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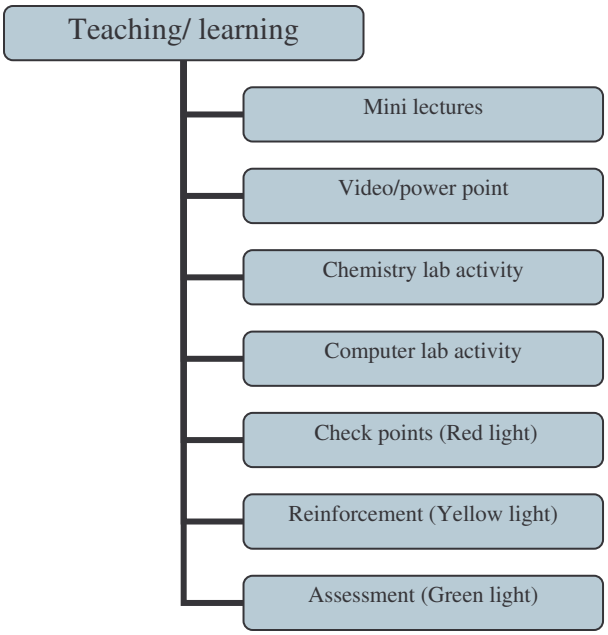
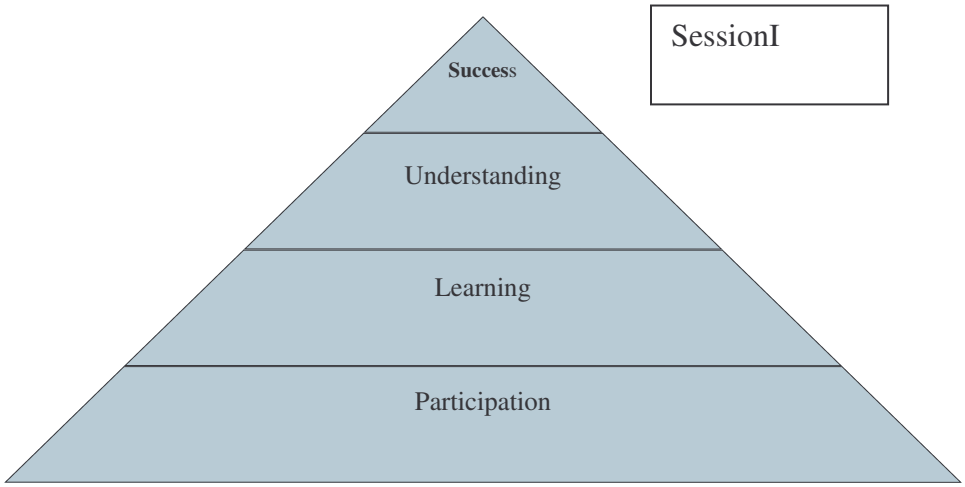
Subject	Chemistry
Topic	Exploring Chemistry through Technology

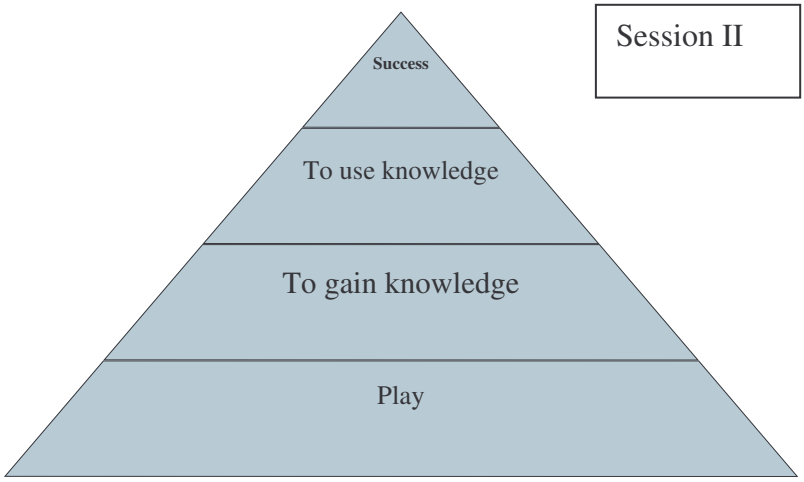
Abstract

Following is the abstract of strategy followed by me during class teaching.





