



## TECHNO BASED TEACHING PROFESSION: AN ILLUSTRATION USING A-VIEW SOFTWARE

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### Abstract

The purpose of this paper is to evaluate the traditional methods of teaching as well as technology enhanced teaching and to suggest useful teaching methods that can be attempted to improve the quality of teaching learning process. This paper highlights the potential of technology enhanced classrooms enabling creative learning environment. Technologies play a crucial role in learner's lives and can act as a platform to improve teaching learning experiences. An attempt is made in this paper to illustrate a technology enhanced classroom by using A-view as an interface. This paper describes the advantages of A-view. A-view is a simple, user friendly video conferencing software which provides greater opportunity to a teacher to teach in a live interactive mode to various geographical locations. Various aspects of A-view classrooms in higher education are discussed. Paper concludes with the various pedagogical aspects of technology enhanced classrooms.

**Key Words:** Innovative Teaching, Learning Strategies, Technology Enhanced Classrooms, A-View, Higher Education.

### Introduction

Education is a light that shows the mankind the right direction to surge. The purpose of education is not just making a student literate but adds rationale thinking, and self-sufficiency. When there is a willingness to change, there is hope for progress in any field. Creativity can be developed and innovation benefits both students and teachers. Education is an engine for the growth and progress of any society. It not only imparts knowledge, skills and inculcates values, but is also responsible for building human capital which breeds, drives and sets technological innovation and economic growth. In today's era, information and knowledge stand out as very important and critical input for growth and survival. Rather than looking at education simply as a means of achieving social upliftment, the society must view education also as an engine of advancement in an information era propelled by its wheels of knowledge and research leading to development.

Teacher education system holds the key responsibility in the making of professionally qualified, capable and competent teachers. it enhances the professional quality of teachers and laid emphasis on acquainting the teachers with technological advancement so as to increase the modern teachers. it is the need of the hour that teacher are face the changing technological contents and to model pedagogical tools for better forms of learning. The professional development has become an essential programme of activities aiming at the continuing growth of teachers to update and enrich their professional competency to strengthen their commitment and enhance their professional performance. A techno competent teacher to be called a professional should have the 'ability to do' and the 'will to do'. In other words an explicit and well defined professional ethics has to be laid down in teaching profession.

### Traditional Teaching Method – An Evaluation

In the pre-technology education context, the teacher is the sender or the source, the educational material is the information or message, and the student is the receiver of the information. In terms of the delivery medium, the educator can deliver the message via the "chalk-and- talk" method and overhead projector (OHP) transparencies. This directed instruction model has its foundations embedded in the behavioral learning perspective (Skinner, 1938) and it is a popular technique, which has been used for decades as an educational strategy in all institutions of learning. Basically, the teacher controls the instructional process, the content is delivered to the entire class and the teacher tends to emphasize factual knowledge. In other words, the teacher delivers the lecture content and the students listen to the lecture. Thus, the learning mode tends to be passive and the learners play little part in their learning process (Orlich et al., 1998). It has been found in most universities by many teachers and students that the conventional lecture approach in classroom is of limited effectiveness in both teaching and learning. In such a lecture students assume a purely passive role and their concentration fades off after 15-20 minutes. Some limitations which may prevail in traditional teaching method are

- Teaching in classroom using chalk and talk is "one way flow" of information.
- Teachers often continuously talk for an hour without knowing student response and feedback.
- The material presented is only based on lecturer notes and textbooks.
- Teaching and learning are concentrated on "plug and play" method rather than practical aspects.
- The handwriting of the lecturer decides the fate of the subject.
- There is insufficient interaction with students in classroom.
- More emphasis has been given on theory without any practical and real life time situations.
- Learning from memorization but not understanding.



- Marks rather than result oriented.

In order to overcome these limitations in traditional teaching, we introduce technology enhanced teaching to support instructional approaches and to improve teaching learning process.

### **The New Technology as Teaching-learning Resources**

It is already predictable that the use of technology in education is enriching in many ways. Yet there are voices arguing that is time consuming, costly to implement, and with benefits that remain unclear or dubious. The way we understand the need of implementing the use of new technologies in educational process depends on many factors, such as:

- Our overall understanding about quality teaching and learning, educational goals and values.
- The learning objectives we target
- The methods and teaching style
- The social context and personal issues

Technology has revolutionized our culture. Children are born and raised in an environment where anything can be reached easier and faster. Our education system is rushing to catchup with these profiles of learners through the deployment of technology-enhanced learning facilities. An increasing number of institutions have effectively integrated technology in their learning environments to support novel instructional approaches and improve teamwork, in an effort to reform education (Schrum & Levin, 2010). During the last decades though, little has changed in conventional classrooms despite the rapid and wide proliferation of technology, and the soaring enthusiasm of learners for smart gadgets (Tantatsanawong, Kawtrakul, & Lertwipatrakul, 2011). The lack of sound reference models may have contributed to this slow move to bridge the digital gap in our classrooms. Furthermore, teachers need to be comprehensively empowered to adjust their instruction capability in any envisioned classroom of the future.

