

## Enhancing the Learning of Atomic Structure among IX Standard Students Using Infographic Method

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**ABSTRACT:** The aim of this study was to enhance the learning of atomic structure among IX standard students. The single group design was employed during the experiment. The investigator used purposive sampling techniques in this study. The sample consists of 35 Students. The atomic structure of an element refers to the constitution of its nucleus and the arrangement of the electrons around it. To teach the concept of atomic structure, teacher need an effective strategy. Infographics are visual representations of information, data or knowledge meant to present complex information quickly and clearly. So, the investigator has developed Infographics content for the effective teaching of atomic structure among IX Students. This study helped the Chemistry teacher to improve his or her instructional capacity and also for enhancing the academic performance of students in Chemistry subject. Hence, the new innovative strategies of Infographic method would be administered to enhance the knowledge in atomic structure among learners. Based on the evidences raised in previous literature and also need of the present context the proposed study would be need and significance one.

**KEYWORDS:** Atomic structure, Infographic method, Chemistry, Class IX students.

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### I. INTRODUCTION

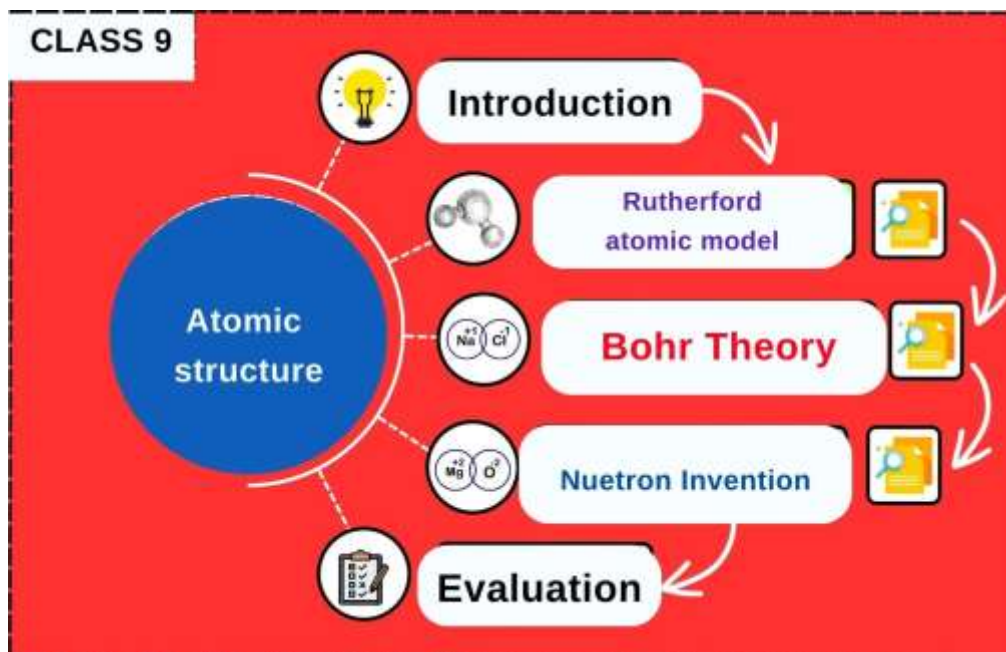
In global setting various field of the recent advancements of science and technology contribute to the progress and development of many countries. In specific those that are still on the process of development in teaching learning process. One of the objectives of the Chemistry is to develop more effective and scientifically aligned strategies to teach the key concept of atomic structure in high-school students through adaptation of novel technology are available in the present context. While various visualization tools have been developed to improve visual-spatial skills, previous studies on digital technology interventions provide limited findings and show moderate effects on students' learning. In particular, the Infographic technology is indeed one of the most prominent information presentation tools as it empowers users to display required information in an organized way as well as its delivery using different visual stimuli. As previously emphasized, it is necessary to depict and present information at learning environments using visuals as well as take into account differences between various visuals delivering the same information in addition to learner's preferences for obtaining and receiving information. Students lack of knowledge in understanding of the key ideas related to atomic structure. To address this problem, this proposed study tested the effectiveness of using Infographics method to enhance the learning of atomic structure.

### II. NEED AND SIGNIFICANCE OF THE STUDY

In 21st century classroom there are new instructional strategies are adopted by the different subject teacher in their classroom environment. However, the science subject needs some specific and unique technology related instructional strategies for improving the academic performance of the students. There are different science subjects are available in school curriculum each has different characteristics which needs some innovative instructional strategies to understand the learners for the same. The improvement of technology in teaching learning process it is proved for application of different strategies. Particularly in teaching of Chemistry needs some innovative instructional strategies for better understanding of atomic structure, it is not an easy task to explain the concept among the students in normal classroom settings. Hence, the new innovative strategies of Infographic method would be administered to enhance the knowledge in atomic structure among learners. Based on the evidences raised in previous literature and also need of the present context the proposed study would be need and significance one.