Session II



Key words

Model class room

- Is a lecture-theater
- Equipped with computer connected to the over-head projector.
- White board
- The interactive Computer Aided Teaching content, CD, is stored on server which further connected to the above computer.

Performance analysis system

- This application is for Class IX, X, XI and XII and can be used for
  - Creating question papers based on blooms taxanomy
  - Create subjective questions and Objective questions.
  - Create online tests

The Computer based learning

- Self paced learning
- Common location accessible by all teachers

Eportal

- Collaborative tool for all stake holders (Parents, Teachers, Management and Students)
- Online and offline activities can be scheduled

CHEMSENSE

- Chemsense visualizing chemistry is tools for investigating, visualizing and discussing chemistry in the class room. http://chemsense.org

My philosophy of teaching is that it is a two way learning process. In the search of knowledge one should encourage students to become active and life long learners .Learning process must include inter disciplinary learning, team work and development of interpersonal skills. I believe that a teacher should be there with the students whenever they are stuck. I believe in first introducing the topic and then letting them explore it on their own. During the process they ask questions and then answering their questions sometimes directly and some times guiding them for further exploration. By satisfying their curiosity at each level and showing the path for further learning will make teaching learning an interesting, forward looking process.

My strategy for effective teaching learning is----------

Activities	**Objectives**
Dividing topic in small capsules of 40 minutes each.	Students can concentrate better for 15 -20 minutes at a stretch.
Each capsule may include-----	
A …Introduction through video based content or showing some photographs downloaded from internet.	To arouse curiosity
B. Giving case study.	To bring real life situations in the class room.
C. To provide some web links or suggesting some reference books.	Making students to think deeper.
D. Giving some activity or experiments to perform in the chemistry lab.	To encourage creativity among students and involving them.
E. Provide them with some models or charts or some online activity.	To increase active involvement of students.
F. Recap of the content through power point presentation.	Re enforcement of the topic covered
G. Providing check points. through 1. Objective questions 2. conceptual questions and group discussions 3. Writing a short paragraph.	To encourage student participation and monitoring their progress.
H. Providing a magic jar.	To encourage shy and hesitant students.
I. Content mapping by students.	For reinforcement and a group activity.
J. Finally a green signal i.e. assessment.	To check their understanding.

The sequence **followed may vary from topic to topic**. Further each topic requires a special treatment depending on its requirement.

I would like to share my experience about a lesson which I had planned for class XI students in chemistry. The topic was "**Chemical bonding**". This topic was quiet a huge topic for which CBSE has allotted 16 periods of 40 minutes of duration, roughly around 11 hrs. I divided the topic in 8 sessions .Each session had two classes of 40 minutes each. First session introduced and elaborated the topic. Second session included the chemistry lab activity as well as computer lab activity followed by a short quiz.

Session I (40 minutes)

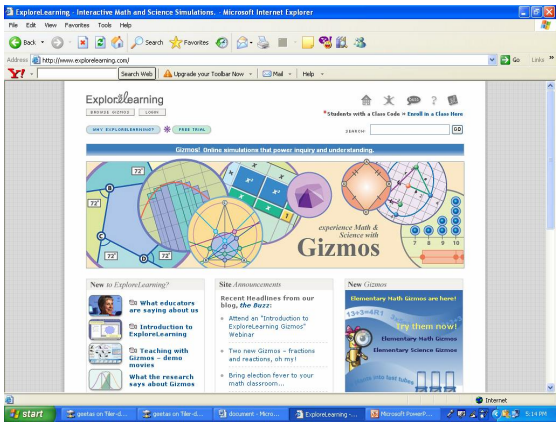
Activity 1 (15 minutes)
To provide the basic idea of the topic and to generate curiosity I have shown them a video based content on chemical bonding in model class rooms. . Further to develop the concept of sharing and caring I gave few real life examples to them.

