

To study the Effectiveness of Education Taxonomy in developing 21st Century Skills among the Students

Dipu Mehta

Pragnya Bodhini High School

ABSTRACT

“The illiterate of the 21st century will not be those who cannot read and write... but rather those who cannot learn unlearn...and relearn.”

By- Alvin Toffler

During the present era it is essential to provide skilled based education to the students. The teacher develops skilled based education and knowledge among the students by inculcating it in her teaching learning process by using a tool Education Taxonomies i.e Revised Bloom's Taxonomy. The skills involved are creativity and imagination, student leadership and personal development, communication and collaboration, citizenship and Digital literacy. The teachers herself understands Revised Bloom Taxonomy and use it as a tool 1) To design her lesson plans- The teacher uses ABC model

(A- Audience, B- Behaviour, C- Condition) to write her objectives. The objectives should be SMART

(S- Specific, M- Measurable, A- Achievable, R- Realistic, T- Time bound) while designing the lesson. The teacher's lessons design includes more than one skill based on the activities that she plans for her lesson, depending upon the target group. 2) Evaluation- The formative evaluation helps the teacher to know which skill child is developing while performing given task. The teacher sets the summative evaluation paper based on the Revised Bloom's Taxonomy keeping in mind her target group and also analysis the data or score of an individual child. The main purpose of using education taxonomy is to develop skills among the students. To know an individual child by analysing the child evaluation data. To make teaching learning processes more effective going forward. This paper discusses about the effectiveness of educational taxonomy in developing skills among the students of grade 6th having 50 students as a target group.

Keywords: Skills, lesson plan, Designing, Evaluation, Target group, Tool.

INTRODUCTION

It is very important for a teacher to know the Revised Bloom's Taxonomy thoroughly, as it is a tool which help teacher to develop skills and help the students in developing those skills along with their curriculum. The main aims and objectives of these paper are 1) To develop skills among the students.2) To help teachers to design their lesson using educational taxonomies. 3) To help teachers to know the individual

Child by analysing the child evaluation data.4) To make the teaching learning process more effective going forward.

The Revised Bloom's Taxonomy has various levels it starts from known and goes to unknown level. The lower order thinking skills includes a) Remembering b) understanding c) Applying. The question framed or the activities planned on these level help the child to recall and recognition. It includes verb like list, find, define, calculate etc. The higher order thinking skills include a) Analysing b) Evaluation c) Creating. It includes the verb like justify, verify, compare etc. The question framed or the activities planned on this level help the child to design, plan, research their own creativity as per the given parameters.

While designing lesson teacher was very clear about the goals and objectives of the particular lesson. Teacher has used **ABC model of Robert Mager** for writing instructional objectives. **A** means Audience (here the audience are the students) **B** means Learning Behaviour it includes the verb that describes what learner will be able to do after the instruction objectives. **C** means Condition which includes rules, regulation, tools, resources etc. (measurable) under which the objective must be met or achievable.

While writing the objectives teacher takes care of **SMART** means the objectives should be **S**pecific, the objectives should be **M**easurable, objectives should be **A**chievable, objectives should be **R**ealistic and objectives should be **T**ime bound. This helped the teacher to design her lesson more effectively and even helped to plan the activities which lead the students to move from lower order thinking skills to higher order thinking skills.

Example of instructional objectives for grade 6th Subject Math Chapter- 'Angles' are as follows:

- 1) Students of 6th grade will be able to name the given angles.
- 2) Students of 6th grade will be able to identify the different types of angles from the given time on a clock
- 3) Students of 6th grade will be able to construct the angle bisector of the given measure.

The teacher planned activities based on the instructional objectives for example Teacher showed them objects and asked them to identify the angles from the shape of the objects given. Teacher gave students different times and asked them to identify the types of angles formed by them. The teacher even asked a group of students to create design using different types of angles.

