PROFICIENCY OF THE UPPER PRIMARY STUDENTS IN FOUR FUNDAMENTAL OPERATIONS OF MATHEMATICS

Prarthana Baruah
Assistant Professor
Bosco College of Teacher Education
Dimapur, Nagaland.

Manashee Gogoi
Assistant Professor
Department of Education
Dibrugarh University.

ABSTRACT

Mathematics is an indispensable subject area in the school education because of its wide application in our day today activities as well as in different fields of education. Access to quality education in mathematics is very important for each and every child. The National Curriculum Framework (2005) describes that developing children’s abilities for mathematisation is the main goal of mathematics education. It also describes that the aim of school education is to develop ‘useful’ capabilities, particularly those relating to numeracy - numbers, number operations, measurements, decimals and percentages, etc.
Thus school education must provide basic knowledge and skills of mathematics such as four fundamental operations, decimals, percentages etc. The four fundamental operations have immense applications in our day today life activities. It is very important to provide quality education in Mathematics and so emphasis should be given on quality learning to acquire the knowledge and skill of these fundamental processes in an effective and systematic manner. In the present study, an attempt has been made to examine how far our school students are proficient in the four fundamental operations of mathematics.

The main objective of the present study is to examine the proficiency in four fundamental operations of mathematics of upper primary students studying in different schools of Dibrugarh town of Assam. The Normative Survey Method is used in the present study.

The study was carried out in a group of 356 students (194 boys and 162 girls) studying in Classes VI, VII and VIII drawn purposively from 12 secondary schools of Dibrugarh Town of Assam.

The study reveals that the majority of upper primary students studying in different schools of Dibrugarh town have made mistakes in solving problems related to subtraction having carry over, multiplication of whole number by zero and division of whole numbers by another whole number when zero comes as quotient. This study also reveals that a large number of students of upper primary classes still depend upon hand counting.

INTRODUCTION

Education is not only concerned with acquisition of knowledge, but also development of understanding, critical thinking, desired interest, appreciation, attitude and psychomotor skills. Moreover, education must be concerned to equip all the students with mathematical skills as they provide flexibility, adaptability and creativity which are very much required for
productive citizens of today’s technological society. The knowledge of fundamental processes of Mathematics and the skill to use them are the basic requirements of each and every human being. The fundamental operations of Mathematics, viz, addition, subtraction, multiplication and division are one of the simple and fundamental processes of Mathematics which have an immense practical value in our day today life. In any field of education, we can see the direct and indirect use of Mathematics and to excel in them, one must have the proper knowledge of these fundamental processes of Mathematics. Therefore, it is very important to provide quality education in Mathematics and so emphasis should be given on quality learning to acquire the knowledge and skill of these fundamental processes in an effective and systematic manner. As quality also refers to speed and accuracy in the four fundamental operations of Mathematics so due importance should be given for achieving the speed and accuracy from the very beginning of formal schooling.

Mainka, G. K. (1983) studied the acquisition of concept in Mathematics of pupils at Primary school level and found that concepts in higher mathematical hierarchy could not be developed unless the lower concepts were acquired. Rastogi, S. (1983) found that one of the important causes of backwardness in Mathematics was the poor command over basic arithmetical skills and there was no significant sex difference in the achievements in Mathematics. Kasat, B. S. (1991), in his studies, found out that low intelligence, poor numerical ability, poor comprehension and recall ability, no interest in Mathematics and poor study habits were the causes of the large failures of boys and girls at S.S.C. examination. Cobb et al. (1991) studied the computational proficiency and conceptual development of class X students and found that levels of computational performance of conceptual understanding in mathematics was higher in the students that participated in the project than the non-project students. Case (1996) argues that a variation of teaching methods is important because different teaching methods draw...
attention to different competencies in Mathematics, which seems to be important for students’ development of mathematical proficiency. Pal, et. al (1997) have studied different kinds of errors committed by primary schools students related to the mathematical concepts and found that most of the errors were due to a process of dualism, i.e., a different rule when zero involves as seen in case of place value, subtraction and multiplication. Romberg and Shafer (2002) suggest that students using problem-centered curricular materials can maintain basic number skills while developing higher order thinking skills.