Outcome ----- This gave a good start for my lesson as it created curiosity among students. By viewing video they tried making some molecules from their previous knowledge of electronic configuration and periodic table.

Activity II (15 minutes)
I provided them few web links for further development of the content. They came up with very good pictures and a lot of questions. I answer to few of their queries.

Outcome ----- They were sufficiently charged for active participation in the class.

Activity III. (10 minutes)
This was a group discussion time



Session II (40 minutes)

Activity IV

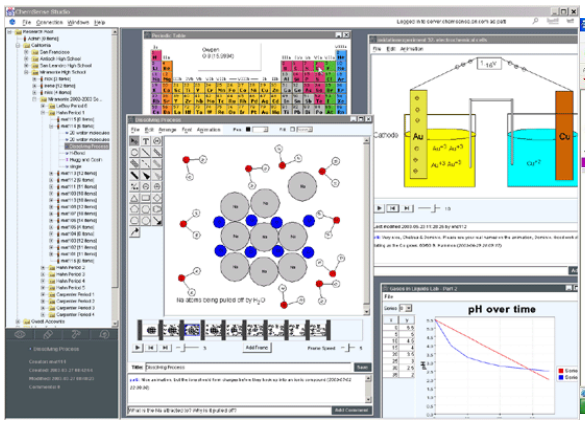
I took them to chemistry lab .They performed experiments to learn about few properties of different compounds like conductivity and solubility .They performed few reactions to differentiate between ionic and covalent compounds.

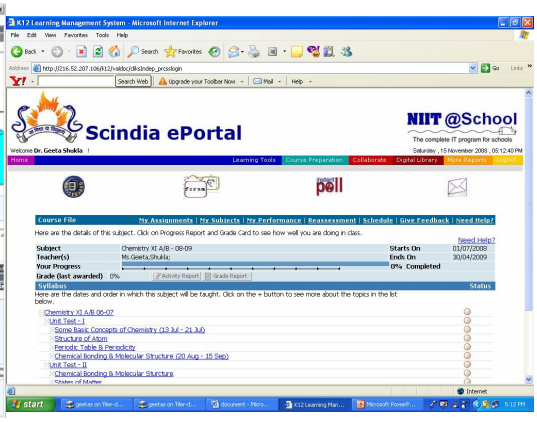
Out come ---- they could very well understand the difference in the properties of different compounds.

Activity V

At this stage I told them about a software 'chemsense' using this tool I told them to draw "Lewis Dot" structures of various compounds. While they were playing this tool I asked them to draw structure of BF_3, $BeCl_2$, PCl_5, and SF_6etc which do not follow the octet rule.

Out come ------ They had their share of enjoyment .They were also curious to find about the reason of stability of such compounds.





Activity VI

Summary I flashed the keywords used and definition of relevant points covered up to this stage. I reinforced the topic through a power point presentation especially prepared to cater their need.

Activity VII

Evaluation For evaluating their performance a quick test was taken online through Performance Analysis System a tool available

at our school. I downloaded a quiz from internet .This saves a lot of correction works and also provides a quick feed back about the success of a lesson.

Activity VIII

Content mapping I gave this as assignment to be done in a group.They can submit their assignment through e.portal

Outcome ---------- After activity VI, VII, VIII reinforcement of the content was complete .This also prepare them for next capsule.

When I started with the next session content mapping provides a quick recap and warm up. For different topics different activities were planned like for overlapping of atomic orbital an interesting activity with balloons and soap bubbles were designed. Ball stick models were used for explaining geometrical shapes and chemsense software application was used.

Since most of the content was on video or PowerPoint presentation student can use it themselves and if some has missed the class can use it for clearly understanding the concept. Providing all the material to students through common folder enables them to use it again and again. Students can submit their assignment using computer and can mail me at Scindia mail.

Thus technological advancement help in interactive class room leading to effective teaching learning. The outcome is happy and satisfied teacher as well as student.

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