A Pilot Studty Of Non-Ict In Teaching Mathematics With Acronyms, Memory Aids, Mnemonics

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Abstract: ***The present study was conducted to find out the impact of Non-ICT among the Pushpalata Vidya Mandir Higher Secondary School, Tirunelveli student's performance based on their exposure to conventional method with Non-ICT tool Acronyms, Memory Aids, Minemonics was analysed.Design/Methodology Approach-To fulfill the objectives of the study twenty five students were selected to constitute the sample from pushpalata vidya Mandir Higher secondary school, Tirunelveli. A Pre-test and a post test was conducted to the same set of students using the conventional method and Conventional Method with Non ICT. The data was analysed by using statistical techniques.***

Keywords: Conventional Method, Conventional method-Non ICT, Middle school students, Information and communication Technology.

I. INTRODUCTION:

What are memory aids?

To help students, to perform well in their examinations in a better way we can use memory aids as follows:

Using Mnemonics

Using Acronyms

Using shortcut methods

Calculation mistakes are nowadays very common in examinations and if a student makes mistake in the first step the entire process will go wrong. The time and energy spent by the student to prepare will become waste. There must be a solution for the same.

Scope of study:

The purpose of study is to help high school students, perform well in their examinations without any ambiguity in writing the formula, results when solving a problem.

Sample group:

A small group of high school students of Pushpalata Vidya Mandir Higher Secondary School, Tirunelveli District.

II. LITERATURE REVIEW:

Technology cannot replace Teachers. There is an onslaught of technology in the modern classroom. A computer can give information about formula or results in Mathematics, but a teacher can lend a hand or an ear and find out what is necessary for a student. Research findings in comparing Conventional teaching methods with ICT and Conventional with NON-ICT methods are on but not as fast as required to our society. On realising the research gap, Preference is given to develop memory aids to learn Mathematics.

III. MEMORY AIDS:

Mnemonic codes are memory techniques that help information retention in human memory. The word Mnemōnic is derived from an ancient Greek word "mnemonikos", meaning 'relating to memory'.An example is given below:

ARITHMETIC- A Rat In The House May Eat The Ice Cream.

Acronyms: It is an abbreviation formed from the first letters of the words.

An example is given below:

ATM – Automated Teller Machine.

Short cut methods:

Shortcut methods are used to avoid the careless mistakes and to remember the correct formulas.

Example: nCr = n! / r! x (n-r)!

10C4 = 10! / 4! x 6! = 10.9.8.7.6.5.4.3.2.1 / 4.3.2.1.6.5.4.3.2.1

= 10.9.8.7 / 4.3.2.1

The above calculations could be explained as follows:

10C4 = 10.9.8.7 (start from 10 & write 4 consecutive numbers ~~in descend~~ing order)

4.3.2.1 (Start from 4 write up to one)

IV. IMPLEMENTATION OF MEMORY AIDS IN THE CLASSROOM:

The pilot study was conducted among the high school level students to analyse the impact of using the conventional method and memory aids along with the conventional methods.Twenty students were selected for pilot study. An in-depth planning was done to evaluate the students by conducting PRE-TEST and POST TEST. The reason behind conducting the test was to assess the impact of two different in teaching - learning process.First, students were taught through the conventional method. Concepts were explained in the formal way of teaching and conducted the test. Next, the shortcut methods and techniques like MNEMONIC codes, ACRONYMS were taught and given them some time to develop their own ideas. Students showed much interest when they solved the problems using shortcut methods.

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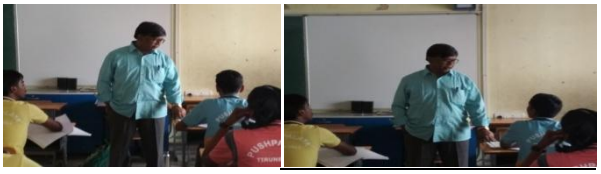
Students were taught using non-ICT methods with conventional



Student's doubts clarified

V. T-TEST ANALYSIS:

T-test was used to analyse the results got from pre-test and post-test. A tabular column was prepared based on the results of the test. It was found that pre-test average was 11 and post-test average was 15. This improvement in average within short span of time shows a considerable increase in learning level of students. The impact of using non-ICT with conventional methods among students was quiet significant.