PROFICIENCY IN FOUR FUNDAMENTAL OPERATIONS OF MATHEMATICS

Understanding the fundamental operations of addition, subtraction, multiplication and division is central to knowing Mathematics. Proficiency in computational skills is essential to problem solving and other mathematical activities. Estimating and evaluating answers and obtaining accuracy in calculations are included in this proficiency. Understanding relationships in operations allow students greater facility with mental computation. Mastery over computational skills makes the learners efficient and confident in mathematics.

SIGNIFICANCE OF THE STUDY

Education is incomplete without the knowledge of Mathematics. In the present world, no individual can live without the basic knowledge of mathematics. Every people use one way or the other mathematics in solving day today life problems. Thus, mastery over basic conceptual knowledge and skills of mathematics is must for everybody.

Every young learner should learn the ‘four simple rules or four fundamental operations’ of Mathematics i.e., addition, subtraction, multiplication and division. The learner has to
depend on these four rules at all the stages of learning Mathematics. In other words, as the entire structure of Mathematics is built on these four rules, proficiency in these rules is very important. Therefore, from the very beginning, there is a necessity to enable the child to acquire speed and accuracy in these rules of Mathematics. Thus, in the present study, an attempt has been made to study the proficiency in four fundamental operations of mathematics of upper primary students of Dibrugarh town, Dibrugarh, Assam.

OBJECTIVES OF THE STUDY

The main objective of the present study is to study the proficiency in four fundamental operations of mathematics of upper primary students of Dibrugarh town.

The specific objectives of the study are:

- To compare proficiency between boys and girls of upper primary classes in solving problems related to four fundamental operations of Mathematics.
- To compare proficiency between the students of upper primary classes studying in the Provincialised and Private schools in solving problems related to four fundamental operations of Mathematics.
- To compare proficiency between the students of upper primary classes studying in English medium and Assamese medium schools in solving problems related to four fundamental operations of Mathematics.
- To compare proficiency of class VI, VII, and VIII students in solving problems related to four fundamental operations of Mathematics.
- To study the ease and speed of calculations in solving problems related to four fundamental operations of mathematics by the upper primary students.
HYPOTHESES

1. There is no significant difference between: a) class-VI boys and girls b) class-VII boys and girls and c) class-VIII boys and girls of upper primary classes as far as their proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

2. There is no significant difference between the boys and girls of upper primary classes as far as their proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

3. There is no significant difference between the students of upper primary classes studying in Provincialised and Private schools as far as their proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

4. There is no significant difference between the students of upper primary classes studying in Assamese medium and English medium schools as far as their proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

5. There is no significant difference among the students of upper primary classes as far as their proficiency in four fundamental operations of Mathematics is concerned.

DEFINITIONS OF TERMS

Proficiency: Proficiency can be defined as the quality that an individual can consistently exhibit mastery of basic conceptual knowledge, skill, and problem-solving. In the present study, ‘Proficiency’ means the score obtained and time taken by the students to complete the test related to four fundamental operations of Mathematics.
Government School: The secondary and higher secondary schools which are established and controlled by the State Government. The State Government provides the physical facilities, human resources like teaching and non-teaching staff and financial support to this type of school.

Provincialised school: The type of secondary and higher secondary schools which are established by the Public and subsequently Provincialised by the State Government is termed in this study as the Provincialised schools.

Private school: These schools are established, managed and controlled by some Individuals, Private Organizations, Agencies, Bodies etc.

S. E. B. A.: Board of Secondary Education, Assam.

Upper Primary Classes: In the present study, the classes VI, VII, and VIII under SEBA are known as Upper Primary Classes.

DELIMITATION OF THE STUDY

The study has to be delimited in the following dimensions to fit it to the limiting conditions:

i) The study is delimited basically to the schools of the urban areas of Dibrugarh district only.

ii) The study is also delimited to the schools under SEBA only.

iii) The only English medium and Assamese medium schools are selected for the study.
iv) Data are collected only from the upper primary classes, i.e., classes VI, VII, and VIII.

v) The study is also delimited to the computations of whole numbers only.

