

Innovative mode of new learning. (with special reference to rural institutions)

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Introduction

- A revolution in technology of learning systems.
- The modern approach of teaching & learning changed drastically.
- Modern tools : OHP, LCD, CD-Rom, Video conferencing, virtual imaging and experimental approach
- Commendable significance in teaching of Science.
- Hurdles in the application of these modern methods of teaching in the rural institutions, have been emphasized in the present paper.

Modern tools of teaching:

- OHP,
- LCD,
- CD-Rom, visual clippings, movies
- Video conferencing;
- Virtual imaging
- Animation
- Experimental approach, simulations.

1. OHP

- Overhead projector
- Helps in magnified material presented on transparency.
- Skill required: Preparation of transparencies by writing with special pens, xeroxing, colour xeroxing, computer printing.

1. OHP: advantages:

- More matter displayed in little space.
- Photographs, diagrams, figures, tables, data can be displayed.
- No need to learn by heart.
- Correct information can be given.

1. OHP: Disadvantages

- Two dimensional view.
- Handwritten transparencies look odd. Very similar to the black board writing.
- Matter xeroxed from books reflects that less efforts have been taken for the preparation.
- Computer printing little costly.
- Requires uninterrupted electric supply.
- Storage and exchange difficult.

2. LCD

- Helps in magnified material displayed on screen from power point presentation.
- Skill required: Preparation of slide show using efficiently the power point presentation.

2. LCD: Advantages:

- More matter can be displayed very effectively.
- Application of Design and animation effect accompanied by sound effects makes the slide show more effective for learning and to draw proper attention of the students/viewers.

2. LCD:

- Cost of the LCD projector is high.
- Cannot be made easily available.
- Special requirement of the hall and screen.
- Skilled end users can do the presentation efficiently.
- Requires uninterrupted electric supply

3. CD-Roms

- Live display of events, films, discoveries can be done effectively.
- Useful for the demo of live animals and dangerous creatures too.
- Lifecycles can be easily understood.
- Live demo of microscopic phenomena can be displayed with cameras connected to microscopes. (micro image projecting system)

3. CD-Roms:

- Availability of recorded CDs relevant to the syllabus.
- Display of the CDs requires special hall, proper electric supply etc.
- Preparation of films requires specially skilled recordists equipped with highly specific CADcams etc.
- Provide two dimensional view closest to three dimensional material.

4. Animation

- Demonstration of three dimensional material with modeling in two dimensions.
- Significance to understand the external features of the study material/specimens like crystal structure, DNA etc.

4. Animation :

- Real view is missing.
- Special animation softwares and skilled, efficient end users are required.
- Scientific softwares are available with add-on supporting programmes only with agencies like American Chemical society etc.

5. INTERNET:

- Best for references.
- In tune with globalization.
- Recent information can be obtained.
- Provides updating of knowledge, as science is being ever-changing subject.

5. INTERNET:

- Proper selection of correct relevant required information is essential.
- Proper use of search engines with selective approach is required.
- Question mark on authenticity of the information.
- Misuse of information and tool is the threat.
- Access to www in rural institutions is problem.

6. Virtual imaging:

- Highly innovative method of displaying 3 dimensional view of study material.
- Very similar to models but made with light effects live in front of the audience.
- If displayed in large space like stadium, large members can view.

6. Virtual imaging:

- Special LASER projectors and skilled operators are required.
- Physical method of understanding ie. Like touching the model is not possible because the model as such does not exist at all.

7. Experimental approach:

- Useful for demonstration of experiments.
- Concepts made clear, creating interest in the subject.
- Visible effect which can be viewed, touched, smelled and experienced.
- For else, simulation technique can be used.

7. Experimental approach:

- Costly chemicals and skilled demonstrator are required.
- Limited to limited viewers.
- Some lengthy and dangerous experiments can not be demonstrated eg. Atomic explosion, radioactivity etc.
- Lack of liveliness in simulation programmes.

8. Video conferencing:

- Sharing of expertise from distant places made available for distant students.
- Highly innovative method for theoretical teaching.
- Interaction is possible.

8. Video conferencing:

- Lack of live experience.
- Not for experimental matter.

Significance:

- In the light of globalization, the learning in school, which is mostly restricted to the classes, is required to be evaluated to provide the need of market and the developments in science.
- The existing electronic medium is most powerful to fetch these needs of the students. It has been an experience that the perfect understanding of the scientific concepts gives birth to the growing interest of the students in science.

Hurdles in the applications: (In rural institutions)

- 1. Infrastructure:
- Unavailability of appropriate lecture halls with proper light system, ventilation.
- Unavailability of computers, CDs, INTERNET connectivity, LCD projectors, OHPs, slide projectors etc.
- Lack of funding.

Hurdles in the applications:

- 2. Ignorance of teachers.
- Very few science teachers are aware of the modern instructional methods.
- Depend on chalk and talk method even for teaching science.
- Fear of early completion of syllabus.
- More efforts to be taken to collect, prepare and present the large amount of matter in little time.

Hurdles in the rural institutions:

- 3. Students :
- Supposed to be poor and deprived economically and educationally.
- Purchasing costly equipments is impossible.
- Ignorance and hesitation of the students in handling the costly gazettes.

Conclusion: It is essential to have following:

- Teacher's training programmes.
- Provision of infrastructure.
- Generation, collection and sharing of more e-contents and study material.
- Collaborative, integrated and interdisciplinary approach of teachers and technical experts.

- Rural youth is looking for
- Less expensive technology/gazettes,
- Motivating, skilled and committed teachers,
- To be in tune with globalization.

Thanks a lot