depends, as a corollary, on how well the competencies are acquired and assimilated, on how well the building blocks are made and how the cells of the power pack are.

MLL approach essentially revolves round the concept of competencies. The ‘content’ is a means to achieve this end. The committee on MLL had talked of overload of content and facts in the existing curriculum, without a definite sense of direction. In order to eliminate the burden of the existing loaded curriculum. MLL were introduced, based on competencies and sub-competencies. The competencies decided by the committee were not only functional and relevant but were achievable, understandable and evaluable.

Since the MLL programme emphasizes mastery learning, quality was built into the approach. Against backdrop of widening disparities, a minimum level would ensure that achievable performance objectives are set, so that, practically all children can achieve a definite level of cognitive ability. It was only the “minimum” that is being set. The central concern is to ensure “quality education for all”.

Minimum Levels of Learning (MLL) approach essentially refers to a set of desired competencies to be achieved by practically all children at the level of mastery.

2.4.0 MLL in Mathematics

The main objective of teaching Mathematics is to help the child to quantify his ideas, to be precise in his thinking and to develop and utilize spatial concepts in his day to day life. Significance of Mathematics can also be viewed in the context of the revolutionary changes that are taking place in the fields of science and technology which are largely dependent on the strength of Mathematical infrastructure. Hence in the present age of rapid industrial and technological changes, a minimum substantial knowledge of Mathematics is essential. To achieve this, minimum competencies to be developed among the children at the primary stage which have been identified by the committee are given below.\(^4\)

1. The pupil performs computations with speed and accuracy.
2. The pupil translates verbal statements.

\(^4\) M.H.R.D. (Dept.of Ed., Govt.of India, Feb.1991), Report of the Committee-“Minimum Levels of Learning at Primary Stage” (New Delhi, NCERT, Govt. of India) p.6-19
3. In mathematical form using appropriate symbols as well as diagramatically.
4. The pupil makes reasonable approximations and estimate measurements.
5. The pupil applies mathematical concepts and skills to solve simple problems of day to day life.
6. The pupil thinks logically.
7. The pupil recognizes order and patterns.

The Mathematics curriculum at the primary stage was therefore designed to achieve these objectives.

2.5.0 Activity based Textbooks and Evaluation

From the report “Reformulating the early primary curriculum”- Implementing a ‘Progressivist’ approach⁵:

2.5.1 Continuity with MLL in Gujarat:

The report of the working group on Early Childhood and Elementary Education set up for the formulation of the Eighth Five year plan emphasized the need to lay down minimum levels of learning as criteria for assessing the outcomes of education at the primary educational. A seminar was organized by the ministry of Human Resource Development in 1989 (‘Basic Learning Needs and levels of attainment’) also recommended that concrete efforts be made at the national level to lay down minimum levels of learning. Building on these recommendations a committee was set up by the Ministry to draw up minimum levels of learning for Primary stage. This committee was set up by the Government of India in January 1990, was headed by Dr.R.H.Dave, who had served as Director of the UNESCO Institute for Education, Hamburg. Significantly, the committee decided that it would only indicate general directions for reorientation of educational programs in the case of the affective domain. The Minimum Levels of Learning (MLL) approach, as described earlier, is based on the mastery learning philosophy.

In mathematics, the committee identified five areas of learning: (i) understanding whole numbers; (ii) ability to add, subtract, multiply and divide whole numbers; (iii) ability to use and solve simple problems of daily life related to money,

⁵ Vijaya Sherry Chand (2004), "Reformulating the early primary curriculum”- Implementing a ‘Progressivist’ approach:Published by IIM, Ahmedabad and GCERT, Gandhinagar
length, weight, capacity, area and time; (iv) ability to use fractions, decimals, percentage; and (v) understanding geometrical shapes and spatial relationships.