A contemporary education psychologist argues that learners are not just “passive empty vessels waiting to be filled with knowledge by the experts” (Richtel, 2011). Learners bring their own prior experiences, knowledge and beliefs to the classroom and thus they shape the way in which they construct their own individual knowledge, mediated, but not exclusively provided, by the teacher (DeFreitas et al., 2010). The same education psychology expert suggests that classrooms are expected to be “student-centered, promote constructivist activities and communities of practice”. Hence, future learning spaces (Brown, 2005) need to be reconfigurable to meet these changing learning modes.

It is widely accepted across the international Higher Education sector that e-Learning is enabled by the use of particular ICTs which offer students, teaching staff and institutions flexibility in terms of the times, places and pace at which learning and teaching may occur (Turney, Robinson, Lee and Soutar, 2009). Associated with perceived ‘benefits’ for students and teachers alike, the early arrival of eLearning in higher education settings was promoted as offering the potential to enable student centered learning through the realization of constructivist teaching principles. What emerged instead was a ‘transfer pedagogy’ (Salmon, 2005) in which existing approaches to teaching and learning in higher education were applied to the digital environment, such that Learning Management Systems (LMS) were employed as a means of delivering course content to students. Transfer pedagogy was represented by uses of the technology which mimicked existing conceptions of knowledge and knowledge practices. The lecturer remained the ‘expert’ delivering his content through the medium of the lecture; tutorials were used as a space for questions and discussion to occur amongst students and tutors. The eLearning versions of these activities included lectures ‘delivered online in the form of text, audio and or video’ (Alexander and Boud, 2002), and supposed ‘discussions’ occurring in online discussion forums.

Technology-based innovations offer special challenges and opportunities in the learning Process. The systemic reform is not possible without utilizing the full power of high performance computing and communications to enhance the reshaping of institutions. Yet the cost of technology, its rapid evolution, and the special knowledge and skills required of its users pose substantial barriers to effective utilization.

Some principles follow, that teachers must use to support their understanding of potential challenges and design of effective and successful technology-enhanced learning experiences.

1. To understand what possibilities for innovation exist for curriculum development, it is necessary to determine what is possible within existing definitions of what constitutes teaching and curriculum.
2. The capacity to use three modes (tutor, tool, and tutee) is directly impacted by the equipment available, the knowledge of the teacher, and the range of choices that teachers are allowed to make regarding instructional delivery.



3. While planning for a technology-based lesson it is necessary to conduct reconnaissance to find out what facilities, items, and people are available for support and how to access these resources. It is also important to gauge the level of teacher and student technology competence.
4. To accomplish an effective and successful technology enhanced learning experience requires a plan that addresses the elements like, what is the topic of the lesson? What content will be covered? What are the content-knowledge and skill objectives? Etc.

One of the main strengths of the computer is that it has the capacity to appeal to a wide variety of ability levels and learning styles. The same can be said regarding a teacher's strengths. To operate an institution system that limits teachers' capacities and their use of technology to only those items that fit well in a standardized, test-driven, accountability-based curriculum is an injustice that should be challenged. Using technology innovatively and demonstrating through alternative assessment that there are better ways to approach teaching and learning is a positive way to help students succeed and to offer an alternative vision for twenty-first century education. The curriculum should drive the technology. Teachers, relying on and dedicated to high standards, should drive the curriculum.

### **Rethinking Pedagogy**

Educators and institutions are increasingly beginning to recognize that the philosophy and ethos prevalent in the Web 2.0 world in which we live are highly incongruent with the control culture of education, where teacher-designed content and syllabi dominate. Today's world is characterized by social mobility and diversification of life trajectories, where individuals are expected to have multiple career paths and engage in deskilling at various stages throughout their lifespan. All of this signals a need to reconsider our notions of pedagogy so that learners are envisaged as active participants and co producers of learning resources rather than passive consumers of content, and learning processes are participatory and social, supportive of personal life goals and needs (Brown & Adler, 2008). There is a clear imperative for educators and students to move towards a social and participatory pedagogy rather than one based on the acquisition of pre-packaged facts. Siemens (2007) is also critical of how institutions of higher learning operate and states that they "need to change because of the increasing complexity of society and globalization. Schools and universities play a dual role accommodating learner's [sic] method and mode of learning and transforming learners and preparing them to function in the world that is unfolding".

