ORIGINAL RESEARCH PAPER

Education

KEY WORDS: Mathematics, Classroom, Problem Solving, Teaching and Learning.

A STUDY ON CLASS-III MATHEMATICS CLASSROOM TRANSACTION

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ABSTRACT

An attempt was made in the present investigation is **Aim:** A study on class-iii mathematics classroom transaction. **Objective:** To study the implementation of class-III mathematics text book in classroom transaction. **Sample:** The sample of the study consists of 50 teachers were purposefully selected form primary schools Rangareddy district of Andhra Pradesh. **Tool:** Class room observation schedule developed by the researcher. This consists of 25 statements with multiple answers. **Conclusion:** The study revealed the problem solving strategies used by the teachers in class-III mathematics classroom transaction.

INTRODUCTION

Textbooks are artifacts. They are a part of schooling that many stakeholders have the chance to examine and understand (or misunderstand). In most classrooms they are the physical tools most intimately connected to teaching and learning. Textbooks are designed to translate the abstractions of curriculum policy into operations that teachers and students can carry out. They are intended as mediators between the intentions of the designers of curriculum policy and the teachers that provide instruction in classrooms. Their precise mediating role may vary according to the specifics of different nations, educational systems and classrooms.

Textbooks can be defined simply as books which are written for the purpose of teaching and/or learning from a single set of curriculum guidelines an infinite number of textbooks could be built, each with its own interpretation of the intent of the guidelines‖. Text books are the closest thing students have to working from the curriculum and the purpose of these textbooks is to assist with student learning. Despite such an obvious relationship between the textbook and the student there is limited evidence which outlines how students actually use their textbooks. In the context of education in general and mathematics education in particular research which highlights textbook use is limited to how teachers use their textbooks. Textbooks are a vital ingredient of successful learning. The importance of their role can never be exaggerated. Mathematics teachers have been found to rely on textbooks for at least 90% of their teaching time. This statistic can only highlight the need for good textbooks.

The main goals of mathematics education in schools are simply stated, there is one main goal the mathematisation of the child's thought processes.] According to George Polya, we can think of two kinds of aims for school education: a good and narrow aim that of turning out employable adults who (eventually) contribute to social and economic development; and a higher aim, that of developing the inner resources of the growing child. With regard to school mathematics, the former aim specifically relates to numeracy. Primary schools teach numbers and operations on them, measurement of quantities, fractions, percentages and ratios: all these are important for numeracy.

A Vision Statement By NCF -2005

In our vision, school mathematics takes place in a situation where:

- Children learn to enjoy mathematics: this is an important goal, based on the premise that mathematics can be both used and enjoyed life-long, and hence that school is best placed to create such a taste for mathematics. On the other hand, creating (or not removing) a fear of mathematics can deprive children of an important faculty for life.
- Children learn important mathematics: Equating mathematics with formulas and mechanical procedures does great harm. Understanding when and how a mathematical technique is to be used is always more important than recalling the technique from memory (which may easily be done using a book), and the school needs to create such understanding.
- Children see mathematics as something to talk about, to communicate, to discuss among them, to work together on. Making mathematics a part of children's life experience is the best mathematics education possible.
- Children pose and solve meaningful problems: In school, mathematics is the domain which formally addresses problem solving as a skill. Considering that this is an ability of use in all of one's life, techniques and approaches learnt in school have great value. Mathematics also provides an opportunity to make up interesting problems, and create new dialogues thereby.
- Children use abstractions to perceive relationships, to see structure, to reason about things, to argue the truth or falsity of statements. Logical thinking is a great gift mathematics can offer us, and inculcating such habits of thought and communication in children is a principal goal of teaching mathematics.
- Children understand the basic structure of mathematics: Arithmetic, algebra, geometry and trigonometry, the basic content areas of school mathematics, all offer a methodology for abstraction, structuration and generalization. Appreciating the scope and power of mathematics refines our instincts in a unique manner.

Review of Literature

Desai (1992) examined the spiral arrangement of sub-units in the mathematics textbooks prescribed for classes I to III in Maharashtra. The textbooks in mathematics produced by the Maharashtra State were analyzed. The researcher concluded that the spiral arrangement of sub-units was in keeping with the principles of child psychology and the sub-units were organized in 'simple-to-difficult' sequence.

Reddy, Malla (1997) collected the opinion of teachers on the mathematics curriculum and textbooks, used in primary level. The teachers felt that mathematics textbooks are suitably prepared and contained adequate exercises, but it should contain real life problems. They also expressed that the curriculum must be reformed as per the Minimum Levels of Learning (MLL).

Kaldrimidou, Sakonidis and Tzekaki (2003) examined teachers' interventions in students' mathematical work: a classification. Teachers' interventions during pupils' engagement with a mathematical task in the classroom affect considerably the mathematical meaning constructed by the

latter. In the present study, a categorization of these interventions is attempted and then used to analyze teaching episodes. The results of this analysis indicate that the dominant interventions are of a very directive character and often initiated by the teacher, thus canceling students' initiatives.

