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B. EL. Ed. (III Year)

MD Maths (Digantar Report)

The main goal of mathematics education in schools is the mathematisation of the child's thought processes. The main aim of the school education is the development of the inner resources of the growing child.

Located just outside of Jaipur, Rajasthan, Digantar Shiksha Eram Khelkud Samiti has been working in alternative education for rural children since its founding in 1978. They believe that the purpose of education is to make the child a self-motivated and independent learner with the ability to think critically.

Digantar Vidyalay have been using Continuous and Comprehensive Evaluation (CCE) since 1978, an approach that has been highly recommended by NCF 2005 and RTE.

In Digantar Vidyalay, children have the freedom to learn at their own pace. Digantar believes that each child is unique and has a set of his/her own experiences, interests and abilities. Hence, the children in Digantar schools are not distributed according to their age but according to their level of learning. There was ability grouping seen within the classroom.

According to Vygotsky, much important learning by the through social interaction, and peer interaction was importance in the Digantar classrooms, leading to Collaborative learning.

Students were working in a group of 5-6, on different mathematical concepts. The mathematical concepts being taught were - place value, Subtraction, multiplication, Time, weight, e.t.c.

The mathematical concepts taught, move in hierarchy. The teacher teaches the new concept only after revising the previous concepts. The students thus make a Relational understanding of the concepts, as the concepts move in hierarchy as suggested by Rohit Dhankar. Cite evidence to elaborate

The mathematical concepts were introduced in a very simple manner, and were then lead to the complexities. The students while learning about the concept of time, first learned about the uses of time and why they should be able to read the time from the clock. Then they learned about the hands of the clock and practiced single digit numbers, double digit numbers and then moved to adding and the calculation of time.

A lot of concrete material was used in the classroom for different concepts. A working model of a clock was used for the introduction of time, stones were used for addition, subtraction and multiplication, weighing scale was used for learning about weights, and beads were used for place value.

There were also so many charts, number

Does moving in hierarchy is enough for relational understanding?

The idea of time is not just about the uses of time and appreciating the need to read the time from the clock. Read Ramhar & Subramanian

Any observation related to perception in children?

5-6
bus
news

Topic _____ Date _____

cards, arrow cards, etc present in the classroom. Lesh suggested that the materials can be effectively used as an intermediary between real world and the mathematical world.

Therefore, when students were counting, adding or subtracting, stones were used by them.

Piaget too, laid emphasis on the hands-on experience with the material in learning of a concept. Moreover, Bruner and Dienes both gave importance to the use of materials for active involvement of the child in understanding the concept.

Bruner also talks about enactive, iconic and symbolic stage. The use of stones for counting and addition shows the child in enactive stage. When types and tokens were used to understand the place value, iconic stage of the child is seen. Symbolic stage is when the child uses symbols and algorithms. Thus the focus shifts from concrete objects to abstraction.

Thus, the child starts using textbook at the symbolic stage and it had minimal role. Lesh extended Bruner's theory and talked about interdependence of different modes of learning

which include pictures, manipulative aids, written symbols, spoken symbols and real world. In Digantar also, students were given some

Any real world context brought in? & modeling using concrete materials

It's just about minimizing the use of textbook but we need to

The teacher text, token & relation

thus, these are multiple representations of the same topic.

real life situations to solve a mathematical problem. For example, spoken symbols like ~~शुद्ध~~ and ~~कट~~ were used, and market situations were given for addition and subtraction.

Aren't there mathematical terms for one thing in Hindi?

Also, as Vygotsky laid emphasis on the social context of the child, the teacher in Digantar also used words from their social context like बिचमोल, ठिमोल, etc instead of mathematical jargons for addition and subtraction, thus also building Home-school connect.

The nature and purpose of tasks and questions asked, were to focus on child's thinking process. The teacher often asked the students how they arrived at a particular answer, and how did they think (what were the steps)?

Also, focusing on the logico-mathematical knowledge.

Algorithms other than what the teacher had taught were accepted in the mathematics classroom and the teacher also taught alternative algorithms for subtraction using Vedic Maths to the students. Multiple opportunities were given to the students to devise their own methods of solving a question, and every answer was accepted.

Could have mentioned an alternative algorithm from Vedic Maths?

Daily assessment of each child was done on the basis of the work they did in the classroom, by also assessing their notebooks.

Can you elaborate a little more on your observations?

Errors in the notebook were not crossed or marked on your observations.



Actual

Topic _____

Date _____

or corrected with red ink. A small dot (•) was put near the mistake, and these mistakes were discussed individually with the child, the next day, and the plans were prepared accordingly.

On the basis of the records and daily assessment of each child, Plans were made for the next day. There was Multi-level planning for the classroom, as every child had their own pace of learning.

Though the teacher had complete autonomy and freedom in the class, plans were discussed on a weekly basis with other teachers for feedback and suggestions related to any topic.

One such suggestion came from the teachers during the meeting that the teacher should not ask 'what time is it?' to the students but also ask the students to manipulate the clock and show a particular time. Thus, multiple representations of the same topic. These weekly meetings were very fruitful.

providing
& the
places
to learning
& wish
each
practice

At some points, need to be made from actual observations.

