

Mathematical Errors Committed by First Standard to Fifth Standard School Students

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Abstract: *The present study aims to study the mathematical errors committed by primary school students. The survey method of research was employed with questionnaire as the primary data gathering tool. The investigator on the basis of observation tried his best to give educational implication to improve the errors committed by the students of standard I to V.*

‘What is mathematics’? The answer to this question is of course complex; there are elaborate elucidations, some excellent, on the subject but inevitably, even the best account gave incomplete answer. Abstraction is one quality that permeates all mathematics. The first intimations of mathematics are no doubt to be found in counting. The act of counting is almost involuntary, but what underlies is profoundly abstract. The human mind recognizes that there is an attribute that it can ascribe to a collection or set of entities. This attribute is what we call ‘the number of entities in collection of numbers. But what is a number? Mathematicians have arrived at some ways of defining the concept but only recently in the twentieth century. Abstract may be at the root of counting but counting owes its discovery to down –to- earth, mundane compulsions: exchange of goods and barter where one has to set values on different commodities. The market place is undoubtedly the principal driving force for all the arithmetic we learn at school. Totaling stock led to addition and multiplication, balancing accounts to the invention of subtraction, sharing assets to division and so on.

Many engineering disciplines interact with mathematics; the level of sophistication of mathematics used in dealing in engineering problems has grown by leaps and bounds and with it the ability to handle and more and more and complex. A great deal of the mathematics used in engineering is in the area of differential equation off-shoot of the calculus. Probability theory is another area with profound application in engineering problems.

Biology and medicines which seemed to have practically no use for advanced mathematics at the beginning of the last century are now immensely using sophisticated mathematical tools. Mathematics has made its advent into social sciences as well in the recent decade. The work of the Noble Laureates is dependent on the mathematics.

The revolution in Information technology has its roots in mathematics. In sum, mathematics has been a major contributor to human progress in diverse directions in the recent era. It has also contributed in some major to the business of military development and war itself. It is said that The First World War was of the chemist, the second that of physicist and if there is going to be (God forbid) it will be the mathematicians. There is also a somewhat indirect impact that mathematics has had on human affairs. Training in mathematics enables a person to develop his capabilities in logical analysis of situation and helps think objectively one issue in general. Is the society in general aware of the importance of mathematics? Western society seems to have had good appreciation of the importance of science in large, and mathematics in particular. The erstwhile Soviet Union deliberately set out to promote science and mathematics in particular; and this had a resounding impact. Moscow produced a in number of gifted mathematicians but the Americans were paying relatively little attention to mathematics in the first half of the twentieth century but the Soviet space programs’ first Sputnik jolted them from their benign indifference into eager support for mathematics. Through the sixties and seventies and even eighties, support for mathematics was available on a very general scale, and this had indeed a tremendous effect. With the advent of independence the national leadership- Jawaharlal Nehru in particular, his vision resulted in the creation of many institutions of

scientific research among them there were a few that actively promoted to mathematics. Later on late Rajiv Gandhi gave a lot of importance to telecommunication and computers which further stimulated the teaching and learning of mathematics. It is because of all these effort that India is considered a super IT power in the world. 'Mathematics is the queen of sciences'. These are the words of Carl Frederick Gauss. This sentiment has been expressed in the ancient Vedic mathematics. It is my hope that what I had to say here will help us understand the importance of that mathematics claims in the present era of globalizations, computerization and cut throat competition. Hence the investigator found a scope to undertake a study on mathematical errors committed by primary school students. Hence the problem undertaken is stated as "*mathematical errors committed by primary school students.*"

1. OBJECTIVES OF THE STUDY

1. To develop an achievement test on mathematics to find out the errors in mathematics among primary school students.
2. To find out the errors committed by primary school students on mathematics.
3. To provide remedial measures to minimize the errors committed by the primary school students.

2. RESEARCH QUESTIONS

1. What type of errors committed by the primary school students in mathematics ?
2. What remedial measures will provide to the primary school students to minimize the errors in mathematics ?

