

# Impact of E-Content on Learning Chemistry at Higher Secondary Level

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## Abstract

*This paper entitled as “Impact of E-Content on Learning Chemistry at Higher Secondary Level” is tried to test the impact of the multimedia courseware in studying chemistry at the XI standard level by picking a sample of 40 students by containing 20 each with control and experimental group by adopting pre-test and post-test control group design. It attains that there is a significant difference that was built in the experimental group compared with the control group. So it is approved to update the studying strategy at the XI std in learning chemistry. It is also established that this experiment also appreciates the passing percentage.*

**Keywords:** E-content, learning chemistry, Higher secondary, and pre-test post-test design.

## Introduction

To make the computer as assistor, the investigator used and modified the operating system as user-friendly. And at the same time, the investigator used texts, video, audio, animation, virtual environment, etc. to make the learning of chemistry enjoyable. This study attempts to explore students’ conceptual understanding of chemistry at +2 level. By reviewing all the relevant factors, the investigator aims for the **“Impact of E-Content on Learning Chemistry at Higher Secondary Level.”**

## Need and Significance of the Study

In Chemistry, there are three branches, namely organic, inorganic, and Physical. The heart of the subject is the Periodic table, which contains 119 elements which occur naturally as well as prepared artificially. But students don’t get clear understanding related to those 119 elements. Another important status is the introduction of a smart class, which has been introduced by the government. Most of the materials are available in the form of a CD. But some of the teachers don’t use technology to teach in the class, and they lack knowledge regarding the usage of computers. The present-day teachers lack the motivation that they are shaping the pillars which are going to support the future society. Teachers give inadequate explanations and make the students starve more for knowledge. They are not given proper in-service training to use the computer in the class. The factors mentioned above made the researcher to prepare chemistry concepts in the form of courseware for studying chemistry at the higher secondary level. The researcher has produced courseware in learning chemistry by taking two units from +2 chemistry and identified the effectiveness of the courseware for learning chemistry.

### Objectives of the Study

1. To find out the significant characteristic between pre and post-test mean achievement scores of the control group.
2. To find out the significant characteristic between pre and post-test mean achievement scores of the experimental group.

### Hypotheses

1. There is no significant difference between pre and post-test mean achievement scores of the control group.
2. There is no significant difference between pre

and post-test mean achievement scores of the experimental group.

### Design of the Study

The present study accepts the experimental design with a sample of 40 from XII standard students from Trichy district by using a determined sampling technique.

### Analysis and Interpretations of the Study

**Hypothesis: 1** There is no significant difference between pre and post-test mean achievement scores of the control group.

**Table 1 The Pre and Post-test Mean Achievement Scores of the Control Group**

Test	No. of students	Mean	S.D	Mean difference	't' value	Degrees of freedom	Level of significance (0.01 level)
C- group Pre-test	20	25.04	11.83	0.84	0.214	48	Not significant
C- group Post test	20	24.2	15.73				

The mean scores of the pre-test scores of the control group through the traditional method is found to be 25.04 with SD of 11.83. The mean scores of the post-test of the control group through the conventional process is found to be 24.2 with SD of 15.73. The mean difference 0.84 is found to be not significant for the 't' value of 0.214 for 48 degrees of freedom at a 1% level of significance. Therefore, the

hypothesis is accepted.

It is accomplished that there is no significant difference between pre-test and post-test mean achievement scores of the control group.

**Hypothesis: 2** There is no significant difference between pre and post-test mean achievement scores of the experimental group.

**Table 2 The Pre and Post-test Mean Achievement Scores of the Experimental Group**

Test	No of students	Mean	S.D	Mean difference	't' value	Degrees of freedom	Level of significance (0.01 level)
E-group Pre-test	20	35.4	10.39	10.36	3.29	48	Significant
E-group Post test	20	25.04	11.83				

The mean of the pre-test scores of the experimental group through the multimedia courseware is found to be 35.4 with the SD of 10.39. The way of the post-test scores of the experimental group through the multimedia courseware is found to be 25.04 with SD of 11.83. The mean difference 10.36 is found to be significant for the 't' value 3.29 for 48 degrees of freedom at a 1% level of significance. Therefore, the hypothesis is damaged. Hence, It is complete that there is a significant difference between pre and post-test mean achievement scores of the experimental group.

### Findings of the Study

1. There is no significant difference between pre and post-test mean achievement scores of the control group.
2. There is a significant difference between dynamic and post-test mean achievement scores of the experimental group.

### Educational Implications

- The utilization of e-content for learning chemistry enhances the achievement level of higher secondary students.
- Learning chemistry through e-content improves

the pass percentage of students at the Higher Secondary classes.

- E-content helps the learners to learn themselves according to their choice of interest and their own pace.

### **Delimitation of the Study**

1. The sample is preferred for experimentations is from class XII chemistry only.
2. The e-content prepared for studying chemistry is established on the state board syllabi recommended under Uniform System of School Education in Tamil Nadu.

### **Conclusion**

The present study was carried out to search for learning chemistry at the higher secondary level. As the current information action at the higher secondary level is adamant, time-bound and ancient, it was planned to device teaching burden in the form of multimedia courseware for the benefit of the learners so that the learners could earn the ability of the subject argue to their own pace and strength and feel excited through personal difficulty in the

alter of learning. It is sharp out that the multimedia courseware is user control as the tasks are build up and allow to each learner through a separate personal computer. The present study demonstrates the impact of e-content on learning chemistry at the higher secondary level.

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