7. RECORDINGS FOR EFFECTIVE LEARNING IN AN ICT BASED INSTRUCTIONAL ENVIRONMENT

Seema Shah*

Abstract

Widespread use of Information and Communication Technologies (ICT) has percolated the educational environment today. Various e-learning mechanisms used in this environment include Recordings and Virtual class rooms, both in educational Institutes and in the corporate sector. ICT based teaching methods differ widely from traditional teaching methods and they provide anytime-anywhere learning, along with a recapping mechanism. These also reduce the number of instructors required by encouraging distance learning. In this paper we have focused on giving an overview of how lecture recordings can cater to today's IT learners. We have discussed the courseware and delivery in an ICT environment and how it differs from the traditional teaching. Next we have described Snagit, a freely downloadable video recording tool and discussed how it can be used to record lectures. With a sample case study and participant's feedback we have demonstrated the positive impact of using lecture recordings and thus enhancing learning in today's ICT based teaching learning environment. Based on the feedback received the recording based model was adopted for various other courses for conducting corporate trainings. It can also be used in an engineering institute to provide any time anywhere learning to the students beyond the classroom.

1. INTRODUCTION

Extensive use of Information and Communication Technologies (ICT) have percolated the educational environment today. Even for institutions with no intention of getting into the distance learning business, networking and access to local and foreign resources is increasingly seen as a necessity of academics. Information and Communication Technologies (ICT) has an impact on all: faculty, students, administrators, and others (parents, community organizations, businesses, etc.) [1].

Learning mechanism today vary from Instructor Led Training (ILT) to using Recordings and Virtual classroom environment – which allows distance independency. The other mechanisms are totally flexible ones like Chalk Board Training (CBT) and Web Based Training (WBT) environments. ICT based e-learning techniques call for educational methods which are not traditional ones like bare classroom delivery using chalk and board method or just the slides. ICT forces us to review some long-held assumptions in relation to pedagogical principles and practices and understand the student's learning curve. Learning is basically a two-way communication and it is essential that delivery from the teacher be matched with active participation from the student. A key issue is the change of the teacher's role in e-learning environment, along with a few modifications in content, presentation and delivery. One major advantage of moving away from ILT to recordings implies reusability for new participants and relearning of specific concepts for existing participants. In the last

*Asst. Prof. , Vidyalankar Institute of Technology, Mumbai; India

couple of years, a number of web-based educational packages have been developed and deployed by many universities all around the world. The most popular ones include: Lotus Learning space, WebCT, Topclass, etc. which have features like student management tools, administrative tools and collaborative tools. Detailed comparison of various web-based educational environments are given in [2,3].

Currently Industry is spending billions of dollars for education and training. Why, unless they expect this training to increase quality performances, quality products, and more efficient and effective performance on the part of their employees? [4]. In this paper we have explored a recordings based learning model for training verification and validation course in a corporate environment and explained how this model can prove to be useful for enhancing learning in today's ICT based teaching learning environment. The basic idea is to pick up advantages and overcome limitations of ILT (Instructor Led Training) and WBT (Web Based Training) environments.

The paper is organized as follows: section 2 put forth the major differences between ICT and traditional learning environment. In section 3 we explain the recordings based Learning model followed by its implementation in the next section. The overall feedback is briefly discussed in section 5. Finally we end the paper with concluding remarks.

2. ICT VERSUS TRADITIONAL LEARNING

The increasing presence of technology in education has resulted in adoption of ICT based techniques and is contributing to an examination of current practices in administration, teaching, and learning. This had led to flexible learning, and it is seen as a direct consequence of the ways that information technologies are changing education [4]. The infrastructure used for ICT based learning environment provides higher efficiencies through the use of computer, networking, and telecommunications technologies. E-learning is

the use of ICT to provide a broad array of solutions to enhance knowledge, varying from fully on-line learning to mixed models, the so called blended learning. The latter uses a combination of e-learning media interspersed with instructor led sessions. Some general benefits of e-learning include low costs- no special hardware requirement, anytime and anywhere access and the contents can be customized to different learning needs. Today there are many virtual universities that provide distance university degrees across the world.

The educational technologies continue to be used as information delivery machines but our objective is not to replace the teacher. The teacher plays a major role on intellectual engagement, participation or progress of individual students. A brief on advantages of instructor led sessions: Most deliveries happen using the chalk and board. Working on a chalkboard supports creative thinking, illustration, and sharing. Board drawings can be used to draw attention to details using circles, arrows, underlines, checks, groupings, etc. Instructors keep pace with the learning ability of the class, their interest levels can also create interest in the subject by diverting away for a few moments if required. The instructor can stimulate the class by asking many questions for either recapping or direct the questions towards understanding of new topics. Students on the other hand are focused on the topic because of the instructor's presence.

