



# REVIEW OF RESEARCH

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## EFFECT OF E-CONTENT STRATEGY ON MATHEMATICS ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS

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### ABSTRACT

*The Title of present paper is effect of E-content based teaching strategy on mathematics achievement of secondary school students. Objectives of the study are to study the effect of E content based teaching strategy on mathematics achievement of secondary student. The present study is delimited to IX standard students in the district of Muzaffarnagar(UP). This is an experimental research design. One hundred twenty students have been taken as sample. Mathematics Achievement Test has been used as research tool. Mean, S.D., t-test have been taken as statistical techniques. It is found out from the study that there is significant difference between control and experimental group of students. E Content Strategy is more effective comparatively traditional method. There are academic benefits of the study to the learner, to the teachers, benefits from psychological and social point of view.*

**KEYWORDS:** *E Content strategy, mathematics Achievement, Secondary Level, Mathematics subject.*

### INTRODUCTION

In present perspective learner has grown up in digital online electronic technologies environment likes as computer, mobile phones, laptops, tablets gadgets wi fi, internet multimedia e resources etc. These resources increase self learning and made education accessible to everyone. E content Teaching strategy can be change to objectives achieved by the teacher and attitude makes to use of these resources widely in the field of education. The traditional strategy are not successful in the present perspectives so. Teacher should be full of competences and knowledge of use E resources and online technologies. These resources increase students learning experience and achievement to stands the globalization, modernization and digitalization of content and knowledge. There are many types of powerful tools among e resources. Internet and online way can be change used efficient retrieval and meeting information needs of E resources. Electronic content is the most important aspects of a digital learning. In information technology the internet can be used efficient retrieval and meeting information needs E-Resources works which are encoded and made accessible through a computer online or in physical format. E-content are an Electronic information resource that can access on the web or off campus. In recent years there has been a groundswell of interest in how computers and the internet can best be harnessed to improve the efficiency and effectiveness of Education at all levels and in both formal and non formal setting. The use of computers and the internet is still in its infancy in developing countries, if there are not used at all, due to limited infrastructure and the attendant high costs of access. This Study provides an analysis of the current state of the E-content and examines the achievement of secondary school students. Teaching and learning process can be more effective and

useful by these contents. The researcher studies the relevant factor of use of E-content based teaching strategy.

### **NEED AND SIGNIFICANCE OF THE STUDY**

Mathematics is the Abstract Science which investigates deductively and conclusions implicit in the elementary conceptions of numerical and spatial relations. Mathematics being a very interesting subject can help the students to solve many problems they face. The quality of interaction in teaching and learning in the class, if properly performed, produces desired results that are better understanding and appreciation of mathematics in every day life.

In the present era and digital age, the traditional teaching and learning methods and materials may not be successful or sufficient to achievement the goal so the learning materials and formal education medium need to be changed and modified to meet the aspirations of the new generation learners. By use of E- Resources and ICT the students can indeed develop deep knowledge and understanding that does not old future perspective. Computer animation, videos and Graphics and other ways of E- content materials actively engage students in the learning process. Mathematical concepts and ideas can be visualized by these resources and attitudes, interest can be generated of students. Students achievement may be increased and get objectives of education. In the changing world of science and technology, there is need to use of effective methods and strategies of teaching to improve the result. Most of the teachers of Secondary Schools, do not know how to teach with the help of technology and E content. This study enables us to find out the effectiveness of E- content strategy on secondary school students achievement in Mathematics. So the researchers felt a need to verify and utility of these E-content in significantly manner.

### **E- CONTENT BASED TEACHING STRATEGY**

E-content is becoming popular because of its flexibility of time, place and pace of learning. E-content includes all kinds of content created and delivered through various electronic media. E-content is available in many subjects and almost all levels of education. It can be used by wide variety learners with diverse needs, different backgrounds, and previous experience and skill levels. It can be shared and transmitted easily and promptly among unlimited number of users around the world. E-content can be defined as the content available online on the internet which are a store of data and information on different subject and topics. E- content refer to those materials they require computer access, whether through a personal computer mainframe as hand hold mobile device. An Electronic content is defined as a content which requires computer access or any electronic product that delivers a collection of data, be it referring to full text bases, electronic journals, image collections and other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These are more useful due to inherent capabilities for manipulation and searching, providing information access in cheaper to acquiring information resources, saving in storage and maintenance etc. wide varieties of digital materials which are of educational significance are available online. One of the materials which can be designed and developed used, re-used and distributed is e-content. Teachers, students and others get benefited by the use of well designed and developed e-content. It is advantageous to the educational organizations to make their program accessible to their teachers and students on campus, home and other community learning or resource centers.