A further driver of change is the students themselves, their preferences, needs, social habits and technology choices. Along with the uptake of mobile devices and the rise of social media, tertiary student profiles indicate that a large proportion of students now juggle work and study, expect constant Internet connectivity and web based services, and view social networking tools as being central to their lives (Windham, 2005). Conole and Creanor (2007) report that students "have high expectations of how they should learn, selecting the technologies and learning environments that best meet their needs with a sophisticated understanding of how to manipulate these to their advantage" (Page. 11). As Web 2.0 is participatory and collaborative, enabling connection globally with multiple social spheres, there is an increasing gap between the formalized interactions that occur in educational establishments and the modes of learning, socialization and communication that youth experience and engage in. In particular, in the dominant tertiary education paradigm, students are presented with resources that have been created by teachers, instructional designers or developers, and are expected to demonstrate that they have absorbed the content therein through assessment tasks that rely on recall of information rather than on application, initiative or creative Endeavour.

The challenges for educators are complex and multifaceted, and include the provision of personalized learning experiences using suitable technologies that cultivate independent learning skills, while also scaffolding learner reflection and the development of generic competencies. The pedagogical change that is required involves not only the espousal of appropriate teaching approaches, but also awareness of the learner experience, and the importance of valuing learners' pre-existing skills and capitalizing on them. Addressing the need to rethink and reposition pedagogy for the new learning landscape of the 21st century calls for the active involvement of students in defining their learning goals and choosing both ICT tools and strategies for learning; it also requires recognition that user and learner generated content has a central place in a curriculum that fosters self regulated learning. There is a fine balance to be achieved in attempting to promote learner control, knowledge creation, agency and autonomy by offering flexible options and choice, whilst offering guidance and structure when needed and adding value to the learning process through personalized, customized and adaptive approaches.

IT enabled learning with efficient tools is the most effective way to address the issues in educational opportunities. It provides self paced learning and may be instructor assisted. The most important challenge is developing tools and techniques and creating an invigorating learning environment with associated testing methodology to meet goals. Tremendous advances in computer technology and the evolution of the Internet have led to new approaches in learning and training which are



summarized under the term IT enabled Learning. An attempt is made in this paper to illustrate a technology enhanced classroom by using A-view as an interface.

### **A Demand for techno –Competent teacher**

The Present age of information explosion necessitates the teachers to be multifaceted personalities. It is the teacher, who not only generates the knowledge base from theoretical understanding and field experiments but also identifies relevant knowledge transaction strategies and converts the tacit knowledge in to explicit knowledge. There is a need to refresh professional as well as academic knowledge of teachers and to encourage them to break new ground in content areas ,teaching methods and administrative procedures, which leads to professional competencies of teachers. To survive in the rapid information explosion environment, the teacher needs to know not only how to retrieve the information but also the mode of evaluating, organizing, analyzing and applying information so that it becomes knowledge. Knowledge in turn leads to their empowerment, making teachers in engaging and sharing experiences and having consensus necessary for informed actions by utilizing relevant local technology skills in accessing, analyzing, evaluating, synthesizing and use of information.

In this era of rapid technological advancement, role of the teacher is expected to be quite different from the conventional classroom teaching. No more, he is going to be the main source of knowledge and besides transferring the knowledge to be multidimensional. The key point of instruction is not the fusion of information but the construction of knowledge, cultivation of abilities and illumination of wisdom.

### **A-View in Empowering Teacher**

A-VIEW (Amrita Virtual Interactive e-Learning World) is an award winning indigenously built multi-modal, multimedia e-learning platform that provides an immersive e-learning experience that is almost as good as a real classroom experience developed by Amrita e-Learning Research Lab.It is a simple, user friendly video conferencing software which provides greater opportunity to a teacher to teach in a live interactive mode to various geographical locations. It is a real time collaborative multimedia e-learning platform which allows an instructor to teach live a large number of distant classrooms. Since 2004 Amrita e-learning research lab (Amrita University)has been actually engaged in developing the A-View platform and delivering lectures. A-View classroom provides various tool for the live interaction between teachers and students Even though they are geographically separated from each other. It is currently used at hundreds of universities, colleges and organizations across India.