3. RESEARCH METHODOLOGY

To pursue the purpose of the study the survey method of research was employed with questionnaire as the primary data gathering tool. The researcher has taken only the students of I to V class and the test was based on the sample. A purposive sampling method was followed for the purpose of the present study from the six schools, 120 students were taken on the sample of the study. The standard included was I- V classes only. After the selection of the sample the next task before the researcher was to choose suitable tools in order to achieve the objectives for the data collection. Questionnaire prepared by researcher which are based on MLL Curriculum of NCERT were used for data collection purposes. When the data collection work is over, data have to be analyzed and interpreted to arrive at some conclusion. For this, statistical techniques used become inevitable. The researcher calculated only percentages for the analysis and interpretation.

4. ANALYSIS AND INTERPRETATION

In this chapter, the data gathered so far has been analyzed through proper statistical techniques and results have been interpreted. Analysis was done in the following way.

TABLE-1
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON ADDITION

Well Understand	Problem suffers	Not Clear	Total
86 (71.66)	14 (11.66)	20 (16.66)	120

TABLE-2
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON SUBTRACTION

Well Understand	Problem suffers	Not Clear	Total
88 (73.33)	15 (15.50)	17 (14.16)	120

TABLE-3
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON MULTIPLICATION

Well Understand	Problem suffers	Not Clear	Total
90 (75.00)	12 (10.00)	18 (15.00)	120

TABLE-4
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON DIVISION

Well Understand	Problem suffers	Not Clear	Total
88 (73.33)	21 (17.5)	12 (10.00)	120

TABLE-5
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON DECIMAL

Well Understand	Problem suffers	Not Clear	Total
77 (64.16)	23 (19.16)	20 (16.66)	120

TABLE-6
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON FRACTION

Well Understand	Problem suffers	Not Clear	Total
74 (61.66)	25 (20.83)		120

TABLE-7
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON PERCENTAGE

Well Understand	Problem suffers	Not Clear	Total
99 (82.5)	11 (9.1)	10 (8.3)	120

TABLE-8
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON PROFIT AND LOSS

Well Understand	Problem suffers	Not Clear	Total
77 (64.16)	23 (19.16)	20 (16.66)	120

**TABLE-9
PERCENTAGE OF RESPONSES OF THE
STUDENTS ON RATE OF INTEREST**

Well Understand	Problem suffers	Not Clear	Total
84 (70.00)	16 (13.33)	20 (16.6)	120

TABLE-10
PERCENTAGE OF RESPONSES OF THE
STUDENTS ON SALE AND PURCHASE

Well Understand	Problem suffers	Not Clear	Total
40 (62.5)	62 (20.83)	18 (15.00)	120

TABLE-11
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON VALUE

Well Understand	Problem suffers	Not Clear	Total
27 (22.50)	83 (69.16)	10 (8.33)	120

TABLE-12
PERCENTAGE OF RESPONSES OF
THE STUDENTS ON PRINCIPAL

Well Understand	Problem suffers	Not Clear	Total
27 (22.50)	68 (56.66)	25 (20.83)	120

TABLE-13
PERCENTAGE OF RESPONSES OF THE STUDENTS
ON DISTANCE AND TIME

Well Understand	Problem suffers	Not Clear	Total
33 (27.50)	73 (60.83)	10 (8.33)	120

TABLE-14
PERCENTAGE OF RESPONSES OF THE
STUDENTS ON NUMBER OF DAYS

Well Understand	Problem suffers	Not Clear	Total
89 (74.16)	21 (17.5)	10 (8.33)	120