METHODOLOGY

Method

Considering the objectives and the nature of data to be collected the Normative Survey method is considered to be the best method for the present study.

Population of the study

The population of the present study comprises of all the students of upper primary classes (session:2011–2012) i.e., classes VI, VII and VIII of the schools of Dibrugarh Town under SEBA.

Selection of the sample:

There are 30 secondary schools in the Dibrugarh Town. Out of these, 12 secondary schools were selected, using purposive sampling technique. Then from these schools a total of 356 students (194 boys and 162 girls) were selected, using random sampling technique.

Tools and Techniques used in the present study:

Considering the purpose and nature of data to be collected, a test has been prepared by the investigator for the present study. The test consists of altogether 20 different problems of addition, subtraction, multiplication and division (5 from each). The test items cover the
problems of whole numbers only. The marks allotted against each and every items for correct response is 2 and for incorrect response is 0. Total marks of the test is 40 and maximum time for administration of the test is 15 minutes.

The Items In The Test Are:

<table>
<thead>
<tr>
<th>Q.No.</th>
<th>1(a)</th>
<th>1(b)</th>
<th>1(c)</th>
<th>1(d)</th>
<th>1(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition</td>
<td>2+5+13+102+6+27=?</td>
<td>205+22+1956+2345=?</td>
<td>2 + 5 + 10 + 21=?</td>
<td>111 + 0 + 9 + 0=?</td>
<td>9000 + 50 + 100 + 9 + 2=?</td>
</tr>
<tr>
<td>Q.No.</td>
<td>2(a)</td>
<td>2(b)</td>
<td>2(c)</td>
<td>2(d)</td>
<td>2(e)</td>
</tr>
<tr>
<td>Q.No.</td>
<td>3(a)</td>
<td>3(b)</td>
<td>3(c)</td>
<td>3(d)</td>
<td>3(e)</td>
</tr>
<tr>
<td>Multiplication</td>
<td>0×0=?</td>
<td>5×17=?</td>
<td>12×6×0×112=?</td>
<td>34×34=?</td>
<td>125×105=?</td>
</tr>
<tr>
<td>Q.No.</td>
<td>4(a)</td>
<td>4(b)</td>
<td>4(c)</td>
<td>4(d)</td>
<td>4(e)</td>
</tr>
</tbody>
</table>

**COLLECTION OF DATA**

For the collection of required data, the test has been administered by the investigator on the students of classes VI, VII, and VIII. They are asked to solve the problems given in the test and return it to the investigator after completing the problems. The maximum time-limit of the test is 15 minutes. The filled in answer script are collected soon after the prescribed time-limit.
ANALYSIS OF DATA AND FINDINGS

(a) Proficiency of the students in solving problems related to four fundamental operations of mathematics:

Fig 1: Showing proficiency of the students of class VI in solving problems related to four fundamental operations of mathematics

Fig 1 reveals that out of 5 items of addition, the item number 1(d) was responded correctly by most of the students (81.6%) of class VI. On the other hand, comparatively less number of students (60.8%) of class VI responded the item number 1 (e) correctly which comprises of addition of thousand digit number to single digit number given in a row.
Majority (91.2%) of students of class VI responded the item number 2 (a) related to subtraction correctly. However, only 63.2% of class VI students responded the item number 2(b) correctly which comprises of subtraction related to carry over. 96% of students of class VI responded the item number 3 (a) of multiplication correctly. On the other hand, only 15.2% of students of class VI could respond the item number 3(c) correctly which comprises of multiplication of numbers by zero.

The item number 4(a) of division was responded correctly by 63.2% of students of class VI, whereas, only 22.4% of students of class VI could respond the item number 4(e) (which comprises of division of numbers in which zero comes as one of the Quotient) correctly.

Fig 2: Showing proficiency of the students of class VII in solving problems related to four fundamental operations of mathematics
Fig 2 reveals that 88.07% of students of class VII could respond the item number 1(d), related to addition of whole numbers correctly, whereas, 65.14% of students of class VII responded the item number 1(b) correctly.

