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ICT and Instructional Multimedia Content for conducting teachers training programs

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Abstract

In the globalize world, there is no alternative for the quality. It applies to education sector as well, especially in higher education. Because of rapid development and changes in Indian Education System, almost all teachers have to work in a competitive and challenging environment, where every teacher need to be updated with its own subjects as well as he or she need to acquire additional skills which will enforce their academic profile. To face the competitive environment at both work and Institutions, the teachers should have adequate Knowledge, Skills and desired Abilities to perform.

To develop all teachers to face these global challenges, it is the major responsibility on Educational Institutions and Universities to provide quality education to their teachers. The major problem is the time and space for organizing special training programs for teachers as most of the teachers are engaged in various administrative and academic responsibilities of the institutions and universities.

The main aim of this research paper is to encourage all the professors to use ICT and rich multimedia content developed with proper instructional approaches to conduct teachers training programs to improve overall teaching learning process. This will save a lot of time of training Such engaging and motivating training sessions will help teachers to understand and acquire new skills.

Keywords – Instructional, multimedia, educational, content, Teachers training, ICT

Technology in itself does not improve education. ... However, if there is a well-conceived educational process taking place in classroom that can embrace technology to enhance that process, then technology may offer a huge advantage.

-Henry Olds
2000

Use of rich multimedia content in delivering classroom lectures

Meta analyses (Bosco, 1986; Fletcher, 1989, 1990; Khalili & Shashaani, 1994; Kulik, Bangert, & Williams, 1983; Kulik, Kulik, & Bangert-Drowns, 1985; Kulik, Kulik, & Cohen, 1980; Kulik, Kulik, & Schwalb, 1986; Schmidt, Weinstein, Niemic, & Walberg, 1985) examined over 200 studies that compared learning information that was presented in a traditional classroom lecture to learning the same information presented via computer-based multimedia instruction. The students were in K-12, higher education, industry, and the military. The information that was learned was included biology, chemistry, foreign languages, and electronic equipment operation. The control group was learned the information via classroom lecture or lecture combined with hands on equipment experience. The comparison group was learned the information via interactive videodisc or some other kind of computer-based instruction. The researchers measured learning using tests of achievement and performance. Over this wide range of students and topics, the meta-analyses found that learning was higher when the information was presented via computer-based multimedia systems than traditional classroom lectures.

Kulik, Bangert, and Williams (1983) found one study that recorded an 88% savings in learning time with computerized instruction (90 minutes) versus classroom instruction (745 minutes) and another study that recorded a 39% savings in learning time (135 minutes for computerized instruction versus 220 minutes for classroom instruction). Both studies involved computer simulation instruction in physics.

Information presented via multimedia may be more novel and stimulating than information presented via traditional classroom lecture. This explanation has some support from empirical studies. Analyses (Clark, 1983, 1985; Clark & Craig, 1992; Khalili.,& Shashaani 1994; Kulik, Bangert, & Williams, 1983) of nearly 40 multimedia studies found that, compared to traditional classroom lecture, learning improvements were higher for groups that used multimedia. Thus, these experiments and researches are proved that when computer or ICT tools are used in classroom teaching, then the quality of teaching increases, it leads to quality and standardized teaching, reduces teaching time, understanding and retention of knowledge increases and the content can be reused again and again by both teachers and trainers.

In this paper, I have emphasized on using best of the best e-content, tools and technology in the teachers training. Only the tools and technology does not improve the classroom teaching and teachers training, but the use of highly engaging presentations developed using and rich multimedia components and correct use of technology makes it more interesting and motivating for the teachers to learn in classroom. This will flourish the

self learning habits in teachers. If the teachers effectively search on the internet they can find lots of good PowerPoint presentations, documents, e-books, video clips, digital photos, images, diagrams, audio clips, teaching plans etc. By using such largely available content, teachers can develop their own classroom presentations in a great way. Multimedia Educational Resource for Learning and Online Teaching - MERLOT have huge digital content stored in the site http://www.merlot.org, which covers various forms of quality e-content in Arts, Humanities, Business, Management, Computer Science and Education. Similarly youtube.com, Wikipedia.org and openlearn.open.ac.uk, www.pptsearchengine.net and many sites can be helpful to search various forms of ready to use e-content to design classroom lectures presentation. There are many sites and companies which sells educational quality content online or in the form of CDs and DVDs. If the college or institution can afford to purchase, it will be the best digital asset for the digital library.