5. MAIN FINDINGS

- Percentages of 71.66% student were well understood on the topic 'Addition' whereas 11.46% were categorized as problem sufferers. The remaining 16.66% of students did not attempt to the questions.
- Percentage of 73.33% students were well understood on the topic 'Subtraction' whereas 15.50 per cent were fall under the problem suffers category and remaining 14.16% of students were termed as 'not clear' category.
- 75.00% of students have clearly understood the topic multiplication whereas 10 per cents of students committed error in solving the multiplication. Percentages like 15 students have not attempted the question at all.
- Percentages of 73.33% student were done well in 'Division'. That means a more percentage of students have clearly understood the topic division. A percentage of 17.5 students were categorized as problem sufferers and remaining 10 percent of students have did not attempt the question at all.
- Students of 64.16% were well understood the topic 'Decimal'. In indicates that maximum students were better in decimal. Only 19.16 percentage of students committed errors in solving the decimal. Percentages like 16.66 students have not attempted the topic decimal at all.
- Students of 61.66% had well understood the topic 'Fraction' whereas 20.83% of students have committed errors in solving the question. Only 21 percentages of students have not attempted the questions at all.
- 82.50% of students had well understood the topic 'Percentage' whereas small percentage like 9.1% of students has committed errors in solving the problems. Only 8.3 percentages of students have not attempted the question at all.
- Percentages of 64.16% students had well understood the topic 'Profit and Loss' whereas 19.16 percentages of students committed errors in solving the questions. Small percentage like 16.66% of students has not attempted the questions at all.
- More percentage like 70.00% of students were categorized as well understood groups. Only 13.33 percentage of students committed errors in solving the questions. 16.16 percentages of students have not attempted the question at all.
- Less percentage like 33.33% of student had well understood the topic sale and purchase whereas 51.66 percentages of students have committed errors on the questions sale and purchase. Only 15 percentages of students have not attempted the question at all.
- Smaller percentage like 22.50 percentages of students had well understood the topic 'Values' whereas a more percentage like 69.16 percentage of students committed errors in solving the questions related to 'Values'. Percentage of student's i.e 8.33% had not attempted the question at all.
- Students of less percentage like 22.50 had well understood the topic 'Principal' whereas 56.66 percentages of students have committed errors in solving the questions. Only 20.83 percentages of students have not attempted the questions at all.
- Only 27.50 percentage of student have well understood the topic 'Speed, Distance and Time.' whereas 60.83 percentages of students have committed errors in solving the questions. Only 8.33 percentages of students have not attempted the questions at all.
- Large percentage like 74.16 percentage of student have well understood the topic 'Number Days' whereas 17.50 percentages of students have committed errors in solving the questions. Only 8.33 percentages of students have not attempted the questions at all.

6. CONCLUSION

Mathematics can certainly make many contributions in effective communications also. In class discussion and in committee endeavors, students should have ample opportunities to practice communicating ideas in mathematics. Primary education in particular has remained a serious concern of our nation since Independence. A large number of programmes and schemes have been initiated both by the Central and State Governments to realize the goal of universalisation of elementary education. Research studies conducted at both centre and state level point out low level of learning in schools and the situation becomes worse as children move to higher classes. Mathematics, by and large, is taught in a stereotyped and mechanical way in schools “ Experience has shown that the majority of students normally fail in mathematics at the end of class X” (NCERT 2000). A midterm National Survey on Learning Achievement of class V children (2008) states that i) national average in mathematics was 48.46% indicating an increase of 1.95% from Baseline achievement measured in 2001-02, ii) there was no significance difference between boys and girls. In achievement however, rural children scored significantly better than their urban counterparts. Urban girls scored significantly better than urban boys, iii) the performance of children is the poorest in mathematics and better in language. The investigator on the basis of observation tried his best to give educational implication to improve the errors committed by the students of standard VII. Teacher should help the students to read and write the numerical correctly. Teacher should make them clear the adjustments of carrying in case of addition, subtraction, multiplication and division. While adding or subtracting decimal numbers, the decimal of the next digit should be placed under the decimal at previous digit. The students should be help in solving money problems including profit, loss, preparing simple interest. The examples can be taken from daily life. The students should be made familiar with square. The students should have ample practice of drawing, these geometrical figures with the help of ruler. Teacher should follow play way method to teach mathematics. Students must get enough practice in mathematics. Teacher should allow the students to ask question in the class.

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