VI. CALCULATION OF SAMPLE MEAN & STANDARD DEVIATION:

s.no	x	$x-\bar{x}$	$(x-\bar{x})^2$	$\bar{y}$	$y-\bar{y}$	$(y-\bar{y})^2$
1	16	5	25	20	5	25
2	10	-1	1	13	-2	4
3	12	1	1	16	1	1
4	10	-1	1	14	-1	1
5	8	-3	9	11	-4	16
6	11	0	0	15	0	0
7	7	-4	16	12	-3	9
8	7	-4	16	10	-5	25
9	8	-3	9	11	-4	16
10	11	0	0	16	1	1
11	16	5	25	19	4	16
12	10	-1	1	14	-1	1
13	8	-3	9	11	-4	16
14	12	1	1	17	2	4
15	17	6	36	22	7	49
16	9	-2	4	12	-3	9
17	13	2	4	18	3	9
18	6	-5	25	11	-4	16
19	15	4	16	20	5	25
20	7	-4	16	8	-7	49
21	12	1	1	16	1	1
22	14	3	9	19	4	16
23	10	-1	1	14	-1	1
24	16	5	25	21	6	36
25	13	2	4	18	3	9
26	8	-3	9	12	-3	9
27	9	-2	4	12	-3	9
28	13	2	4	18	3	9
	308	0	272	420	0	382

Where,

x – Pre-test marks

y – Post-test marks

$\bar{x}$ –mean of x

$\bar{y}$ –mean of y

n1 – no of students participated in conventional methods

n2 – no of students participated in conventional method with non ICT method.

$\bar{x} = \sum x/n = 308/28 = 11$

$\bar{y} = \sum y/n$

$= 420/28$

$= 15$

For analysing the above data we use t-test.

Formula for calculating t value:

$t = (x - \bar{y}) / s\ (1/n1+1/n2)$

Before finding the value of 't' we must calculate 's' value.

$s2=(\sum(x-\bar{x})\ 2 +\sum (y-\bar{y})\ 2) /n1+n2-2$

Substituting the values we get,

S2=12.11

S=3.48

Therefore,

t = -4.302

$|t| = 4.302$

Degrees of freedom= n1+n2-2

= 54

The tabulated value of t for 54 degrees of freedom at the 5% level of significance is 1.96. Therefore the calculated value of t=4.302 is greater than the tabulated value of t=1.96. Hence we reject null hypothesis H0. The result shows that there is significant difference in learning impact among students using conventional method and conventional method with non-ICT method.

VII. RESEARCH FINDINGS

Conventional method of teaching when supported with memory aids helps the students to perform better in examinations without simple errors. In chapters like surface areas and volumes, areas related to circles, arithmetic progression these techniques help them to write the result in formulas etc. without mistakes and they remember without any ambiguity.

There are many advantages of using memory aids. Following are some of them.

Being confident to face examination.

Saves time in the examination hall.

There is a myth about mathematics in high school level that it is difficult to learn. Memory aids break the myth and make math as one of their favourite subjects

VIII. CONCLUSION

In the conventional method students are able to remember the formula but they make mistakes by changing one or two terms. This may lead to big calculation error and as a consequence they will get only '**STEP-MARK'.** But these memory aids will help them to avoid such mistakes and get full marks. They can save time during examination and check their calculations in the entire manuscript once or

twice, for mistakes.The concept of a mnemonic is a lot simpler than its confusing spelling. It translates information into an alternative that you are more easily to remember.These simple ideas will greatly help one to learn all kinds of facts and figures**.**

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