### **OBJECTIVES OF THE STUDY**

1. To compare the achievement scores in Mathematics of both groups to be taught through E-Content based strategy and Conventional Method before instructional treatment.
2. To compare the achievement scores in Mathematics of both groups to be taught through E-Content based strategy and Conventional Method after experimental treatment.
3. To compare the gain achievement scores in Mathematics of both groups to be taught through E-Content based strategy and Conventional Method after experimental treatment.

### HYPOTHESES OF THE STUDY

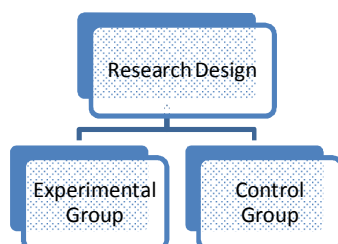
1. There is no significant difference in the achievement scores in Mathematics of both groups to be taught through E-Content based strategy and Conventional Method before instructional treatment.
2. There is no significant difference in the achievement scores in Mathematics of both groups to be taught through E-Content based strategy and Conventional Method after experimental treatment.
3. There is no significant difference in the gain achievement scores in Mathematics of both groups to be taught through E-Content based strategy and Conventional Method after instructional treatment.

### DELIMITATIONS OF THE STUDY

1. This study is delimited with 120 Students of class IX will be selected as sample.
2. This study is delimited with Secondary Schools of District Muzaffarnagar (U.P) Only.
3. This study is delimited with only E-Content Based Teaching Strategy.
4. This study is delimited with Mathematics Subject only.
5. This study is delimited with Achievement in Mathematics only.

### DESIGN OF THE STUDY

The present study was experimental in nature. In the study pre-test post-test control group experimental design was employed with a sample of class IX. The study included a control group and an experimental group each of 60 students. The experimental group was taught through E -Content based strategy and the control group through conventional method. This study is based on 3 stages as Pre testing stage, Treatment stage and post-testing stage.



### VARIABLES UNDER STUDY

In an Experimental Research, the relationship between two types of variables namely independent and dependent variables are in study. Taking the objectives into consideration, the following variables were selected for the present study;

#### INDEPENDENT VARIABLE

The E content based Teaching strategy, which were used in the present study to see the effects on the achievement constituted as independent variables.

#### DEPENDENT VARIABLES

The dependent variables were Achievement in Mathematics, which will be measure during the course of the study.

#### INTERVENING VARIABLES

- (a) Nature of School
- (b) Intelligence of Students
- (c) Previous knowledge of Students

**POPULATION**

The larger group from which individual were selected to participate in a study. All the students studying mathematics as a subject in class IX in the secondary schools situated in different areas of District Muzaffarnagar of U.P. affiliated to CBSC Board constituted the population of the present study.

**SAMPLE**

Sample is a portion of population selected for the purpose of study. For the present study, sample was drawn from the population by following stratified Random Sampling method. A total of 120 students of IX grade studying in CBSC Schools were selected from Muzaffarnagar District.

