

## EFFECTIVENESS OF E-CONTENT STRATEGIES ON LEARNING OF MEASUREMENT IN MATHEMATICS TEACHING AMONG VIII STANDARD STUDENTS

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### **Abstract**

*The purpose of the study is to examine the Effectiveness of E-content strategies on learning of measurement in mathematics teaching among VIII standard students. The investigator has chosen Experimental research. The investigator has selected 78 high school students. According to the scoring of pre-test, 39 students were chosen as control group and 39 students were chosen as experimental group in a using random sampling technique. Finally the investigator concludes that, there was significant difference between control and experimental group students in their gain scores and the experimental group students are better than control group students in their gain scores. It was also found that there was significant difference between rural and urban students in their gain scores.*

**Keywords:** E-content, Measurement, Mathematics, Madurai district.

### **Introduction**

In the age of cyberspace in the 21st century, composition, calculation and communication on paper alone is an impoverished, fractional and increasingly outdated concept and practice for thinking and communication. To build on the accomplishments of paper technology, a digital infrastructure must be in place. The multimedia Internet now includes all seven of the major multimedia forms; text and programming, still images, audio, video, animation, three-dimensional imagery, virtual reality and electronics device controllers. Interaction is an additional concept that can be potentially applied to each. E-Content enters into almost all subjects. It is supposed to be used as a tool where and when considered useful. Actions are taken or planned, to make sure that E-Content will be real part of the curriculum by supporting software development.

### **Significance of the Study**

If we are to hope with the challenges of the rapidly changing society and make use of new opportunities offered by E-Content, plans have to be realized giving educators, teachers and students access to necessary equipments. The most important competence building in this field is the development of pedagogical methods. That can happen only when long-term competence programmes can work along with real- life experience, where educators, teachers and students use E-Content in their daily work and daily learning experiences.

Use of E-Content encourages self-expression and discovery by means of its interactive non-linear access of information. Students will be more motivated to learn since a multimedia lesson can provide near-reality information through its variety of available media elements (text, sound, animation and video). The students may learn by using their

multiple senses, which provides new and enriched experiences. The learning process will be an active one, leaving the students to learn by their own. The conventional and/or interactive individualized lesson will provide a stimulating environment that can improve the learning process by enhancing understanding and retention of the subject matter. Integration of E-Content in education is still far from desired. The use of multimedia in teaching and their integration in the classroom and in the teaching training institute has remained almost completely unexplored. Only negligible numbers of studies have been conducted in this direction that too in limited disciplines. Many linked questions and issues have remained unanswered. Thus a lot of research / studies need to be attempted in this direction to answer such problems and it is due to this reason that the investigator has selected E-Content as his topic of research.

### **Statement of Problem**

#### **Definition of terms Used**

**E-Content Strategy:** In E-Content Strategy, the digital contents are presented to the learners in the integrated form of text, graphics, animation, audio, and video and also provide interactivity.

**Conventional Strategy:** In Conventional Strategy of teaching the teacher is the only active participant in the teaching learning process and the students are the passive listener. The mode of the instruction is lecture which is often supplemented by home assignments.

**Mathematics:** Mathematics is an expression of the human mind reflects the active will, the contemplative reason and the desire for aesthetic perfection. It is basic elements are logic and intuition, analysis and construction, generality and individuality.

### **Objectives of the Study**

The following are the objective of the study.

1. To find out the effectiveness of control and experimental group VIII standard students in their gain score.
2. To study the effectiveness of E-content strategies on measurement in mathematics for the VIII students.
3. To find out whether there is any significant difference between pretest and post test score of control and experimental group of VIII stand student.

### **Hypothesis**

1. There is significant difference between experimental group and the control group in their pretest.
2. There is significant difference between experimental group and the control group in their Post test.

3. There is significant difference between rural and urban students of experimental group in their pretest and Post test.

### **Methodology**

In the present study investigator has employed Pre-test-Post-test Control group Design. This is also called the classic controlled experimental design, and the randomized pre-test post-test design because it: Controls the assignment of subjects to Experimental (treatment) and control groups through the use of a table of random numbers; Controls the timing of the independent variable (treatment) and which group is exposed to it; and, Controls all other conditions under which the experiment takes place.

