



# Classroom Process through Virtual Classroom Modules

DR. YOGESHKUMAR R. PARMAR

Lecturer,

Smt. S. I. Patel Ipcowala College of Education, Petlad-388 450.

## 1. Introduction

The end of 20<sup>th</sup> century and beginning of 21st century has witnessed very exciting changes. One of them being in the field of information and communication technology. World over governments are making attempts to formulate strategies to make use of information and communication technology to improve their competitiveness in business, industry and education and provide a better quality of life to their citizens. Information technology is the technology of the present and the future. In general, information technology deals with information handling, data storage, access, retrieval, analysis and intelligent decision-making for enhancing organizational effectiveness and eventual success. It can be defined as a medium and a means to produce or transfer information. The computer, the television and the telephone are the media of information. The convergence of these technologies has become a reality in the present times. The future will see more novel and exciting changes, therefore we should be ready for these changes in the field of education as well.

In India as well, so many university started using technologies like computing, communications, broadcasting and the internet to provide cost-effective education to its learners. This type of education is called e-learning. It provides the following benefits.

- It is cost effective.
- It has outreach to the masses.
- It is flexible: promises to deliver just-in-time learning so that student can learn anywhere and anytime. No demand and over and over again.
- It is student centric rather than teacher oriented. Learners control the contents and the pace of learning. Thus it provides self paced learning.
- In fact, it provides Personalized Learning. Advances in e-learning technology allow for a customized learning experience that fits their learning style, schedule and preferences.
- It provides consistent and uniform training for every user.
- It simulates a personal tutor and the expert on-site.
- It is available even at remote places.
- It evaluates student performance.
- It imposes no time constraints on the learners. They don't have to miss time from work and attend classroom.

Above all, eLearning has global reach. Technology can be easily integrated into the educational system to provide global reach and real-time experience. E-Learning is implemented in many forms depending on the media and the learning styles of the users.

## 2. What is Virtual Classroom?

Virtual classrooms are complete programs of learning. They consist of a mixture of synchronous and asynchronous events. They are special application of computer and network technologies to the task of education. Virtual is something whose existence is simulated with software. Actually, they are considered as teaching and learning environment located within a computer-mediated communication system. All activities and interactions take place through the computer instead of face-to-face. Virtual

education refers to instruction in a learning environment where teacher and student are separated by time or space, or both, and the teacher provides course content through course management applications, multimedia resources, the internet, videoconferencing, etc. Students receive the content and communicate with the teacher via the same technologies.

Virtual classrooms (VC) may involve three overlapping scopes of interaction technologies: Virtual classrooms courses, meetings and presentations. Among the synchronous events are online meetings, which may include online presentations.

“The Virtual Classroom”, according to Hiltz and Turoff (1994), “is a teaching learning environment constructed in software, which supports collaborative learning among students who participated at times and place of their choosing. While students may access only the records of their activities the instructor can review activity status of any student, require that activities be done in sequences, and designate activities as required or optional.”

- **Design principle used in building Virtual Classroom Modules (VCMs)**

This paper discusses various graphics design and instructional design principle used in the creation of VCMs. When learning content is created for use as VCM, it is to be conceptualized as part of a larger whole (such as a course) and as stand-alone information at the desired level of granularity. Creation of VCM requires good instructional design, on the contrary, the presentation of VCM to the learners requires excellent graphics design. Some useful principles in design and development of VCM are discussed as under.

- **Refer to common glossary of terms and concepts**

Consistent terminology in a given domain allows VCMs to be easily reassembled into courses, retaining consistent meaning.

- **Use simple sentence**

Complex sentences are hard to comprehend. Break them into simple sentences. Do not use less known words.

- **Use data visualization techniques**

Technical information is easily comprehensible if presented in tables, bullets, or columns rather than in sentences and paragraphs.

- **Information delivery through computer screen**

As VCM will most frequently be accessed and used on the computer screen, address issues like to screen resolution, color depth, aspect ratio, flatness of the surface, distance between the screen and the user are very important aspects.

- **VCM should be self-contained**

Information needs to be free-standing and easily adapted to multiple contexts. This means that one VCM should not make any reference to another one.

- **Use of keywords**

Use keywords to provide searching and linking capabilities.

- **Target at a broad audience**

Use such language and content for a VCM so that it is addressable to broad target group.