2.5.2 The “Learning without Burden” Imperative:

Another important policy initiative, which emphasized many of the elements that were later influential in curriculum reform on the ground, was the effort of the National Advisory Committee appointed by the MHRD in 1992 to advise on how to reduce the burden on school students while improving the quality of learning (Learning without Burden, hereafter referred to as LWB). The committee made some important remarks on the barriers to a child-centered educational approach: mechanical routines, strict adherence to textbooks and syllabus completion as the goal of teaching, children not being given the opportunity to carry out experiments and observations.

The LWB Committee noted the tendency to regard the textbook as the only authoritative source of learning. Unfortunately, textbooks were often written so as to convey information or facts rather than promote thinking among children.

2.5.3 Child-Centered Education and Joyful learning:

The idea of “joyful learning” was conceptualized in programmatic form initially in the form of a teacher empowerment program. It began with the training of Class 1 and 2 teachers as the child cohorts progressed. This program was initiated at a time when the MLL curriculum was already being put in place, especially in Gujarat, where the inputs for implementation was quite strong under the leadership of the Gujarat Vidyapieth and Dr. R. H. Dave. The legacy of this experiment has played a facilitating role in the acceptance of the pedagogical changes that were introduced by the 1997 reform. A key figure in this experimentation, whose works have had widespread, but not deep, influence in generations of primary school teachers in Gujarat, was Girijashankar M. Badheka. A gold medal for children’s literature was instituted in his name, and some of Gijubhai’s work was published as part of the celebrations. He was reputed to be one person whose contribution to education in Gujarat was perceived to be only slightly less important than that of Mahatma Gandhi and Sardar Vallabhbhai Patel.

Prior to the Joyful Learning initiative, a major programme introduced by the British Overseas Development Administration, had introduced the concept of
child-centered education on a fairly large scale (Rao 1997). It’s focus was to move away from traditional teacher-centered classrooms into “activity based teaching and child-centered classrooms”. The key principles of this shift were (Rao 1997)6:

1. Providing learning activities: Keeping children active is important in helping learning as curiosity keeps them interested. Being physically as well as mentally active is important to help them learn.
2. Promoting learning by doing, discovering and experimenting.
3. Developing individual, group, whole class teaching.
4. Recognizing individual differences.
5. Using local environment: Teachers were supposed to generate activities that were based on availability of local resources.
6. Creating an interesting classroom by displaying children’s work and thus motivating children.

2.5.4 Guidelines for Mathematics textbooks:

The guidelines given for the Mathematics textbook were fairly specific, except for a general injunction that one has to proceed “from known to unknown, and from the concrete to abstract” and the broad recommendation that real-life experiences should be incorporated in to teaching.

2.5.5 Approach up to Grade Seven:

On the basis of the above process, textbooks were developed up to grade seven. With the help of series of workshops, the state resource group with the authorities were discussed a lot on the various aspects of Evaluation. In the traditional method, they have used only oral and written type of test or evaluation. But now the textbooks were totally based on the approach of Joyful learning, Activity based and Competency based. So now a days there must be some new method to evaluate this approach on children. So they have decided to introduce a new type of evaluation i.e. “A competency based and action oriented evaluation” which was treated as very important to evaluate the activity based approach.

The state authorities have approved this new method of Evaluation, and have conducted a training program of Teachers to understand this approach. The state

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The government had also organized workshops on how to construct questions on Competency based and Action oriented evaluation

The ‘written’ curriculum that underpinned the approach to curriculum review and textbook development attempted to communicate the philosophy and importance of activity-based teaching through the new textbook and the teacher’s edition. It indicates areas where the teacher could be flexible. For instance, teachers were encouraged to introduce the dimension of local relevance or even to extend the given lesson in ways that they felt would be suitable for the kind of children they were dealing with.

The key change in the educational approach was that the focus on activity-based methodologies was no doubt a major shift in teaching practice.