The steps in the classic controlled experiments were

1. Randomly assigned subjects to treatment or control groups.
2. Administered the pre-test to measurement in Mathematics subjects in both groups.
3. Ensured that both groups experienced the same conditions except that in addition the experimental group experienced the treatment.
4. Administered the post-test to Measurement in mathematics subjects in both groups.
5. Assessed the amount of change on the value of the dependent variable from the pre-test to the post-test for each group separately.

### **Population**

Population for research for the present study consists of the VIII Students studying in Higher secondary schools in Madurai.

### **Sample**

The sample consists (39+39) 78 students of VIII from a higher secondary school in Madurai district in Tamil Nadu. According to the scoring of pre achievement test, 39 students from VIII standard students will choose as control group and remaining 39 VIII standards students will choose as experimental group.

### **Sampling Technique**

For selecting samples the investigator has employed Random Sampling Technique.

### **Tools used for the Present Study**

The following are the tools used for the present study.

The investigator constructed and validated tool.

1. E-content strategies developed by investigator for VIII standard students (One Unit).
2. Achievement test prepared by the researcher on selected one unit.

### Statistical Techniques Used

The following statistical techniques were used in the study: Mean (m) and standard deviations (SD)' 't' test for determining the significance of difference between means of two sub- groups.

### Findings and Discussions

#### Null hypothesis: 1

There is no significant difference between experimental group and the control group in their pretest.

**Table 1: Significant Difference between Experimental Group and the Control Group in their Pretest**

Group	N	Mean	S.D	Calculate 't' value	Remarks at 5% level
Control group	39	58.15	15.811	3.37	S
Experimental group	39	59.08	15.827		

(At 5% level of significant the table value of 't' is 2.02 )

It is inferred from the above table-1 that the calculated 't' value (3.37) is greater than the table value (2.02) at 5% level of significance. Hence the null hypothesis, "There is no significant difference between experimental group and the control group in their pretest." is rejected. Hence there is significant difference between experimental group and the control group in their pretest. While comparing the mean scores of control group and experimental group, experimental group (M=59.08) is better than control group (M=58.15) students in their gain score.

#### Null hypothesis: 2

There is no significant difference between experimental group and the control group in their Post test.

**Table 2: Significant Difference between Experimental Group and the Control Group in their Post Tests**

Group	N	Mean	S.D	Calculate 't' value	Remarks at 5% level
Control group	39	87.49	11.246	3.91	S
Experimental group	39	95.49	49.57		

(At 5% level of significant the table value of 't' is 2.02 )

It is inferred from the above table-2 that the calculated 't' value (3.91) is greater than the table value (2.02) at 5% level of significance. Hence the null hypothesis, "There is no significant difference between experimental group and the control group in their Post test." is rejected. Hence there is significant difference between experimental group and the control group in their post test. While comparing the mean scores of control group and experimental group, experimental group (M=87.49) is better than control group (M=95.49)

students in their gain score. Thus E-Content Strategies is effective Learning of Measurement in Mathematics Teaching among VIII standard students.

### Null hypothesis: 3

There is no significant difference between rural and urban students of experimental group in their pretest and Post test.

**Table 3: Significant Difference between Experimental Group and the Experimental Group in their Post Tests**

Location of students	Rural (N=18)		Urban (N=21)		Calculate 't' value	Remarks at 5% level
	Mean	S.D	Mean	S.D		
Pre test	63.78	15.490	55.05	15.331	1.74	NS
Post test	97.78	3.135	93.52	5.437	2.91	S

(At 5% level of significant the table value of 't' is 2.02 )

It is inferred from the above table-3 that the calculated 't' value (1.74) is lesser than the table value (2.02) at 5% level of significance. Hence the null hypothesis, "There is no significant difference between rural and urban students of experimental group in their pretest." is accepted. Hence there is no significant difference between rural and urban students of experimental group in their pretest.

It is inferred from the above table-3 that the calculated 't' value (2.91) is greater than the table value (2.02) at 5% level of significance. Hence the null hypothesis, "There is no significant difference between rural and urban students of experimental group in their post test." is rejected. Hence there is significant difference between rural and urban students of experimental group in their post test. While comparing the mean scores of rural and urban students mean score in the experimental group, rural students better than urban students score of post test in the experimental Thus E-Content Strategies are effective Learning of Measurement in Mathematics Teaching among VIII standard students.

