

Title of the practice: Teaching through live experiments

Goal: In chemistry teaching a topic using live experiments help in understanding, reciprocating, specific knowledge. This experimentation helps underlying principle is learning while doing. Concept that are learnt by listening and concept that are learnt by doing, the later has great impact that invokes curiosity and bewilders the learners. It is as simple as learning swimming in a pool instead of listening to "how to swim" by great swimmer.

The context: "Like dissolve in like" is concept in chemistry which is used in separation of mixture into its pure components. This separation is done by using inferential method-Thin layer chromatography which employs capillary action and ascending of a solvent against gravity. But the separation is carried out using column chromatography which employs capillary action and solvent descending by gravitational pull. This kind of experimental learning help in invoking higher order thinking through simple acts while doing column chromatography the solvent system is so adjusted such that mixture containing polar and non-polar solutes can be easily separated.

Experimental Learning part-2: Science can be perpetuated through experience in things in first place. Only **observation** is the key for evidencing the progress of a system or a reaction. Evolution of a **coloured gas**, formation of coloured precipitate, change in colour of a solution at end point, **noticing** point of crystallization all these things are done while doing an experiment. **Making a note** of these reading helps a learner the importance of mild and hard conditions. **Just to exemplify** the recent debacle in Vikram lander's hard landing in lieu of soft landing. **Thus, science** can be internalized through experimental learning.

The Practice:

Implementation of practice: While doing an experiment like in chemistry the formation of **product and yield** help in learning through live reflection. In spite of products or results being **less precisely**, accurate or more real it helps the ward in actualization of real subject.

For instance, Rama and Uma are two students, the former has experiential learning while the later has **bookish** knowledge. The conversation about conductance of strong electrolyte solution is as follows

Rama: Even after **dilution** of sodium hydroxide solution the conductance remained unchanged.

Uma: The conductance will change as number of ions are changing.

Rama: The total number of ions doesn't alter even with dilution of strong electrolyte.

Uma: Ok it changes only in weak electrolyte.

Rama: Yes, equivalent conductance is inversely proportional to volume.

Innovative Practices