Most of the students (95.41%) of class VII responded the item number 2(a) related to subtraction correctly while comparatively least number of students (74.31%) responded the item number 2(b) and item number 2(e) correctly.

Out of 5 items of multiplication, majority of the students (99.08%) of class VII responded the item number 3(a) correctly, whereas, only 32.11% of students of class VII could respond the item number 3(c) correctly.

Regarding the items of division, most of the students, i.e., 78.90% of class VII responded the item number 4(d) correctly, whereas, a least number (29.52%) of students of class VII could respond the item number 4(e) correctly.
Fig 3: Showing proficiency of the students of class VIII in solving problems related to four fundamental operations of mathematics.

Fig 3 clearly shows that total 95.08% of students of class VIII responded the item number 1(d) correctly, which was the highest percentage of correct response, whereas, 74.59% of students could respond the item number 1(b) correctly, which was the least percentage of correct response out of five items of addition.

Out of the five items related to subtraction, majority (90.16%) of students of class VIII responded the item number 2(d) correctly while 79.51% of students of class VIII responded the item number 2(b) correctly.
Out of five items of multiplication, the item number 3(a) was correctly responded by all the class VIII students, selected as the sample. However, only 36.07% of class VIII students could respond the item number 3(c) correctly.

Majority (88.53%) of students of class VIII responded the item number 4(a) correctly, whereas, only 36.89% of students of class VIII could correctly respond the item number 4(d).

It is to be noted that out of total 356 students of classes VI, VII and VIII, only 17 students could respond all the 20 items given in the test related to addition, subtraction, multiplication and division correctly. Out of these 17 students, 3 students were of class VI, 5 students of class VII and 9 students of class VIII. On the other hand, one student, out of 356 sampled students could not correctly respond any one of the 20 test items.

(b) Item wise analysis of the percentage of students of classes VI, VII and VIII in solving problems related to four fundamental operations of mathematics:

![Comparison showing the percentage of students of classes VI, VII & VIII in solving problems related to addition](image)

Fig 4: Comparison showing the percentage of students of classes VI, VII & VIII in solving problems related to addition
Fig 4 clearly shows that the percentage of students of class VII is more than the students of class VI that responded the items related to addition correctly. Again the percentage of students of class VIII is more than the students of classes VI and VII that responded the items related to addition correctly.

![Bar chart](image)

**Fig 5**: Comparison showing the percentage of students of classes VI, VII & VIII in solving problems related to subtraction.

Fig 5 reveals that the percentage of students of class VIII is comparatively higher than the students of classes VII and VI that responded the items (except the item 2(a)) related to subtraction correctly.
Fig 6: Comparison showing the percentage of students of classes VI, VII & VIII in solving problems related to multiplication

Fig 6 shows that the percentage of students of class VII is more than the students of class VI that responded the items related to multiplication correctly. Again the percentage of students of class VIII is higher than the students of classes VI and VII that responded the items related to multiplication correctly.

Fig 7: Comparison showing the percentage of students of classes VI, VII & VIII in solving problems related to division
Fig 7 clearly shows that the percentage of students of class VII is more than the students of class VI that responded the items related to division correctly. And the percentage of students of class VIII is more than the students of classes VI and VII that responded the items of division correctly.

(c) Comparison of the proficiency in four fundamental operations of mathematics among upper primary boy and girl students

Table-2: Comparison of the Proficiency in Four Fundamental Operations of Mathematics among the boys and Girls of class VI

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total Samples</th>
<th>Mean</th>
<th>S.D.</th>
<th>SE</th>
<th>C.R.</th>
<th>Significance (at .01 level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boy</td>
<td>73</td>
<td>29</td>
<td>7.17</td>
<td>1.66</td>
<td>3.61</td>
<td>Significant difference</td>
</tr>
<tr>
<td>Girl</td>
<td>52</td>
<td>23</td>
<td>10.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table-2 reveals that the calculated value of C.R. is 3.61, which is greater than the tabulated value (i.e. 2.58) at .01 level of confidence. Therefore, we reject the null hypothesis at .01 level of confidence. It means that there is a significant difference between the boys and girls of class VI as far as the proficiency in solving problems related to four fundamental operations of Mathematics.
Table -3: Comparison of the Proficiency in Four Fundamental Operations of Mathematics among the boy and Girl students of class VII