**The Infographic Method :** The Infographic Method is a visual communication approach designed to clearly, concisely, and effectively convey information. It integrates text, images, icons, charts, and data visualizations,

making complex ideas easier to grasp. In science, infographics simplify the presentation of intricate research findings and concepts, improving public comprehension of scientific topics. Educational settings greatly benefit from infographics, as these visuals cater to various learning preferences by providing quick and clear explanations. Over time, infographics have transformed from simple tools displaying basic data into vibrant, interactive designs commonly utilized on multiple platforms, significantly boosting accessibility and audience engagement.



**SAMPLE OF THE STUDY :** The present study was selected purposive sampling technique for selecting the sample from the population. The investigator has collected the data from 64, IX standard students of the Government higher secondary school, T.Palur, Ariyalur dt was used as the sample for the present investigation.

**OBJECTIVES OF THE STUDY**

- 1.To develop Infographic method to enhance knowledge in atomic structure among IX standard students
2. To find out the significant difference if any between the mean scores of pre- test and post-test control and experimental group.

**HYPOTHESES OF THE STUDY**

1. The level of knowledge in atomic structure among IX standard students is moderate
2. There is no significance relationship between the achievement of the mean scores of pre- test and post-test of control and experimental group using Infographic method.

**Hypothesis 1:**

**The level of knowledge in atomic structure among IX standard students is moderate.**

Low	Moderate	High
10%	60%	30%

The above table shows that the level of achievement in atomic structure 10% is low, 60% is moderate and 30% is high. So there is 30% increase among IX standard students.

**Hypothesis 2:**

**There is no significance relationship between the achievement of the mean scores of pre- test and post-test of control and experimental group using Infographic method**

**Pre test of control and experimental group**

Pre test	N	Mean	SD	T test	Level of Significance
Control Group	32	9.09	0.94	2.59	S
Experimental Group	32	9.68	0.88		

Significance at 0.05 level (2)

The above table shows that the mean scores of pretest in experimental group is 9.68 is higher than the mean scores of pretest is 9.09 in control group. The calculated 't' value 2.59 is greater than the table value 2 significant at 0.05 level. Hence the hypothesis is rejected. It is concluded that there is significant difference between the control and experimental group of pre test.

**Post test of control and experimental group**

Post test	N	Mean	SD	T test	Level of Significance
Control Group	32	12.12	1.36	12.68	S
Experimental Group	32	16.84	1.60		

Significance at 0.05 level (2)

The above table shows that the mean scores of post test in experimental group is 16.84 is higher than the mean scores of post test is 12.12 in control group. The calculated 't' value 12.68 is greater than the table value 2 significant at 0.05 level. Hence the hypothesis is rejected. It is concluded that there is significant difference between the control and experimental group of post test.

**III. RESEARCH IMPLICATIONS:**

The findings from this study carry significant implications for educational practices, particularly in the teaching of Chemistry. The demonstrated effectiveness of the Infographic Method suggests that educators should integrate visual and graphic-based teaching strategies more prominently within their curriculum to enhance students' comprehension and retention of complex scientific concepts, such as atomic structure. The substantial improvement in the academic performance of the experimental group compared to the control group highlights the value of infographics as an educational tool that accommodates diverse learning styles and promotes deeper understanding. These results advocate for a broader implementation of visual instructional methodologies in educational institutions, potentially extending beyond Chemistry to other science subjects. Future research could further explore the long-term effects of infographic methods, analyze their impact on students with varying learning abilities, and investigate their effectiveness across different educational settings and grade levels.

**IV. CONCLUSION**

The present study has proved that level of achievement of atomic structure among IX standard students through using infographic method has enhanced. The statistical analysis revealed significant differences between the control and experimental groups in both pre-test and post-test scores. Initially, a significant difference existed between the two groups, indicating they were not equivalent at baseline. After the intervention, the experimental group showed notably higher post-test scores compared to the control group, demonstrating the effectiveness of the intervention. Thus, the experimental treatment had a meaningful and statistically significant impact on the outcome variable. Therefore, it is concluded infographic method is more effective because it offers a more attractive, instructive and interactive visual presentation to the learners which attracts the attention and helps for their improvement in atomic structure among IX standard students and also study helps for science teacher to improve their instructional capability for enhancing the academic performance of students.

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