- **Keep educational goal in focus**

Add only that content which is relevant to the given goals of the VCM. Avoid adding unrelated activities or features. If the activity does not support any of the educational goals, omit or redesign it.

- **Keep subjects in focus**

Keep in mind that different types of content are suitable for different formats and subjects of learning. So that always keep in mind that irrelevant subject should not merge in the content.

- **Offer various learning paths to the learner**  
Offer multiple paths for learner to explore. Display a tree structure of courseware so that learner can select a path himself.
- **Reveal structure**  
When a sighted user first encounters a Macromedia Flash screen, her eyes will normally scan immediately through the visual elements. She will read the text, process the images and identify the buttons. Experienced designers know how this process works for most users and take advantage of it. Important elements are organized into rows and columns, usually starting at the top left. Color is used to group elements and also to distinguish them. Visual cues are used to identify the relationships among items and ideally, what can be done with them.
- **Offer constructive feedback**  
As the learner completes tasks, answer questions, or achieves goals, provide immediate feedback that focuses specifically on his or her progress. Provide constructive feedback that prompts learners to take actions to correct errors.
- **Provide test**  
Provide a pre-requisite test so that learner can decide whatever he is prepared enough to study the given VCM. Similarly provide post-learning test so that he can judge his performance at the end of unit or course.
- **Pleasing look and feel**  
The appearance of the user-interface should be pleasing and appealing to the learners. Bad interface distracts learner's attention from the content.
- **Maintain visual balance**  
Layout various media elements like text, graphics, charts etc. in such a way that the screen appears well balanced. Adjust colors, shade, position or size of media elements to create balance.
- **Maintain audio/visual rhythm**  
Repeat a media element at appropriate locations in the timeline. It creates a sort of rhythm in the minds of the user. It also helps learners to know the beginning and end of various learning units across the timeline.
- **Use harmonious color scheme**  
Avoid using contrast colors among various media elements. Most of the objects should have close colors, except those that require learner attention should have prominent or even contrasting colors.
- **Maintain uniform background color scheme for a given VCM**  
Uniform background color scheme provide consistency in learning the contents and avoids distractions from sudden changes of the background.
- **Use limited number of colors and fonts**  
Use of large number of fonts and colors of text makes the screen clumsy to read. Hence, use a limited number of colors and typefaces or fonts, and use them consistently throughout.
- **Use consistent and easy to use navigational controls**  
All screen or pages should have a consistent layout, color scheme, and overall look. Keep look and position of all navigational elements consistent on each screen. Students learn to use VCM more quickly and make fewer mistakes if controls function consistently. Provide big size navigational controls so user can easily locate and click the buttons. This avoids the diversion of attention of the user from the contents that he is studying.
- **Follow established conventions to avoid relearning**  
Place various icons, navigational controls and menu items at similar locations as found in other well-known applications and web-sites so that learners can take advantage of what they already know.

- **Keep design simple and avoid overcrowding of screen**

Minimize the amount of media elements on the screen. Use ample white space where ever possible. Too many media elements, themes, or colors distract and confuse learners.

### 3. Advantage of virtual classroom modules

The development of VCM as learning objects will reduce cost, development time and learning effectiveness when the VCMs will be reused many times. From the delivery perspective, a higher level of individualization is possible by personalization, of curriculum with individual needs and interests. The learning objects are characterized by:

1. **Flexibility:** If material is designed to be used in multiple contexts, it can be reused much more easily than material that has to be rewritten for each new context. A well-designed learning object can offer access to knowledge through multiple modes of learning. Students who learn particularly well by auditory means, for example, may find an interactive learning object with voiceover instruction to be effective.
2. **Easy searching:** Add metadata in the form of keywords to facilitate rapid searching and selecting only the relevant content for a given purpose.
3. **Competency based learning:**
4. VCM provides mechanism to construct modular courses, which is one of the desired features implementation of competency based learning.
5. **Cost effectiveness:** As non-consumable resources, VCM can be used in a courses from one semester to the next. Some can be re-purposed for different courses or even different disciplines.

### 4. Conclusion

Thus, VCMs can be delivered through satellite based system, the internet or the CD-ROMs. Building VCM is not about taking a course and putting it in the desktop. It is about a new blend of resources, interactivity, performance support and structured learning activities. Through this modules we can teach very effectively in the distance mode of education and even in day to day classroom situation as well. Students always likes to audio-visual presentation and if we are making the VCMs with the help of before discussed points, the material is surely helpful to teachers as well as students.

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