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total Samples</th>
<th>Mean</th>
<th>S.D.</th>
<th>SE</th>
<th>C.R.</th>
<th>Significance (at .01 level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boy</td>
<td>58</td>
<td>30</td>
<td>7.94</td>
<td>1.52</td>
<td>.66</td>
<td>No Significant difference</td>
</tr>
<tr>
<td>Girl</td>
<td>51</td>
<td>29</td>
<td>7.90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table -3 shows that the calculated value of C.R. is .66, which is less than the tabulated value (i.e. 2.58) at .01 level of confidence. Therefore, we accept the null hypothesis at .01 level of confidence i.e., there is no significant difference between the boy and girl students of class VII as far as the proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

Table -4: Comparison of the Proficiency in Four Fundamental Operations of Mathematics among the boys and Girls of class VIII

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total Samples</th>
<th>Mean</th>
<th>S.D.</th>
<th>SE</th>
<th>C.R.</th>
<th>Significance (at .01 level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boy</td>
<td>63</td>
<td>32</td>
<td>6.40</td>
<td>1.25</td>
<td>.80</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Girl</td>
<td>59</td>
<td>31</td>
<td>7.27</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It is evident from Table -4 that the calculated value of C.R. is .80, which is less than the tabulated value (i.e. 2.58) at .01 level of confidence. Therefore we accept the null hypothesis at .01 level of confidence i.e. that there is no significant difference between the boy and girl students of class VIII as far as the proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total Samples</th>
<th>Mean</th>
<th>S.D.</th>
<th>SE</th>
<th>C.R.</th>
<th>Significance of Difference (at .01 level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boy</td>
<td>194</td>
<td>30</td>
<td>7.30</td>
<td>0.91</td>
<td>2.2</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Girl</td>
<td>162</td>
<td>28</td>
<td>9.46</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is clear from Table-5 that the calculated value of C.R.(2.2), is less than the tabulated value (i.e. 2.58) at .01 level of confidence. Therefore, we accept the null hypothesis at .01 level of confidence i.e. there is no significant difference between the boys and girls of classes VI, VII and VIII as far as the proficiency in solving problems related to four fundamental operations of Mathematics.

(d) Comparison of the proficiency in solving problems related to four fundamental operations of mathematics among the upper primary students studying in provincialised and private Schools
Table–6: Comparison of the Proficiency in Four Fundamental Operations of Mathematics among the Upper Primary students studying in Provincialised and Private schools

<table>
<thead>
<tr>
<th>Type of Schools</th>
<th>Total Samples</th>
<th>Mean</th>
<th>S.D.</th>
<th>SE</th>
<th>C.R.</th>
<th>Significance of Difference (at .01 level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provincialized</td>
<td>156</td>
<td>23</td>
<td>8.78</td>
<td>.84</td>
<td>13.1</td>
<td>Significant</td>
</tr>
<tr>
<td>Private</td>
<td>169</td>
<td>34</td>
<td>5.98</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table-6 shows that the calculated value of C.R. is 13.1, which is greater than the tabulated value (i.e. 2.58) at .01 level of confidence. Therefore we reject the null hypothesis at .01 level of confidence at .01 level of confidence. It means that there is a significant difference in proficiency in solving problems related to four fundamental operations of Mathematics among the upper primary students studying in Provincialized and Private schools.

