

## EFFECTIVENESS OF E-CONTENT ON CHEMISTRY ACHIEVEMENT OF XI STANDARD STUDENTS

**Dr. R.Rajalakshmi**

Assistant Professor, Department of Value Education, Tamilnadu Teachers Education University, Chennai



### ABSTRACT:

In the present era of knowledge explosion, adopting modern tools for teaching is one of the predominant needs of the hour. Instructional technology in the third world is changing rapidly. Knowledge packaging in electronic form is a powerful technique for teaching all subjects. Therefore the technology based teaching and learning has become essential. E-content is now the most preferred solution for learning effectively. The present experiment brings out a clear-cut idea about the effectiveness of teaching Chemistry and its impact among the XI Standard students'

achievement in Chemistry. The present study reveals that achievement of XI Standard students in Chemistry subject before treatment is average, which may be due to the potential or capabilities of the students possessed. The achievement of XI Standard students in Chemistry subject after treatment is high, which may be due to the influence of E-content based teaching in Chemistry subject. The analysis of data reveals that there is a significant difference found out between the pre and post achievement mean scores. It indicates that the E-content have much influence on the achievement of the XI Standard students in Chemistry subject.

### KEYWORDS:

Effectiveness, Higher Secondary School, Students, Chemistry, E-content, achievement.

### INTRODUCTION

The development of Science and Technology, especially the application of information and communication technology (ICT) in the new era has greatly influenced teaching and learning in education. In the present era of knowledge explosion, adopting modern tools for teaching is one of the predominant needs of the hour. Instructional technology in the third world is changing rapidly. Knowledge packaging in electronic form is a powerful technique for teaching all subjects. ICT have become handy in class room teaching which has the potential to engage the students throughout the period and make learning easy and effective through, visual aids, animations and simulations. They will be able to see the different stages and functions of the learning object which they cannot normally see through naked eyes the repeatability or

reusability of technology based learning system meets the needs of all the differently capable students to understand better. Therefore the technology based teaching and learning has become essential.

### **NEED AND IMPORTANCE OF THE STUDY**

Technology has significant effect on the Education system for many years. The teacher and learner must gain access to technology for improving learning outcomes. ICT aims at transferring the old traditional paradigm of learning to the new paradigm of learning. E-Content learning encourages open-minded, reflective, critical and active learning. With e-content materials, the student-teacher, the future teacher will understand that he or she is changing from a provider of facts to the one that facilitates a learning environment. It is in this assumption that the present study aims to find out the effectiveness of an innovative strategy with modern technological tools known as e-content of XI Standard students in Chemistry subject.

### **STATEMENT OF THE PROBLEM**

An appropriate educational technology in the hands of competent teacher can assure better teaching-learning process. Moreover, in the fast developing world, where knowledge explosion is taking place in every sphere, it is unreasonable to expect that mere spoken or written words alone convey the volume of relevant information to the learner in an attention – winning manner, when pupils learn through different senses, their understanding becomes smoother and inquisitive. Further, the concept taught will remain longer in the memory of the learner. Instruction through E-content is a good technique in that direction. The dual effect of easy viewing strengthens and enriches the understanding of the pupils and facilitates the mastery over the content they learn. So, the investigator has intended to study the “Effectiveness of E-content on Chemistry Achievement of XI standard students”.

### **OBJECTIVES OF THE STUDY**

1. To study the achievement of XI Standard students in Chemistry subject before the treatment.
2. To study the achievement of XI Standard students in Chemistry subject after the treatment.
3. To study the impact of E-content based teaching on the achievement of XI Standard students in Chemistry subject.

### **HYPOTHESES OF THE STUDY**

1. The achievement of XI Standard students in Chemistry subject before the treatment is average.
2. The achievement of XI Standard students in Chemistry subject after the treatment is high.
3. There is no significant difference exist between the pre and post test scores obtained by the XI standard students in achievement test on Chemistry subject.

### **METHODOLOGY**

The present investigation was undertaken by using the experimental method i.e.Pre test and post test method. The difference between these two tests indicates the impact of E-content based teaching in Chemistry. The present experimental study was conducted in Government Higher Secondary School in Tiruvannamali District of Tamilnadu. The present study consists of 100 samples for need identification. In which 50 students were taken as a sample for the final study based on the observation on the lowest score obtained by them. For the present study, the investigator used E-content based teaching on Chemistry and achievement test in Chemistry subject. The investigator prepared a study material on Chemistry by using audio, videos, text and graphics. It was developed and validated by the investigator. The achievement test consist of 80 test items. Each test item has four alternative responses, in which one is right response. It

carries a score of one. Like this every item were scored. After giving proper instruction to the students, the pretest tool was administered to the sample. After 30 days interval, the selected samples were subjected to treatment by providing E-content based teaching instruction. Then post test was administered to the treatment group. The score obtained by the 50 students were taken and statistical analysis using Mean, Standard Deviation and 't' test was done.