One of the part of the teacher’s edition had 20 sections which present an understanding of the new approach that was desired from the common understanding of the group after healthy discussion. One theme which underpins this part was “the need to see the curriculum as flexible since children’s social and physical environments vary”. It also indicates to teachers the flexibility that is available to modify songs and stories in Mathematics. The 20 sections were organized under the heads: Psychological Characteristics of children; principles to be followed while working with children; school management; skits for children; picnics; games; stories; the rationale for activity-based education; activities for developing observation skills, classification skills and inquisitiveness; experiments, identification of qualities and characteristics of objects; collection of objects by children; activities to develop concentration, thinking and creativity, speaking, conversation and expression; and difficult curves and letters. The teacher’s edition, with this level of detailed instruction was expected to be a reference tool that would enable the teacher to obtain both a conceptual understanding of the new approach and some practical advice on handling specific lesson.

The framework used to analyze the children’s interactions with the textbooks borrows from the most visible manifestations of children’s transactions dealing with pictures, learning through songs and learning by carrying out activities. If one considers these three elements as media for interaction itself can be considered at three levels: the child’s interaction with the textbook, interaction with other children
and interaction with the teacher- all three important features of an activity-based learning environment. These dimensions are presented in the figure given below:

- Learning with the help of Pictures:

  The predominant theme that emerged was, to put it very simply, children “appreciated and enjoyed” the pictures provided in the Mathematics textbooks. This reaction, however, is moderated by the level at which the medium for interaction-pictures-operates: at the individual child’s level, and secondarily through the interpretations of the teachers.

- Learning through Action songs:

  The element of learning through Action songs is an important aspect of the educational approach of the new textbooks. Therefore, the study made an attempt to assess the contribution of teaching through Action songs to learning among children, the reception given to the method itself, the extent to which teachers had internalized the approach and the impact of existing traditions of singing on learning Action songs in the school.

- Learning through activities:

  We now turn the third medium of interaction indicated earlier in figure – activities. An ‘activity’, as used here, indicates a game, a story, an exercise or a routine (other than songs and pictures which can also be used as part of an activity) carried out by the teacher with a particular learning objective in mind. Learning through activities was an important aspect of the stated philosophy that guided the development of the new textbooks. This study supports what should be a fairly obvious conclusion: that children enjoy “doing activities”, they like to remain active, like variety and try to
learn by “doing things”. Accordingly to most teachers, this aspect of their educational approach- helping children learn through specific activities – may be termed “the most successful”. That is, the textbooks have enabled the teachers to undertake the specified activities, and to conform to the meaning implied by the phrase ‘activity-based’.

For the Mathematics, the most striking feature of teacher practice as it has evolved with the textbook, is teaching with the help of things available in the teachers’ surroundings. Teachers have interpreted the principle of “using concrete things as much as possible” to mean the very early use of objects available in children’s environment, to develop a conceptual base for learning Mathematics. These teachers seem to have developed two qualities that the written curriculum aimed at: “Spontaneity” with respect to “Seeing mathematics concepts in day-to-day life experiences”, and “inducting” children into “relating mathematics concepts with real life experiences” so as to make the subject more interesting for the children.

One significant addition to Mathematics teaching practice has been the use of various activities, songs and games to supplement teaching with the textbook. These have been understood mainly as reinforcement activities and hence have been adopted by teachers in their day to day practice without difficulties.

The use of teaching-learning material (TLM) is another important change in the teaching-learning context. Many teachers use readymade aids, but most have developed TLM on their own or with the help of children.

2.6.0 Conclusion

The investigator can get knowledge of MLL approach, Activity based, Joyful learning, Competency based Textbooks and evaluation through this chapter. The investigator gave the details of Action oriented Competency and type of evaluation. On the basis of this chapter the investigator has selected Action oriented Competencies from Grade V, VI and VII of Mathematics and has prepared items for each and every Action oriented Competency.

Thereafter, the investigator studied such type of research works, in MLL approach also based on Criterion Reference Test and selected some of them. They are discussed in the following chapter.