### **Equipment required to run A-View**

- Computer/Laptop with internet connection
- Head set/ microphone and speaker
- Web camera/Video camera
- Display board like TV screen/Projector

### **Features of A-View Classroom**

1. Recorded Classes: A-VIEW records live classes for future use by teachers and students.
2. Sharing of animation and YouTube videos: A-VIEW has the capability of sharing content such as animations and YouTube videos to users. This could work as great material for teaching.
3. Adaptive Bandwidth: A-VIEW works well with fast and slow internet connections. For fast connections, video and audio would be streamed at high quality. It has the ability to detect slow connections and stream audio and video as per the bandwidth available.
4. Multi-Modal interaction: Teachers and students can interact with each other through various methods such as Audio, Video, Text Chat, and interactive whiteboard.
5. Document Sharing: It is possible to share PowerPoint slides, pdf, Word documents, Excel worksheets, JPEGs, etc. in A-VIEW.
6. Multi-Device Compatible Whiteboard: A-VIEW comes with a digital whiteboard which works similar to a real life whiteboard. It is possible to connect this whiteboard to various devices such as iBall Take Note, U-Board etc. for a more comprehensive experience.
7. Acoustic Echo Cancellation (AEC) helps the user to have a clear conversation without echo during a live class.
8. Hardware Pre-Testing: The system checks the hardware at the client machine and alerts the user if a device is not connected properly.
9. Question Interface enables the users to post their doubts in the question view and other users can vote for the same, this helps the instructor to easily find and focus on the top priority questions.
10. Quiz helps the presenter to conduct live quiz to assess the progress of the students



11. Can be run on multiple platforms like windows, Linux and mobile devices.

### **Various Aspects of A-view in teacher education**

A-view classrooms will change the nature of teaching on campus, making it more engaging and efficient. The traditional model of instruction, where students go to class to listen to lectures and then head off on their own to complete assignments, will be inverted. Students will listen to lectures and review other explanatory material alone on their computers and then they'll gather in classrooms to explore the subject matter more deeply—through discussions with professors, say, or through lab exercises. In theory, will allocate teaching time more rationally, enriching the experience of both professor and student. In order including basic knowledge and understanding to match contemporary demands for competencies, professional skills as well as personal qualities such as flexibility, creativity, independence, responsibility, service orientation etc. there is a need for a new concept of learning covering the development and acquisition of all such competencies (Illeris, 2001). Stolovich (2006) mentioned that many graduate programs are producing instructional designers, who increasingly are being employed by industry and universities to create materials for distance education programs. These professionals often employ e-learning tools, which provide distance learners the opportunity to interact with instructors and experts in the field, even if they are not located physically close to each other. More recently a new form of Instructional technology known as human performance technology has evolved.

In teacher education especially, the increasing tendency is to create a Virtual Learning environment (VLE), which is sometimes combined with a Management Information System (MIS) to create a Managed learning environment, in which all aspects of a course are handled through a consistent user interface standard throughout the institution. A growing number of physical universities, as well as newer online-only colleges, have begun to offer a select set of academic degree and certificate e programs via the Internet at a wide range of levels and in a wide range of disciplines. While some programs require students to attend some campus classes or orientations, many are delivered completely online. In addition, several universities offer online student support services, such as online advising and registration, e-counseling, online textbook purchase, student governments and student newspapers. At the same time, e-Learning refers to educational web sites such as those offering learning scenarios, worksheets and interactive exercises for children.

### **Conclusion**

Across the world, information technology is dramatically altering the way students; faculty and staff learn and work. Internet-ready phones, handheld computers, digital cameras, and MP3 players are revolutionizing the college life. As the demand for technology continues to rise, colleges and universities are moving all sorts of student services, from laundry monitoring to snack delivery online. Technology is also changing the classroom experience. The classrooms are wired with cameras for photographing whiteboards, so students can receive the images as digital files. In addition, tablet PCs, Compact computers that allow you to write notes directly on to the screen with a special pen, replace the archaic projector. With the tablet technology allow professors to make notes on charts and spreadsheets and send them directly to their students' PCs and he will get a feedback from each student.

From the above, we can make out that the Information and communication technology has made many innovations in the field of teaching and also made a drastic change from the old paradigm of teaching and learning. In the new paradigm of learning, the role of student is more important than teachers. The concepts of paperless and pen less classroom are emerging as an alternative to the old teaching learning method. Nowadays there is democratization of knowledge and the role of the teacher is changing to that of facilitator. We need to have interactive teaching and this Changing role of education is inevitable with the introduction of multimedia technology.

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