The Revised Bloom's Taxonomy helped the teacher for assessment process. The teacher follows the various principles of assessment. They are as follows:

Validity

Assessment aims to cover the range of skills and knowledge sufficient to demonstrate competence.

Assessment of competencies should be a process which integrates knowledge and skills with their practical application.

Judgement to determine a learner's competencies should, as far as possible, be made on evidence gathered on a number of occasions and in a variety of contexts or situations.

Reliability

Assessment practices should be monitored and reviewed to ensure that there is consistency in the collection and interpretation of evidence.

Flexibility

Assessment procedures should provide for the recognition of competencies without regard to where or when they have been acquired.

Assessment procedures should be made accessible to learners so that learners can proceed readily from one learning unit to another.

Fairness

Assessment practices and methods must be equitable to all groups of learners.

Assessment procedure and the criteria for judging performance must be made clear to all learners seeking assessment.

Opportunities must be provided to allow learners to challenge assessment and provision must be made for reassessment.

Assessing Student Learning : Three Avenues

Three general avenues are available for assessing a student's achievement in learning:

A What the student says: the quantity and quality of a student's contribution to class discussion.

B What the student does: a student's performance.

C What the student writes: as shown by the items in the student's portfolio.

There are two types of assessment a) **Formative assessment** b) **Summative assessment**.

Formative Assessment - The assessment includes informal activities and learning is undertaken during the lessons. This helped the teacher to monitor the students behaviour during on-going teaching process, which includes their behaviour while they are with their friends, at playground, while doing any given activity or task, while they are working in the group or teams etc. It helped to monitor the student on-going progress. Provides immediate and meaningful feedback to check progress of a concept taught and had an impact on current learning and ultimately to be connected to improved performance of the child. Teacher conducted small test, prepared the observation checklist and even did peer assessment by playing game in the class. The teacher re-plans her new methodology for the students who may need additional instructional support

- 1) By forming small group of students and re- teach the concept to them.
- 2) By making pair or group students with different strength to get benefit from each other and encourages peer teaching.
- 3) Challenges successful students by creating enrichment opportunities.

Thus formative assessment takes place on the continuous bases and frequent feedback helped the child to progress.

Summative Assessment- This assessment is a simple process of measuring the level of achievements of the learning outcomes. Teacher sets the paper based on Revised Bloom's Taxonomy and uses the summative assessment data to analyse post examination results.

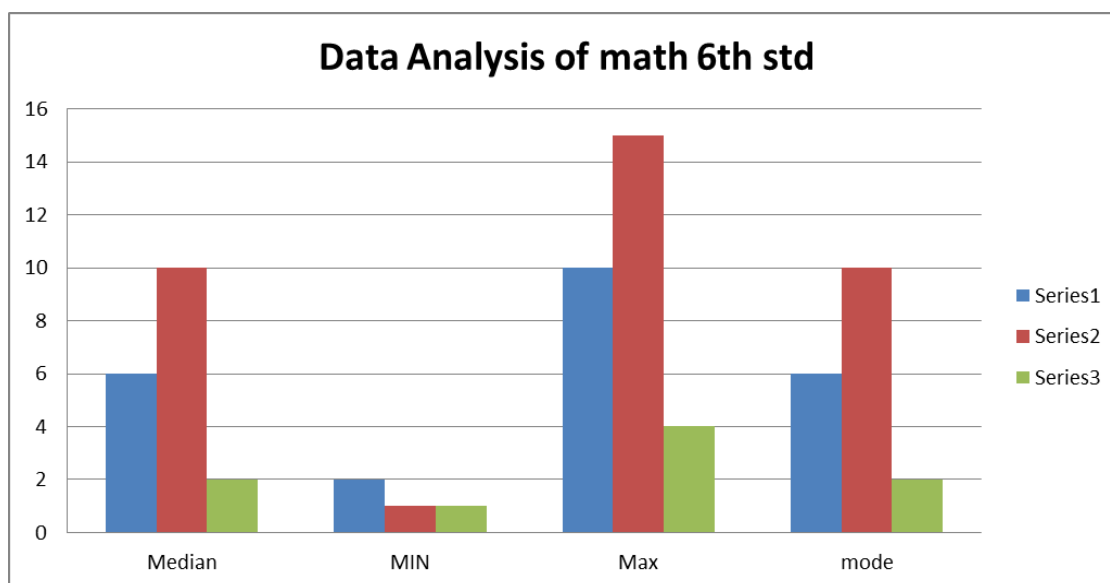
Teacher has taken a sample of **51 students** of grade **6th** Subject- **Math** The chapters name are 1) Basic concepts in geometry. 2) Angles. 3) Integers.