**TOOL USED:-** Self constructed Achievement test of Mathematics

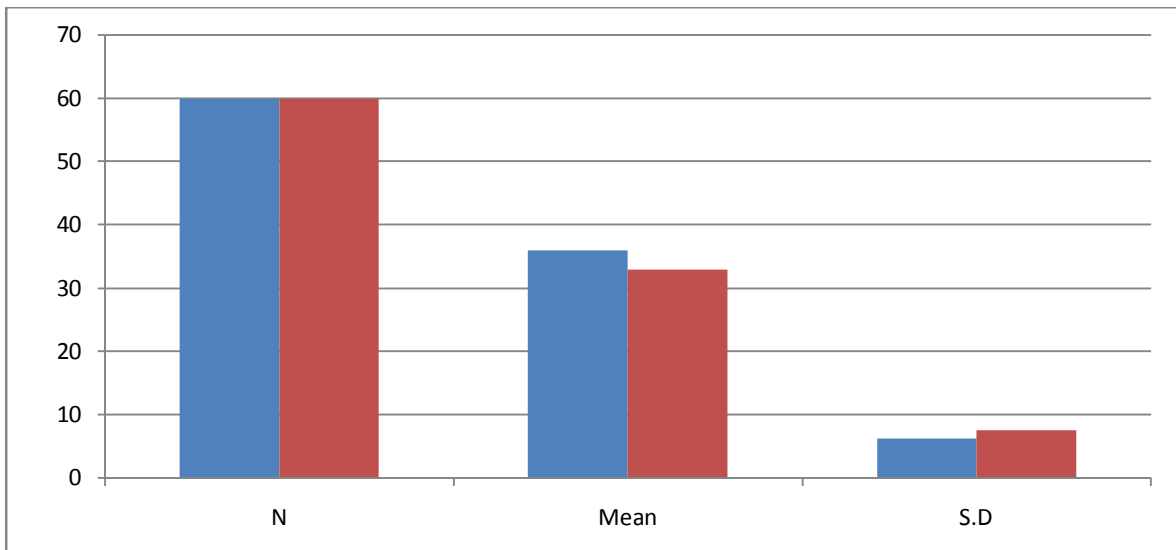
**STATISTICAL TECHNIQUES**

1. Mean, Standard Deviation.
2. T test has been used for analysis and interpretation of data
3. Statistical Software SPSS may be used for the analysis and interpret of data

**ANALYSIS AND INTERPRETATION OF DATA**

**Table-1.1: Mathematics achievement of students to be taught through E content based strategy and traditional strategy before Instructional treatment.**

Group	N	Mean	S.D	Df	t- Value	Significance	
Experimental Group	60	36	6.24	118	2.36	0.05	Non Significant
Control Group	60	33	7.6			0.01	Non Significant

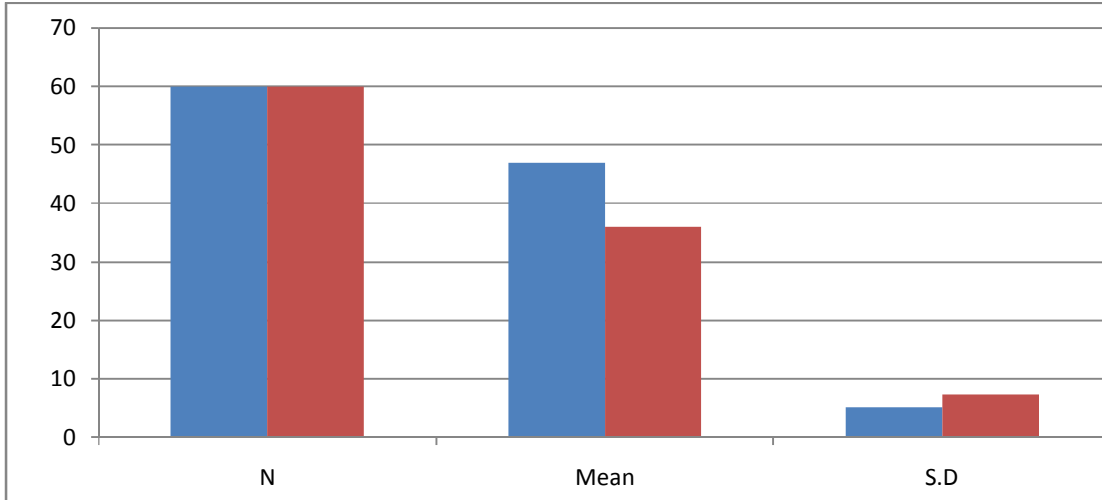


**Graph 1.1**

Table 1.1 represents the obtained value of “t” is 2.36 with df 118 which is not significant at level 0.05 and 0.01 of significance. It shows that there is no significance difference in achievement in mathematics of the students to be taught through E-Content based strategy and Conventional method.

**Table-1.2: Mathematics achievement score of students to be taught through E content based strategy and traditional strategy after Experimental treatment.**

Group	N	Mean	S.D	Df	t- Value	Significance	
Experimental Group	60	47	5.14	118	9.40	0.05	Significant
Control Group	60	36	7.3			0.01	Significant