Suzanne Donovan and John Bransford (2005) examined how Students Learn: Mathematics in the Classroom. This book shows how to overcome the difficulties in teaching math to generate real insight and reasoning in math students. It also features illustrated suggestions for classroom activities.

Yeping Li and Dennie Smith (2007) conducted a study on Prospective Middle School Teachers' Knowledge in Mathematics and Pedagogy for Teaching - The Case of Fraction Division. The results reveal a wide gap between these PT's general perceptions/confidence and their limited knowledge in mathematics and pedagogy for teaching, as an example, fraction division. The results also suggest that PTs need to master specific knowledge in mathematics and pedagogy for teaching in order to build their confidence for classroom instruction.

Meriç Özgeldi and Erdinç Çakıroglu (2011) studied on mathematics teachers' use of textbooks in instructional process. This paper provides an analysis of mathematics teachers' use of curriculum materials. 13 elementary mathematics teachers participated in the interviews for how they used the curriculum materials, specifically textbooks. The purpose of this study is to examine what mathematics teachers do with curriculum materials and how they use them for mathematics. The results of the interviews indicated that mathematics teachers used different textbooks to make instructional decisions, and they mostly adapted problems and examples in a constructive way.

Patricia Campbell et al., (2014) suggested that the relationship between teachers' mathematical content and pedagogical knowledge, teachers' perceptions, and student achievement. This study of early-career teachers identified a significant relationship between upper-elementary teachers' mathematical content knowledge and their students' mathematics achievement, after controlling for student- and teacher-level characteristics. Findings provide evidence of the relevance of teacher knowledge and perceptions for teacher preparation and professional development programs.

Vimolan Mudaly1 and Swasthi Sukhdeo (2015) explored six primary school learners' transition to secondary school and the influences that this may have had on their mathematical learning and performances. The study was carried out over a seven-month period, from the latter part of their final primary school year until the end of the first term of high school. The study documented detailed descriptions of various stakeholders in the transition process as well as the factors that affect mathematics learning. The data reflects the findings of the study and discusses some of the implications regarding mathematics teaching and learning that should be considered during the transitional period from primary school to secondary school.

Teachers need to use geared toward young gifted teens so to address societal and emotional apprehensions. Teachers using this approach hold a fundamental belief that reading will impact thinking and comportment, and that through guided discussions designated readings may be concentrated on the exact needs of students as well. Reading children's literature, fairy tales, and stories while teaching math concepts can allow students to invoke more creativity and employ their imaginations further while making important mathematical connections to their understanding (Furner, 2017).

Joseph Furner (2018) found that the results of the teaching of mathematics may help to lower math anxiety and pique students interest and confidence in math and the STEM fields. Teachers need to address this alarming problem and work toward developing mathematically confident young people for a world where Science, Technology, Engineering, and Mathematics (STEM) fields dominate the globe, using literature to teach mathematics can support and cultivate students' math confidence for a STEM world.

Johann Enge brecht, Salvador Llinares & Marcelo Borba (2020) highlighted the different ways in which the use of digital technologies generates new ways of thinking about mathematics and the settings in which it is learnt and how mathematics teacher educators frame the new initiatives of initial training and professional development.

Objective:
To study the implementation of class-III mathematics text book in classroom transaction.

Sample:
The sample of the study consists of 50 teachers were purposefully selected form primary schools Rangareddy district of Andhra Pradesh.

Tool:
Class room observation schedule developed by the researcher. This consists of 25 statements with multiple answers.

Data Collection:
The researcher has visited the class rooms and recorded classroom transaction procedures in class room observation schedule.

Statistical Analysis:
The obtained data were subjected to statistical analysis such as frequencies and percentages were used.

RESULTS & DISCUSSION

Table No-1: Showing Class Room Observation On Problem Solving.

Organization of Activities	Rating Scale	Frequency	Percent	Valid Percent	Cumulative Percent
Making the children to practice model problems on the concept teaching	No Activity	5	10.00%	10.00%	10.00%
	Satisfactory	0	0.00%	0.00%	10.00%
	Fair	0	0.00%	0.00%	10.00%
	Good	11	22.00%	22.00%	32.00%
	Very Good	28	56.00%	56.00%	88.00%
	Excellent	6	12.00%	12.00%	100.00%
	Total	50	100.00%	100.00%	
Asking questions and doubts by the children in the process of problem solving	No Activity	7	14.00%	14.00%	14.00%
	Satisfactory	0	0.00%	0.00%	14.00%
	Fair	0	0.00%	0.00%	14.00%
	Good	18	36.00%	36.00%	50.00%
	Very Good	17	34.00%	34.00%	84.00%

