



A PRELIMINARY STUDY: BEATING THE LINGUAL BARRICADE IN SCIENCE TEACHING FOR UNDERPRIVILEGED STUDENTS

Dr. Anamika Sharma, Dr. Subhadip Senapati & Dr. Athavan Alias Anand

Department of Chemistry, Prayoga Institute of Education Research (PIER), Bangalore, 560082, India

INTRODUCTION

- Skills to improve the language (ability to read and comprehend followed by writing)
- Implementation of confirmation inquiry-based learning (CIBL) method to teach the basic concepts of Matter



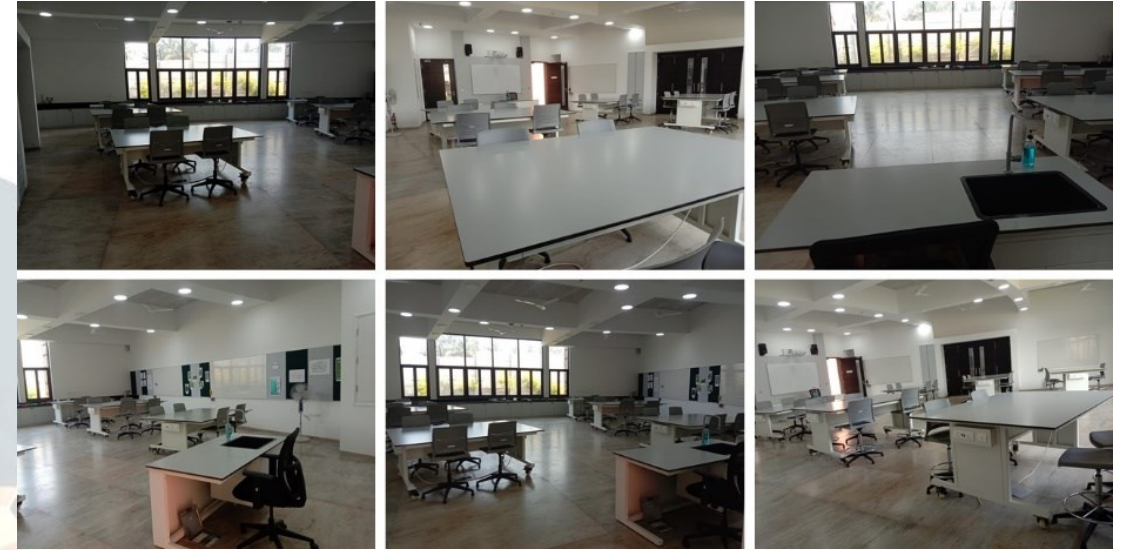
CIBL

- *Popular teaching model at lower grades in school environments*
- *Teachers provide open questions, investigation methods and the expected outcomes to the students*
- *Student perform the given activities to attain the desired results*

EXPERIMENTAL METHODOLOGY

Classroom

- Equipped with the digital displays, whiteboards, aiding listening devices, and other audio/visual components.
- Students organized in group of 5 on each table (to promote self-learning and learn in groups).



Course Description

- 24 Government school students of grade 6
- “Matter” was chosen as it’s easier to explain the concepts to students with visual changes (better understanding).
- Pre-test and post-test was conducted at the beginning and at the end of the study.
- Test comprised of different types of questions (MCQs, True & False and Fill in the blanks).

RESULTS & DISCUSSION

Activities performed by students during the study

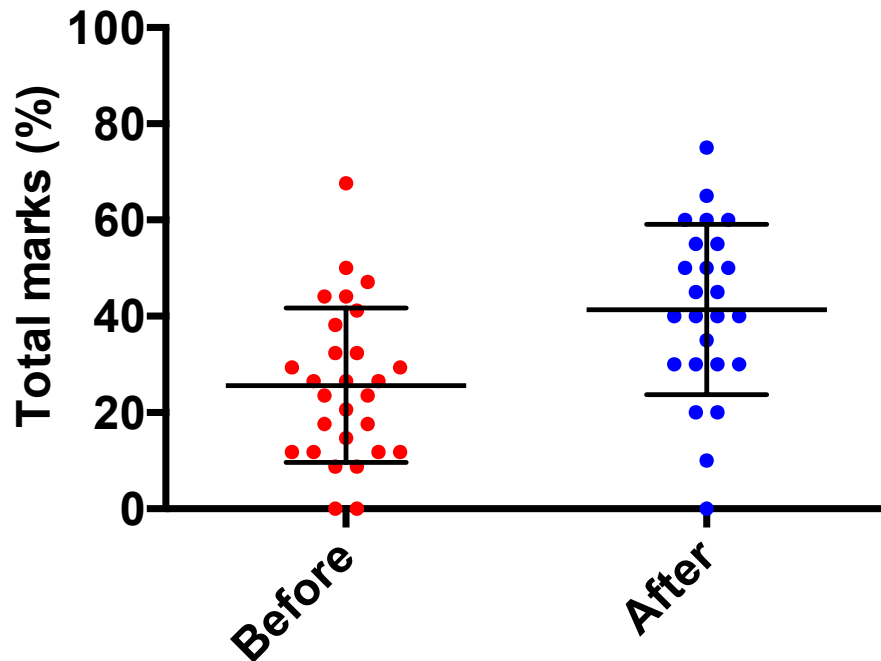
Sl. No.	Activity	Learning Objectives
1	Activity 1.1-1.3	Understanding of concept of mass
2	Activity 2.1	Understanding concept of volume
3	Activity 3.1*	Understanding tiny particles forming matter & concept of dilution
4	Activity 3.2*	Understanding about atoms
5	Activity 3.3*	Presence of different atoms in different atoms
6	Activity 1.1*	Understanding change in different states of matter
7	Activity 1.2	Understanding concept of compressibility
8	Activity 1.3	Understanding concept of fluidity and viscosity
9	Activity 1.4	Concept of viscosity and density are independent
10	Activity 1.5	Concept of fluidity in different states of matter
11	Activity 1.6	Understanding inter-particle distance in states of matter

*Activity was demonstrated.

RESULTS & DISCUSSION

Use of tag cloud to understand the new terms learned in the class

Atom Liquid Heterogeneous
Element Compound Polyatomic
Viscosity Atomicity Heating
Density Molecule Compressibility
Gas Diatomic Triatomic Water Fluidity
Homogeneous Solid Inter-particle
Non-compressibility



The average score increased from 27.8 ± 16.0 in the pre-test (red) to 41.9 ± 17.9 in the post-test (blue). This increase was found to be statistically significant by t-test (P-value = 0.0035)

CONCLUSION

- ✓ Positive improvements in the students of grade 6 (with underprivileged background).
- ✓ Successful implementation of tag cloud approach to make them understand meaning of new words learned in each class.
- ✓ Quasi-experiment design and comparison of pre-test and posttest depicts significant 1.5 times improvement in the growth of students towards learning concept of “Matter” *via* CIBL.



THANK YOU!