(e) Comparison of the proficiency in solving problems related to four fundamental operations of mathematics among the upper primary students studying in Assamese and English medium schools

Table–7: Comparison of the Proficiency in Four Fundamental Operations of Mathematics among the Upper Primary students studying in Assamese Medium and English Medium schools

<table>
<thead>
<tr>
<th>Medium</th>
<th>Total Samples</th>
<th>Mean</th>
<th>S.D.</th>
<th>SE</th>
<th>C.R.</th>
<th>Significance (at .01 level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assamese</td>
<td>187</td>
<td>25</td>
<td>9.10</td>
<td>.81</td>
<td>11.11</td>
<td>Significant difference</td>
</tr>
<tr>
<td>English</td>
<td>169</td>
<td>34</td>
<td>5.98</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table-7 shows that the calculated value of C.R. is 11.11, which is greater than the tabulated value (i.e. 2.58) at .01 level of confidence. Therefore we reject the null hypothesis at .01 level of confidence at .01 level of confidence. It means that there is a significant difference between the students of Assamese medium and English medium schools studying in upper primary classes i.e. VI, VII and VIII as far as the proficiency in solving problems related to four fundamental operations of Mathematics is concerned.

(f) Class wise comparison of the proficiency in four fundamental operations of mathematics among the students in upper primary classes

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sums of squares</th>
<th>Mean sq. (variance)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among the means of conditions</td>
<td>355</td>
<td>2223</td>
<td>6.26</td>
<td>.0953</td>
</tr>
<tr>
<td>Within condition</td>
<td>353</td>
<td>23197</td>
<td>65.71</td>
<td></td>
</tr>
</tbody>
</table>

Table-8 shows that calculated value of F is .0953, which is less than the tabulated value either at .05 level of confidence (i.e.1.10) and at .01 level of confidence (i.e. 1.14). Therefore we accept the null hypothesis and can say that there is no significant difference
among the students of upper primary classes i.e. VI, VII and VIII as far as their proficiency in four fundamental operations of Mathematics is concerned.

(g) **Class and Gender wise comparative analysis of time-taken by the students of upper primary classes in solving problems related to four fundamental operations of mathematics**

A class wise and gender wise analysis was done to compare the time-taken by the students of classes VI, VII and VIII to complete the test.

**Table – 9: Class wise and Gender wise comparison of time taken by the students studying in Upper Primary classes to complete the problems related to Four Fundamental Operations of Mathematics**

<table>
<thead>
<tr>
<th>Class</th>
<th>Total Samples</th>
<th>Average time taken (in minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boy</td>
<td>Girl</td>
</tr>
<tr>
<td>VI</td>
<td>73</td>
<td>52</td>
</tr>
<tr>
<td>VII</td>
<td>58</td>
<td>51</td>
</tr>
<tr>
<td>VIII</td>
<td>63</td>
<td>59</td>
</tr>
<tr>
<td>Over all (VI, VII &amp;VIII)</td>
<td>194</td>
<td>162</td>
</tr>
</tbody>
</table>

Table-9 shows that average time-taken to complete the test by the boys of class VI is 11 minutes while in case of girls, it is 12 minutes. Average time-taken to complete the test by the boy students of class VII is 11 minutes while in case of girl students it is 12 minutes. To complete the test related to four fundamental operations of Mathematics, average time taken by both boy and girl students of class VIII is 11 minutes each. Again average time
taken to complete the test by all the boys of upper primary classes i.e. VI, VII and VIII is 11 minutes while in case of girls it is 12 minutes.

(h) Way of counting by the students while solving the problems

The investigator while administering the test in different schools noticed that a majority of students of classes VI, VII and VIII, still uses hand counting while solving problems related to four fundamental operations of Mathematics.

MAJOR FINDINGS OF THE STUDY

- At the time of administering the test, it was observed that a large number of students of all the upper primary classes still depend on hand counting.
- The study also reveals that the majority of students of all the upper primary classes are still doing mistakes in computation of problems related to subtraction having carry-over, multiplication by zero and division having zero as quotient.

CONCLUSION

From the present study, it has been observed that though the students have already reached upper primary classes still they are facing problems in applying the skill of using four fundamental operations of Mathematics in solving simple mathematical problems. They still depend on hand counting in solving problems. Therefore child must be taught the basic rules and their applications in solving problems, keeping in mind that in later life
or when they reach higher classes, they will be proficient in solving problems related to four fundamental operations of mathematics.

It is hoped that the findings of the present study will prove useful in chalking out programmes for elementary school students for necessary improvement in proficiency in four fundamental operations of mathematics.

REFERENCES