But we cannot forget that this teaching is instructor dependent. All instructors may not present the concepts and deliver in the same manner. Secondly this technique does not allow reusability of the training material. You need to be in the classroom every time the session is held and you need to draw the same diagrams / points if you go to the class after a gap. With extensive information being available on the Internet, it is worth exploring the idea of lecture recordings and reusing the available content. The success of computer-based recording of live presentations depends on their acceptance

by the end-users working with the materials [6]. Nevertheless we have found that in case of unavailability of trainer, these recordings prove very useful for self training. They are also ideal for the long distance learner, those at onsite who can study according to personal needs and instructional schedule [7, 8, 9].

The advantages of elearning over traditional classroom environments include the ability of the student to access content ("course material") at any time (asynchronously) and from anywhere (not having to be present at a specific location). The technology advances today make it possible for learners to also engage in synchronous (real-time) events (e.g., classes, broadcasts, webinars). Based on the pros and cons of instructor led sessions and web based trainings we have designed a recordings based learning model.

3. RECORDINGS BASED LEARNING MODEL

The Recording based model comprises of two important components: content repository and the instructor as shown in the figure 1 below. The major role of content repository is to store recordings and make it accessible to the students attending the sessions. These can be recorded using Snagit- freely available recording software from Techsmith website or others which are paid like Camstasia, Centra-Saba etc. The instructor is responsible for intermittent discussion (with probing questions) and query resolution.
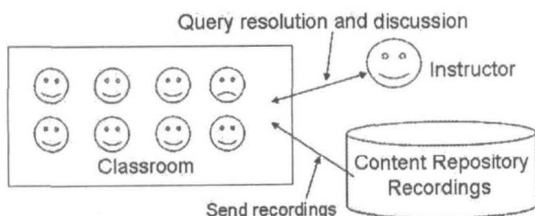
We have used Snagit for developing recordings. Snagit is a freely downloadable recording tool available on the internet. It provides features similar to Centra for recording. It has features like edit, enhance, save, and use capture mode for numerous tasks. A typical Snagit screenshot is shown in figure 2 below.

1. Capture Profiles - is a fast and powerful way to configure what you want to capture.

2. All the capture settings - make up one Profile.

3. Capture Button - performs the capture.

4. Edit Tab - gives access to companion editing applications and tools such as SnagIt Editor, SnagIt Studio, and Batch Conversion Wizard.

5. The Organize Tab - gives access to companion applications used to organize your captures, such as Catalog Browser, Web Page Creator, and SnagIt Printer Capture. Both these tools convert the recording to avi format which can be stored on a repository server.
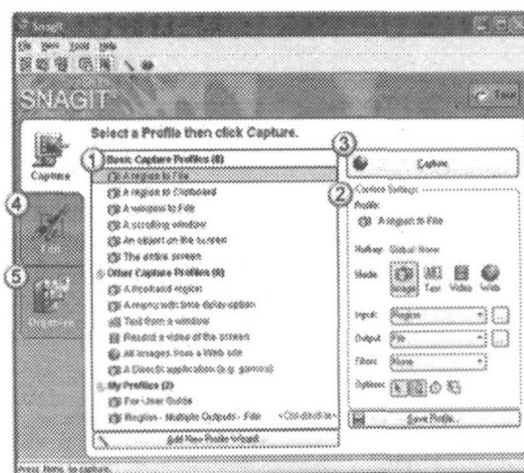

Fig. 1: Recordings based model

Fig. 2: Snagit screenshot

We have been using this tool for capturing recordings and reusing them in our corporate training environment.

4. MODEL IMPLEMENTATION

We have conducted entry level SAP Security training for our Enterprise Applications software engineers using the recordings based model. This department caters to implementation, enhancements, maintenance based projects of customer organizations. SAP security in an integral application level security governed by SOX compliance. This ten days course is divided into five major topics namely: Overview of SAP, Basic concepts of security, authorizations, basic transaction codes for controlling authorizations, user level security, transports etc.

We have developed recordings for all these sessions. The classroom delivery is as follows. First the classroom hardware and software requirements are checked. Training nominations are received from the Resource Manager for the training and then the training commences. First the students are given an overview of the entire 10 day SAP Security program. Then the session plan and recordings are shared with them. As per the session plan the students undergo the recorded sessions-which basically focus on theoretical concepts followed by screenshots of system navigation.

