

Study of the Effectiveness of developed Digital Educational Material for Mathematics at the Upper Primary level

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Abstract :

The research Paper titled “*Study of the Effectiveness of developed Digital Educational Material for Mathematics at the Upper Primary level.*” was chosen on the strength that our present education system is bound to cope up with the challenges of the modern world especially in the field of Teaching of Mathematics among the Upper primary level student-teachers for the simple reason, that they would be teachers would be the king makers of our nation. It is evident therefore; heavy responsibility is on their shoulders to carry out this uphill task through their competent and effective teaching methods.

The present study was conducted to evaluate the effectiveness by developing digital educational materials for teaching std. 6 th class students of Janata High school, Talni Tq.Motala Dist.Buldana, using experimental methods. Two groups were taken for study as experimental and control groups. The experimental group was taught with digital educational materials and The Control group taught through traditional methods of teaching. The ‘t’ test was used to find the significance of difference between the achievements of two groups. Research results show that teaching with digital materials is more effective than teaching with traditional methods.

Keywords : Digital Educational materials, mathematics, Upper primary level.

Introduction :

Education is a very important and integral part of society. It deeply connects with the wants and needs of every society. This is the reason that education cannot remain unaffected by any social changes that take place around us. Hence any advancement in technology has a direct or indirect impact on education. Today’s advancement of the electronic media forces the teachers to change their traditional methods of teaching. There is active participation and involvement of computers and mobiles in providing education and educational materials to students. New technologies offer and at the very least give the teachers the chance to adapt the materials to their own and their learners' needs. Nowadays we face Covid19 pandemic period, so all students learn through distance learning. In this distance learning mode digital educational materials play a vital role.

Teaching being a noble profession is an art by itself. Presentation of the materials is the style of any art. Hence, producing quality in teaching is the essence of the art of Teaching. Today's classroom teachers must be well prepared to provide technology-supported learning opportunities for their aspiring students. It goes without saying that being prepared to use technology and knowing how that technology can support student-learning, must become an integral part of every teacher's professional repertoire. With the help of computer graphic tools to make digital educational materials, these digital educational materials make learning easier for both teachers and students.

What is Digital Educational Material?

Digital educational materials develop with computers or mobile devices. In this process graphic tools are used to make e-content with the help of text, images, audio, video and animation.

Digital Teaching-Learning Method:

Today, with the onset of the digital age, the focus of learning has shifted from the traditional methods to the advanced e-learning methods. Technology plays a vital role in education. In digital teaching-learning methods refers to an electronically delivered combination of media including video, images, audio, text in such a way that can be accessed interactively.

Importance of the study:

Mathematics is the language of numbers and symbols and involves the use of various numbers, signs, symbols, facts and algorithms and requires skills of perceptual reasoning, verbal reasoning, counting and calculating, all of which helps in solving everyday problems. Mathematics is a key subject in school education. Students begin to learn Mathematics from their childhood. Proper interest must be created in the learning of Mathematics, otherwise it becomes a kind of scarecrow to students. So, innovative digital teaching materials are helpful for those students. Last fifteen years researchers taught mathematics at upper primary level, So researcher know all difficulties about teaching mathematics. This is why there are large numbers of teaching methods employed to help students in learning and retaining mathematics. These methods also attempt to address the needs of each and every student sitting in the classroom. Digital teaching materials are very effective and important in enhancing the teaching- learning process.

Statement of the Problem :

“Study of the Effectiveness of developed Digital Educational Material for Mathematics at the Upper Primary level.”

Objectives:

- 1) To develop Digital Educational Material to teach mathematics at Upper Primary level.
- 2) To find out the effectiveness of Digital Educational Material for teaching Mathematics at Upper Primary level.
- 3) To find out the significance differences between teaching with Digital Educational Materials and Traditional Method for

teaching of Mathematics at Upper Primary level

Hypothesis :

Null Hypothesis :

There is no significant difference in the mean scores of Mathematics of students learnt through at Upper Primary level students' performance by teaching with Digital Educational Material and Traditional Method.

Scope and Limitations :

- 1) This research is related only to the Upper Primary level.
- 2) This research is related only to Digital Educational Material developed for Mathematics at the Upper Primary level.
- 3) The research is for the to 6th grade students only.
- 4) The research is limited for the topics included
Basic 1. Basic Concepts in Geometry 2. Angles
3. Integers only.

Research tools :

Pre- test and Post- test.

Preparation of tools :

Achievement Test :

Pre-test and post-test were prepared by the researcher for the subject Mathematics. These tests covered 1) Basic Concepts in Geometry 2) Angles 3) Integers Mathematics.

Research Methodology :

Researchers have used an Experimental Research Method. The researcher made two equal groups for pre-test and post-test.

Research Procedure :

Development and implementation of digital educational materials by researcher :The researcher developed digital educational materials on mathematics topics in 1) Basic Concepts in Geometry 2) Angles 3) Integers Mathematics topics for 6th class.

Analysis and interpretation of the data :

Researchers prepare an Achievement test belonging to 25 marks Questions on 10 students of class 6. Distribution of total score obtained by students in the pre and post-test regarding

effectiveness of Digital Educational Material is as follows-

Particular	Mean	S. D.	r.	t	Table Value	
					0.05 level	0.01 level
Pre-test	12.4	5.42	0.5			
Post-test	19.8	7.28	8	4.28	2.25	3.25

Above results stated that there is no significant difference between two groups so the null hypothesis should be rejected as the value is greater than the value at 0.01 significance level is remarkable. Observation research 't' value is greater than table 't' value on 0.05 level and 0.01 level hence there is significance difference between pre-test and post-test.

The developed Digital Educational Material is effective for teaching Mathematics at the Upper Primary Level.

Conclusion:

It is self-explanatory through the results of the research that digital educational materials can be the great help to the teacher and it is a firm belief that it enhances the quality of education. The experimental group taught through digital educational materials has shown a substantial progress from the above observations it is clear that students taught through digital educational materials scored higher marks and performed better as compared to students taught through traditional teaching methods. They developed digital educational materials teaching methods more effective than traditional methods.

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