### Educational Implications

The present study has a wide range of implications in the field of education. Some of the implications are given below.

1. The use of E-Content leads to more positive attitude towards computer. Thus, when taught through computer the students feel more involvement in studies, which helps significantly in raising their achievement.
2. With the help of E-Content, the teacher is freed of the administrative burden. Thus they would be able to devote more time to the task of helping students for which they are trained. Moreover, the students will also enjoy their course of study.
3. Conventional Strategy of teaching if supplemented with E-Content can prove to be more effective in enhancing achievement.

4. E-Content Strategy of teaching needs to be introduced for teaching mathematics as they significantly enhance academic achievement among pupils.
5. Quality computer, which includes colourful animation, graphics display and effective alternative change in instructional strategy. The careful incorporation of computer for teaching Mathematics course will help the students to grasp the basic concepts of Mathematics.
6. Psycho motor skills can be learnt better through electronic media and communication technologies because they work as a live teacher and guide the learners more effectively.
7. There is need for greater intervention of National and State Government to give directions in planning for relevant courses, staff development and students support sources with E-Content.
8. E-Content should find a permanent place in school time table. If teacher and teacher educator are open minded in the use of computer as a tool for education than computer machines can be better utilized for education.

### **Suggestions for Further Research**

In India, the use of E-Content in education has remained almost completely unexplored. Very few numbers of studies have been conducted in this direction. Based on the findings of the current study, some of the suggestions in the area of E-Content are identified as follows:

1. The present study has been conducted only measurement limited topics of Mathematics syllabus, more studies may be conducted involving larger content of the curriculum and different Subjects.
2. The present study has been conducted on class VIII. To confirm the findings of present study, it is desirable to investigate the effect of E-Content on achievement of learners of different grade level and subject area.
3. The similar study can be extended to a larger sample and for longer span of time.
4. Further research can be conducted to explore the effectiveness of E-Content on disadvantaged groups such as backward, low achievers, mentally retarded and gifted.
5. Effectiveness of E-Content may be studied in relation to other variables, such as group size, creativity, economic background, age, cognitive style, personality and classroom climate etc.
6. The study indicates that E-Content is an effective intervention for improving student's academic achievement. Further research is needed to predict and explain how E-Content can become more effective instructional tool.
7. The study may be replicated on rural, tribal and slum population, where chances of

drop outs and failures are high.

8. Student's interests or willingness to study through E-Content may be probed and their effect on motivation may be studied in a longitudinal manner.

### **Conclusion**

The present study was conducted to assess the effectiveness of E-Content Strategy as compared with Conventional Strategy of teaching Mathematics to class VIII students. The purpose of the study was two-fold, firstly the development of E-Content and secondly to assess the effectiveness of such E-Content. Comparison of E-Content Strategy and Conventional Strategy of teaching is not only a comparison of two modes of instruction but of two theoretical paradigms. Conventional Strategy represents a paradigm whereby knowledge is transmitted from teacher to student. Something is poured in learner's brain and learner is a passive recipient of knowledge. Teacher plays an active part in this mode of instruction. E-Content represents a paradigm where knowledge is constructed and sought by the learner. Learner plays an active role in learning process. Learning is individualized, self-paced and hands on. For the past 10 years, the use of computers in education has increased dramatically and a wide range of educational computer programs are now widely available for individual and classroom use.

### **References**

1. Aggarwal, J.C (2013) Essential of Educational Technology, Noida, Vikas Publishing House.
2. Kumar, K.L (2008) Educational Technology, New Delhi, New Age International Private Ltd.
3. Rajasekar. S (2005) Computer Education, Hyderabad, Neelkamal Publications, Pvt. Ltd.
4. Vanaja, M (2004) Educational Technology, Hyderabad, Neelkamal Publications, Pvt. Ltd.
5. Thiyagu. K, Arul Sekar J.M (2007) Information and Communication Technology in Education, Tiruchirappali, Prophet Publishers.
6. Daryab Singh, (2003) Practical Statistics, New Delhi: Atlantic publishers & Distributors.