## ANALYSIS OF DATA

### HYPOTHESIS 1

**Before Treatment** – The mean and Standard deviation scores of XI standard students' achievement in Chemistry.

One of the main objectives stated in this present study is to study the achievement of XI standard students in Chemistry before treatment. The achievement score has been arrived by calculating the score secured by each of the students in achievement test in Chemistry. The maximum score for this test is 80. Hence one who securing a score of 1-25 indicates low achievement in Chemistry, 26-50 indicates average achievements in Chemistry and above 50 indicates high achievement in Chemistry. The calculated mean and standard deviation scores are given in Table 1.

**Table 1**  
**The Mean and S.D. Scores of XII Standard Students in their Achievement in Chemistry Before treatment**

S.No.	N	Mean	S.D.
1.	30	24.97	1.77

It is evident from the above Table that the mean score of total sample is found to be 24.97, which is in average level. Hence it is inferred that the achievement of XI Standard Students in Chemistry subject is average.

### HYPOTHESIS 2

**After Treatment** – The mean and Standard deviation scores of XI standard students' achievement in Chemistry.

One of the main objectives stated in this present study is to study the achievement of XI standard students in Chemistry after treatment. The achievement score has been arrived by calculating the score secured by each of the students in achievement test in Chemistry. The maximum score for this test is 80. Hence one who securing a score of 1-25 indicates low achievement in Chemistry, 26-50 indicates average achievements in Chemistry and above 50 indicates high achievement in Chemistry. The calculated mean and standard deviation scores are given in Table 2.

**Table 2**  
**The Mean and S.D. Scores of XII Standard Students in their Achievement in Zoology – After treatment**

S.No.	N	Mean	S.D.
1.	50	53.27	3.02

It is evident from the above Table that the mean score of entire sample is found to be 53.27, which is in high level. Hence it is inferred that the achievement of XI Standard Students in Chemistry subject is high.

### HYPOTHESIS 3

There is no significant difference exist between the pre and post test scores obtained by the XI standard students in achievement test on Chemistry subject.

Table 3

The significance of the Difference between Pre and Post Test mean scores on Chemistry subject

Treatment	N	Mean	S.D.	't' Value	Level of Significance
Pre Test	50	24.97	1.77	57.28	S*
Post Test	50	53.27	3.02		

Note: S\* - Significant at 0.01%

It is conferment from the Table 3, the computed 't' value is 57.28, which is greater than the critical value 2.66. Hence the hypothesis is rejected. It is inferred that there is significant difference between pre and post test score obtained by the XI Standard students in Chemistry subject.

### INTERPRETATION

The achievement of XI Standard students in Chemistry subject before treatment is average, which may be due to the potential or capabilities of the students possessed. The achievement of XI Standard students in Chemistry subject after treatment is high, which may be due to the effect of E-content based teaching in Chemistry subject. The analysis of data reveals that there is a significant difference found out between the pre and post achievement mean scores. It indicates that the E-content have much influence on teaching the subject Chemistry.

### FINDINGS OF THE STUDY

1. The achievement of XI Standard students in Chemistry subject before the treatment is average.
2. The achievement of XI Standard students in Chemistry subject after the treatment is high.
3. E-content based teaching has influenced the XI Standard students' achievement in E-content subject from average to high.
4. There is significant difference exists between the pre and post test scores obtained by the XI standard students in achievement on E-content subject.

### CONCLUSION

The present experiment brings out a clear-cut idea about the E-content based teaching in E-content and its impact among the XI Standard students' achievement in E-content. Therefore school should provide technological teaching to the students. The opportunities thrown open by the technological advancement is mind-blogging. The education sector and school education in particular need to take a leadership role in the transformation of educational processes to reap the full benefits of educational technology. Such a transformation would require substantial investments in software and hardware acquisition, redesigning of infrastructure, training and development, technical support, research and innovation.

### REFERENCES

1. Agarwal.Y.P. (1986). Statistical methods, concepts, application and computation, NewDelhi: Sterling Publications.
2. Atkinson.N.J. &Atkinson.J.N, Modern teaching aids, MCDonald& Evans.
3. Das.R.C. (1993). Educational Technology. NewDelhi: Sterling Publications.
4. SurajGoyal (2007). Teaching of Biology. NewDelh: Rajat Publications.
5. Department of Education (2010). Eleventh standard Chemistry Text Book. Chennai: Tamil Nadu Textbook Corporation.