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EFFECTIVENESS OF WEB BASED INSTRUCTION IN LEARNING OF MATHEMATICS

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ABSTRACT

This paper aims at finding out whether there is any significant difference in the effectiveness of the Web-Based Instruction in the study of mathematicsviz. Introduction to Conics of Mathematics and thedemographic variable of thelearners viz.thegender.The sample constitute 112 students registered online from various types of schoolsvia internet. A pretest of 10 questions and a Criterion Referenced Test of 18 questions were prepared and the data received through online tests were analysed. The Statistical Analyses include Mean, Standard Deviation and t-test.

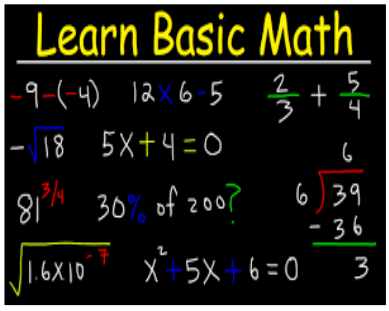
KEYWORDS : *mathematicsviz , Statistical Analyses include Mean, Standard Deviation.*

INTRODUCTION

Mathematics is the basis of science and technology that have made our life speedier, urbane and of coziness. Mathematics is used in a numeral of areas, because it delivers a exact way to define intricate condition and examine tough problems. In current society has been altered quickly by the expansion of scientific technology. Mainly the progression of information & communication technology has made a significant and overall impact on our society. Web-based learning allows not only the concurrent communication of the conservative preaching system or face-to face talks in class, but also non-simultaneous communication outside time and interplanetary and, above all, it has an advantage of helpful numerous students alongside without any border of education planetary. Web-based instruction (WBI) is a hypermedia based teaching method that utilizes the characteristics of the Web and the materials provided through the Web (Kahn, 1997).

NEED AND SIGNIFICANCE OF THE STUDY

The significant element arises that children find mathematics learning to bemore problematic and more momentous. In this modest world the paternities inclineto go for support to post, to find mathematics specialists to deliver additional guidanceand training to their wards. With the high prospects of their children fortifying topmarks in subjects like mathematics. At all level mathematics instruction grows anessence of review obligatory for any phase of life. In our nation, parents are verycertain to send their children to specialized professional courses like engineering,medicine, charted accountancy, master of business administration, etc. The school, theparent and others keep thinking of only these occupations for



themselves, whatever may be the marks tenable in mathematics and the other relevant subjects. The first andthe most important aim of not learning mathematics depends on the quality and themotivation of the individual teacher. Teaching is unsuccessful because it isincompetent deliberate and sometimes exhibits defilements of learning. Someeducators are little inspired. Some teachers teach Mathematics in such a pace withoutgiving time to reflect. Some teachers disregard the fact that pupils are individuals withdiverse upbringings, aptitudes and welfares, but default to make efforts, and teacheverybody the same material and in the same way. In this stage of fast modificationand indecision, teachers need to familiarize to change, if they are to endure and keepstride with new approaches and technologies.

OBJECTIVES OF THE STUDY

- To find out the effectiveness of the Web-Based instruction in the context of Introduction to Conics of Mathematics: Parabola
- To find out whether there is any significant difference in the effectiveness of the Web-Based Instructional module in Mathematics – Parabola in the study of mathematics with respect to the variable viz. Gender of the online learners.

HYPOTHESES

1. There is no significant difference in the effectiveness of the Web-Based Instruction in the study of Introduction to Conics in the study of mathematics.
2. There is no significant difference in the effectiveness of the Web-Based Instruction in the study of the Web-Based Instructional Module in Mathematics – Parabola with respect to the variable viz. Gender of the online learners.

METHODOLOGY OF THE STUDY

This study adopts a single group, Pretest, Posttest Experimental Design. It is aresearch design used in applied fields of education with cognitive behaviour andpsychology. The subject serves as his or her own control instead of another individualor group. Single subject design is sensitive to the individual organism and groupdesigns are sensitive to averages of groups. In a single subject study there are a lot ofsubjects involved and are used to evaluate the effect of a variety of interventions inthe applied research.

The researcher has prepared a web-based multi-media module in topic ofmathematics - Parabola, viz., the Introduction to ConicsPretest and Posttest for the said content area has already been developed.They have to take Pre-test before going through the content of the module and Post-test should also be taken at the end of the module. The experiment was conducted via the internet and the data so collected wereanalyzed using appropriate statistical techniques. The results are discussed andinterpretations given besides arriving at exact conclusions.

SUBJECTS OF THE STUDY

The subjects of the study constitute112 students who have registered online from various types of schoolsvia internet.

TOOLS USED

- A web-based e-learning material comprising the moduleviz.Introduction to Conics was developed by the investigators.
- On-line testing software was developed by the investigators to administer the pretest to the respondents of the experimental group..
- A Criterion Reference Test was developed by the investigators to assess the terminal behavior of the respondents.

DATA ANALYSIS

Hypothesis 1: There is no significant difference in the effectiveness of the Web-Based Instruction in the study of Introduction to Conics of Mathematics – Parabola Education.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	X	4.71	112	1.430	.135
	Y	7.16	112	1.027	.097

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	X & Y	112	.283	.002

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	X - Y	-2.446	1.506	.142	-2.728	-2.164	-17.194	111	.000

The difference between the mean scores for each of the category in pretest and posttest situations shows significance at 0.05 level. This may be due to the interaction effect of web – based learning on the learning ability of the samples, which makes them a clear understanding on the basic concepts.

Hypothesis 2: There is no significant difference in the effectiveness of the Web-Based Instruction in the study of the Web-Based Instructional Module in Mathematics – Parabola with respect to the variable Gender of the online learners.

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
POST-TEST SCORE (10)	Male	59	7.07	1.112	.145
	Female	52	7.29	.915	.127

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
POST-TEST SCORE	Equal variances assumed	.012	.914	-1.132	109	.260	-.221	.195	-.607	.166

(10)	Equal variances not assumed			-1.146	108.508	.254	-.221	.192	-.602	.161

It is clear from the above table that the gender of the learners does not differ significantly in their achievement at 0.05 level of significance.

CONCLUSION

Web-based instruction is a vital tool for learning mathematics in the 21st span, and all schools must safeguard that all their students have admittance to technology. Effective teachers exploit the possible of web-based instruction to develop students' sympathetic, arouse their curiosity, and upsurge their talent in mathematics. When web-based instruction is used tactically, it can deliver admittance to mathematics for all pupils. It may be clinched that the success students in mathematics depends deeply upon the technique of teaching and learning.

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