The question paper of 30 marks was set as per the Revised Bloom's Taxonomy. The paper was divided into three main questions. The weightage of the marks given were 10marks were for Remembering and Understanding which include low level thinking skills like Fill in the blanks. Solve the following (question same as in the textbook) etc, 15 marks include Application and Analysing which includes activities based question and sums based on formulae etc. and 5 marks includes higher order level of thinking skills. Which includes question based on create, construct, puzzle solving etc. this helps the child to develop the imagination and thinking skills along with the problem solving attitude.

The above table shows the analyses of the summative assessment of the student of class 6th based on Revised Bloom's Taxonomy. Q1 is of 10 marks Q2 is of 15 marks Q3 is of 5 marks.

ANALYSIS OF THE

Sr.no	Description	Q1 (10)	Q2 (15)	Q3 (5)
1	Total score	321	488	96
2	Percentage	42.46	95.68	37.64
3	Highest score	10/10	15/15	4/5
4	Lowest score	2/10	3/15	2/5
5	Average	6	10	2
6	Above 50%	33	40	15
7	Below 50%	18	11	36
8	Median	6	10	6



The above graph represents question wise analysis. The blue bar represents Q1. Of 10marks, the red bar represents Q.2 of 15marks and the green bar represents the Q.3. of 5marks. This graph clearly states that the learners have performed well in application and analysis question as compared to knowledge and understanding. It also states that the learners have also attempted higher order thinking skills. This graph shows Maximum, Minimum marks scored by the learners in each questions. The above data analysis based on Revised Bloom's Taxonomy and shows the following:

- 1) Students many a times instead of remembering and recognition apply their concept knowledge in critical thinking and problem solving sums. This is based on application and analysing.
- 2) The above data shows that the child who is not able to perform the lowest level thinking skills but was able to solve problems based on higher order thinking skill. This proves that the concept of the child is clear but he is not able to use the exact terminology which is required for the remembering and understanding level.
- 3) The application and analysing shows the highest percentage score were students have scored maximum.
- 4) The above table also analysis that students attempt the higher order skills questions. The teacher needs to take more practice and give more challenging question to improve their higher order thinking skills.
- 5) This also proves that Educational Taxonomy is effective tool for developing the skills among the students.

Challenges faced by teacher while doing this study are as follows

- 1) To do data analysis of the individual child data is the biggest task.
- 2) To keep the records and give proper feedback to each child.
- 3) To plan the re-assessment or activities this will help the child to improve their performance.
- 4) To plan the lesson keeping in minds the ability of the learner's and the educational taxonomy.
- 5) To manage the time and frame rubrics for the formative assessment.

Although the challenges faced by the teacher but teacher overcomes those challenges and tries to know the individual child and help to develop the skill in the individual child according to their ability.

This study helps the teacher to make her teaching learning process more effective going forward. The teacher can plan her activities or design her lesson based on the above findings from the above table. This study helps the teacher to make her teaching learning process more effective going forward. Teacher has made the necessary changes in her teaching learning methodology to help the learners to improve their score and also give individual learner feedback to progress in future.

REFERENCES

- Revised Bloom's Taxonomy, Role of data in futuristic school by EQFI.