Instructional approaches and theories in designing and developing classroom lectures

Many of the trainers uses PowerPoint slides in their training, but the quality of those slides are very dreadful that may be very tiresome learning experience to the teachers which really affects teaching and learning process. The major issues in the presentation designed by teachers are that most of the slides are crowded with huge text, there are no any visual elements on the slides, and worst thing is that the slide are not followed by any design principles. So, the teacher should be given training to design effective presentation and learning content for classroom teaching. There are various presentation and authoring tools available online like visio, moviemaker, Animoto, Vuvox, Viddix, Prezi, Sliderocket, Empressr and many more. The teachers with basic knowledge can also design stunning classroom presentations. Along with these tools, teachers need to pay more attention towards developing engaging content by applying various instructional designs and learning theories like Bloom and Benjamin cognitive learning theory, Gagne's nine events of learning, and instructional models like ADDIE Model, Dick and Carey Systems Approach Model, Instructional Development Learning System (IDLS) etc. Gagne's theoretical framework was based on the cognitive perspective of learning and emphasized largely on the effectiveness of the instructional design. In his theory, he has correlated the nine events of instruction with the associated internal mental processes and formulated these events as elements of a good lesson which promote effective learning (Gagne, Briggs, & Wagner, 1992). Hence, the development and creation of the Web-based learning environment in this research incorporated with Gagne's 9 Events of Instruction to be considered a good lesson design (Ellington and Earl, 1999).

By using appropriate instructional design model with right authoring tools, the teachers can design their own e-content and classroom presentations for effective classroom teaching.

Use of ICT in Classroom Teaching

There is growing evidence that ICT application to the core business of education can accelerate and improve learning on a number of fronts, from basic skills (Mann 1999; BECTA 2000); problem solving (Oliver and Omari 1999; Williams 1999), information management (Peabody 1996), work habits (Adnanes 1998), motivation (US Congress 1995; Allen 2000;Combs 2000;Diggs, 1997; Sherry, 2001), establishing life-long learning habits (Schollie 2001) and concepts development (Yelland 1998). Tella, Tella, Toyobo, Adika & Adeyinka (2007) examined Nigerian secondary school teachers uses of ICTs and implications for further development of ICT use in schools using a census of 700 teachers. The findings showed that most teachers perceived ICT as very useful and as making teaching and learning easier.

Almost all the teachers in these days use LCD Projectors and multimedia systems to present their lecture in the classroom. But apart from this limited usage, teachers should also use interactive white boards, video conferencing with external experts, and use of recorded video lectures which can improve the overall classroom teaching. Such collaborative teaching and learning method will surely increase the attention and retention of knowledge and skills of the teachers. The complex concepts in science and technology can be well explained by using of high-end 2D and 3D animations, virtual reality and simulations. Use of such content can really enhance the classroom as well as individual learning.

Planning and scheduling classroom training using Blended Learning Approach

Unfortunately, the teachers are engaged with many other administration tasks along with teaching in classroom. Teachers do not get enough time for completion of the syllabus or is finishing the syllabus hurriedly in the end. They do not get enough time to attend special training programs. With appropriate blended learning methods and scheduling systematic learning activities can reduce the burden of teachers. If teacher uses blended learning approach, he can easily achieve the best teaching practices and quality education. Teachers can store the developed instructional multimedia rich e-content or downloaded material into the digital library and then teachers can be given access to use the material. So, the teachers can learn maximum information by accessing, viewing and reading the content. Mentors additionally can record their lectures and teachers can use them as and when they are required. Thus teachers can reduce their teaching load and can spare some time for undergoing various training programs. If the college or institution is adopting the Virtual Learning Classroom System then the professional trainers can broadcast the live lectures from expert teachers and industry professionals on various topics to enrich the knowledge of staff and teachers. Those video can be recorded and reused as per necessity.

Extending classroom learning with social learning using social networking sites and web 2.0 technology

With the wide use of social networking site and use of web 2.0 technology, the term ‘communication’ had been extended with much wider horizon with participation, collaboration, creation and openness. The vast networks of educators, researchers and

policy makers in the field of education can really beneficiated with appropriate use of social networking sites and web 2.0 tools and technology. In engaging communication, teachers can actively participate online on debates, project planning and discussions. This is the great advantage for knowledge sharing with the same interest group. This live participation actually leads very truthful outcomes and clears everybody within the participatory group. As it is direct communication, there are fewer chances of miscommunication or gaps in the communication. In participatory communication, teachers and educators can actually create or use various forms of educational content. It is primarily focused on "openness" or "Open" and meant towards creating and using open source software applications, tools and open educational content. Everything under "Open use" is free and anybody can use or access the open content. The teachers can develop or contribute in developing open content and sharing it with others. Thus the use of web 2.0 technology and social networking sites helps teachers and educators to connect with the network, create the content then communicate and collaborate within the network members and encourages learning from open and collaborative learning environment.

Managing and maintaining learning resources using Content Management System for reuse and future use.

Content Management System provides facility to store and retrieve different e-content, e-books and e-libraries, tutorials, video lectures into Content Management System. The e-content can be stored as per the subject and lesson plans according to the learning path. The Mentors or trainers can design teaching plan of his topics and assigns the necessary content to this learning path. Teachers can login the content management system and can access the learning path and retrieve the attached e-content and continue his/her learning. Trainers keep on adding the various forms of e-content into CMS to keep the system updated.

Conclusion

As this is the new and convenient way of teaching and learning with varied applicability it can become the popular learning environment, where teachers can practice self learning which is the most required thing for the lifelong learning. The teachers can master the 21st century skills of communication and collaboration. Teachers can also widely use this new technology not to reduce their classroom teaching but also can enrich and update their skills and knowledge and can strengthen the teaching learning process.

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