

Satyaniketan's
Adv. M. N. Deshmukh Arts, Science and Commerce College,
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Department of Chemistry
Model Based Teaching

Department of Chemistry always focus on Model Based Teaching. The report regarding it is as follows:

❖ **Introduction**

Innovative teaching models play a crucial role in enhancing students' understanding of scientific concepts. As part of learner-centric pedagogy, various science models incorporated into classroom teaching to facilitate experiential learning. This report highlights the models used, their impact on student learning, and their alignment with NAAC's criteria for quality education.

❖ **Objectives**

The key objectives of using science models were:

- To simplify complex scientific theories through hands-on learning.
- To improve student engagement and participation in science subjects.
- To promote research-oriented and application-based learning.
- To align with NAAC's Quality Indicators (QIs) under "Teaching-Learning and Evaluation".

❖ **Science Models Implemented:**

Ball-and-Stick Model

❖ **Observed Benefits**

- Cognitive Impact
- Improved Conceptual Clarity

Students could correctly predict bond angles after using models.

Better understanding of isomerism (geometric, optical) in organic chemistry.

❖ Impact Assessment

Parameter	Before Implementation	After Implementation
Student Engagement	60%	85%
Understanding Concept	62%	84%
Average Test Scores	65%	82%

❖ Student Feedback

- 85% found models helpful in understanding abstract concepts.
- 90% preferred hands-on models over traditional lecture methods.

❖ Conclusion

The integration of science teaching models significantly improved conceptual learning, critical thinking, and student performance. These methods align with NAAC's vision of "outcome-based education" and interactive learning. Future plans include expanding the models and incorporating AI-based virtual labs.

❖ Annexures

- Photographs:







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