	Excellent	8	16.00%	16.00%	100.00%
	Total	50	100.00%	100.00%	
Discussing with the children to clarify their doubts	No Activity	4	8.00%	8.00%	8.00%
	Satisfactory	0	0.00%	0.00%	8.00%
	Fair	0	0.00%	0.00%	8.00%
	Good	6	12.00%	12.00%	20.00%
	Very Good	30	60.00%	60.00%	80.00%
	Excellent	10	20.00%	20.00%	100.00%
	Total	50	100.00%	100.00%	
Identifying errors / mistakes done by the children and rectifying them	No Activity	8	16.00%	16.00%	16.00%
	Satisfactory	0	0.00%	0.00%	16.00%
	Fair	0	0.00%	0.00%	16.00%
	Good	9	18.00%	18.00%	34.00%
	Very Good	24	48.00%	48.00%	82.00%
	Excellent	9	18.00%	18.00%	100.00%
	Total	50	100.00%	100.00%	
Children solving problems in " TRY AND DO" in groups	No Activity	11	22.00%	22.00%	22.00%
	Satisfactory	0	0.00%	0.00%	22.00%
	Fair	0	0.00%	0.00%	22.00%
	Good	13	26.00%	26.00%	48.00%
	Very Good	20	40.00%	40.00%	88.00%
	Excellent	6	12.00%	12.00%	100.00%
	Total	50	100.00%	100.00%	
Children solving the problems in " DO THESE " individually	No Activity	6	12.00%	12.00%	12.00%
	Satisfactory	0	0.00%	0.00%	12.00%
	Fair	0	0.00%	0.00%	12.00%
	Good	15	30.00%	30.00%	42.00%
	Very Good	24	48.00%	48.00%	90.00%
	Excellent	5	10.00%	10.00%	100.00%
	Total	50	100.00%	100.00%	
Total observation on Organization of Activities	No Activity	41	13.67%	13.67%	13.67%
	Satisfactory	0	0.00%	0.00%	13.67%
	Fair	0	0.00%	0.00%	13.67%
	Good	72	24.00%	24.00%	37.67%
	Very Good	143	47.67%	47.67%	85.33%
	Excellent	44	14.67%	14.67%	100.00%
	Total	300	100.00%	100.00%	

The table No-1 shows explicitly the organization of facilities in the class room as making children to practice model problems on concept teaching. It was found that a major sample (56%) were found to be 'very good' followed by (22%) as 'good' and (12%) as 'excellent'. A little majority (10%) were found to be doing 'no activity'. None of the sample was observed as 'Satisfactory' and 'fair'.

Asking questions and doubts by children in the process of problem solving, almost an equal number of the respondents (36%) and (34%) were observed as 'good' and 'very good'. On the other hand a simple majority of (16%) and (14%) were found to be 'excellent' and not involved in activity. Surprisingly none of the sample was found to be 'fair' or 'satisfactory'.

Clarifying student's doubts through discussion a great majority of the sample (60%) was observed as 'very good' followed by (20%) 'excellent' and (12%) as 'good'. A simple majority (8%) 'no activity'. The options 'satisfactory' and 'fair' did not find any place.

As per the identifying errors/mistakes done by the children and rectifying them in mathematics class it was found that a good majority of the sample (48%) were observed as 'very good'; another (18%) each found to be 'good' and 'excellent'. Just a small number (16%) was given as 'no activity'.

With reference to try and do activities in groups it was found that a good majority (40%) of the sample was 'very good' followed by (26%) as 'good' and another (12%) as 'excellent'. Though no one was found to be 'satisfactory' and 'fair' (22%) of them were doing 'no activity'.

Do these problems individually was a item that a good majority of the sample (48%) was observed as 'very good', while, a simple number (30%) and (10%) were observed as 'good' and 'excellent'. A simple majority of (12%) was observed as doing 'no activity'. 'Fair' and 'satisfactory' was not found.

On the whole, the results on Organization of Activities were found to be as follows: a good majority of the sample (47.67%) observed as 'Very Good'; followed by (24.0%) as 'Good'. On the other hand, (14.67%) and (13.67%) observed as 'Excellent' and doing 'No Activity'.

Summary of Findings

1. Making children to practice model problems on concept teaching. It was found that a major sample (56%).
2. Asking questions and doubts by children in the process of problem solving, almost an equal number of the respondents (36%).
3. Identifying errors/mistakes done by the children and rectifying them in mathematics class it was found that a good majority of the sample (48%).
4. Try and do activities in groups it was found that a good majority (40%) of the sample was 'very good' followed by (26%).
5. Do these problems individually was a item that a good majority of the sample (48%) was observed as 'very good'.
6. Total Organization of Activities were found to be as follows: a good majority of the sample (47.67%) observed as 'Very Good'.

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