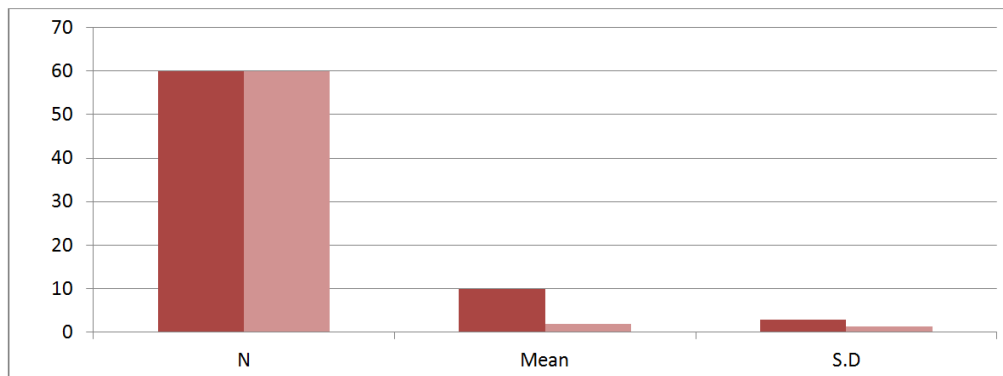


**Graph 1.2**

Table 1.2 represents the obtained value of “t” is 9.40 with df 118 which is significant at both level of significance. It shows that there is significant difference in achievement in mathematics of the students to be taught through E-Content based strategy and Conventional method. It may therefore be concluded that E-Content based strategy of teaching helps in enhancing the achievement of students in mathematics in comparison to the Conventional method.

**Table-1.3: Gain achievement scores in Mathematics of students to be taught through E content based strategy and traditional strategy after Experimental treatment.**

Group	N	Mean	S.D	Df	t- Value	Significance	
Experimental Group	60	10	2.83	118	20	0.05	Significant
Control Group	60	2	1.39			0.01	Significant



**Graph 1.3**

**Table 1.3** represents the obtained value of “t” is 20 with df 118 which is significant at both level (0.05 & 0.01) of significance. It shows that there is significant difference in achievement in mathematics of the students of IX class taught through E-Content based strategy and Conventional method. It may therefore be concluded that E- Content Based Teaching Strategy helps in enhancing the achievement of students in mathematics in comparison to the Conventional teaching.

These results led to conclusion that there is significant difference between both groups of students.

## FINDINGS OF THE STDY

### Findings of the study are as follows:

- Obtained value of “t” 2.36 with df 118 is not significant at both level (0.05 & 0.01) of significance. Hence the null hypothesis was accepted. So, there is no significant difference between control and experiment groups of secondary school students in mathematics achievement score before instructional treatment.
- Obtained value of “t” 9.40 with df 118 is significant at both level (0.05 & 0.01) of significance. Hence the null hypothesis was rejected. So, there is significant difference between control and experiment groups of secondary school students in mathematics achievement score after experimental treatment.
- Obtained value of “t” 20 with df 118 is significant at both level (0.05 & 0.01) of significance. Hence the null hypothesis was rejected. So, there is significant difference between control and experiment groups of secondary school students in mathematics achievement score after experimental treatment.

The results reflect that after applying E content based teaching strategy on experiment group, they achieve more marks in the comparison of control group. Thus E content based teaching strategy is more effective than conventional strategy in mathematics teaching.

## EDUCATIONAL IMPLICATIONS

The present research shows that this shift from conventional method to E content based teaching strategy not only enriches teaching learning of the class room, it also improves their achievement of mathematics in a significant way. Investigator has found out the following educational implications from the findings:

- ❖ The present study has applied great significance in the field of education. It shares the valuable insights into the effect of teaching methods on achievement.
- ❖ Those students who are unable to attend the schools for a longer period due to any circumstances as they can learn mathematics through E content based teaching strategy as per their interest, whenever time is available.
- ❖ E content based teaching strategy can be used to enhance teaching by presenting information in different ways and in different forms.
- ❖ Pupils can be create & manipulate information so that they can develop understanding of the relationship between different types of information or through the process of changing that information dynamically.

## SUGGESTIONS FOR FURTHER STUDIES

- ❖ The present study was delimited to IX grade students, so the similar study may be conducted on the students studying in Primary classes, Upper Primary classes, Secondary classes, higher classes and other professional courses.
- ❖ The similar kind of study may be conducted with school subjects other than mathematics.
- ❖ The study was delimited to Muzaffarnagar District of Uttar Pradesh, only. Similar studies can also be conducted in different Area of the Country.
- ❖ The similar study may be conducted on a larger sample for validation and for a longer duration of time.

- ❖ There is a need to investigate E content based teaching strategy with other methods of teaching at different grade levels.

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