As per the session plan, the trainees go through the recording in parts (60 minutes at a time) with discussion time in between with the instructor. At the end of the recording there is an additional 45minutes -1 hour query resolution session. Subsequently the students carry our hands on practice (transaction codes -navigation) for about 2-3 hours. Once one topic theory (recording +query resolution) and hands on practice is conducted, at the end of the day a quiz is conducted. During the last three days of the training trainees practice ticket resolution followed by a mini project. On the last day of the training there is module end test for both theory and lab, along with mini project

presentation. The trainees need to be on their toes on a daily basis, thus ensuring thoroughness in the training. This rigorous training plan is useful in building SAP Security competency ability among fresh software engineers.

5. ANALYSIS OF OBSERVATIONS

While conducting the sessions using recordings, the instructor spent very little time in the classroom actually delivering the session. A major chunk of the instructor's time was spent in resolving queries of the trainees after they went through the recordings. Oral feedback was encouraged on a daily basis. During casual discussions with the students in the tea break and lunch time, the instructor gauged the following information:

❖ Content in the recording

❖ Quality of recordings

❖ How it helped in understanding the concepts at their own pace

❖ Value addition in learning due to increase in discussion and query resolution time

❖ Any scope for improvement

Based on the feedback gathered periodically from the trainees, it was gauged that recordings are good to learn simple definitions and concepts. They are not very useful to clarify complex concepts. Throughout the query resolution sessions the trainees were very vocal and willing to ask questions. Recordings helped them to go as per their pace of learning. They were also useful in revising the concepts at the end of the day. The discussions helped the trainees to revise and understand the topic in the right perspective.

The final feedback was taken at the end of the training and it was found to be very encouraging. Recordings do not completely replace the instructor but reduces the classroom instruction time since part of the

learning burden is passed to the trainee. The instructor now spends more time in the classroom, not explaining word to word what is given on the slide but in probing and asking deeper questions. An additional important point emerged was that trainees were more confident while attempting the daily quizzes and scored well above average as compared to pure instructor led batches. The instructor delivery now moved from pure delivery of concepts to directing the students towards understanding the concepts on their own.

The student's performance was compared with those who have attended instructor led sessions earlier. It was found that those who went through recordings had more technical depth, could think deeper into the topic and were able to answer more questions. Similar comments were received from the Department teams who interviewed them. The team leads and project managers where the trainees were deployed also gave positive feedback. They found the trainees to be more independent, confident as compared to their earlier counterparts. The seniors from the project could allocate them higher responsibilities. The overall feedback indicates that the use of recordings definitely improves the learning curve of the students.

6. CONCLUSION

With recent advances in technology use of Recordings, Virtual Classrooms, CBTs and WBTs are on the rise. They differ greatly from typical traditional classrooms in terms of content and delivery. In this paper we have discussed the ICT environment and how it differs from the traditional teaching. Next we have described Snagit, a freely downloadable video recording tool and discussed how it can be used to record lectures. With a sample case study and trainee's feedback we have demonstrated the positive impact of using lecture recordings and thus enhancing learning in today's ICT based teaching learning environment. Based on the feedback received we propose to use recordings for various other courses for conducting corporate training. Also the recordings based model can be used in any engineering institute to provide any time anywhere learning to the students beyond the classroom.

REFERENCES

1. Pedro Hemhdez-Ramos, David Alexander, Alex Belous, and John Behrens; Changing the Way We Learn: How Cisco Systems is Doing It; 2000 IEEE

2. Comparison of Online Course Delivery Software Products, Centre for Instructional Technology, Marshall University,

3. Review of leading asynchronous; Web based course delivery tools, University of Tennessee,

4. M. David Merrill, Does Your Instruction Rate 5 Stars? 2000 IEEE

5. Nunnan, T, "Flexible Delivery - What is it and Why is it a part of the current educational debate?', HERDSA Annual Conference Different approaches: Theory and Practice in Higher Education, Perth, WA, 8-12, July 1996.

6. Tobias Lauer, Rainer Müller, Stephan Trahasch; Learning with Lecture Recordings: Key Issues for End-Users; Proceedings of the IEEE International Conference on Advanced Learning Technologies (ICALT'04)

7. Richard E. Mayer and Roxana Moreno, "Animation as an Aid to Multimedia Learning", Educational Psychology Review, Vol. 14, No. 1, March 2002, Plenum Publishing Corporation, 2002, pp.87-99

8. Nian-Shing Chen, Yeuh-Chun Shih; Stream based Lecturing system and its Instructional Design; IEEE 2001.

9. Nebolsky, Nicholas K. Yee, Valery A. Petrushin, Anatole V. Gershman; Using Virtual Worlds for Corporate Training Charles Proceedings of the The 3rd IEEE International Conference on Advanced Learning Technologies (ICALT'03)

❖ ❖ ❖