Research Paper Engineering

VIRTUAL CLASS ROOM USING MOBILE AD-HOC NETWORK

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ABSTRACT

This project mainly enhances the features of a Study class room into a Network ,which enables student to see Teacher's board and even see and hear teacher's voice on the respective devices connected in the network. And also enables both teacher and students to perform various exercises which generally are performed in a physical classroom. Additionally, students are provided with an electronic schoolbag which contains electronic books, a notebook, a parents' contact book, a pencil case, writing materials, sheets, a calculator, an address book, and other items. Taking lessons in a lively and new learning environment, it is expected that students will improve their learning performance with perhaps less attendance in a physical classroom and they gain the flexibility of being able to learn at their own convenience.

Keywords : Ad Hoc classroom; eSchoolbag; Handheld; Mobile classroom

I. INTRODUCTION:

E-Learning can be defined an approach to facilitate and enhance learning by means of personal computers, CD-ROMs, and the Internet. It may be as simple as that teacher may simply post their material on Internet; students can read it online or can download it for further access.

The growing popularity of E-Learning has introduced new terms to education, as Virtual Classroom, where student will be present with his professor and fellow learners in a classroom. They will not be present physically in the classroom but connected to the classroom via Internet. Virtual classroom aims to simulate the experience of attending a class over the web. So everyone is able to see other participant virtually. Group learning can be categorized into two types, distance learning and face-to-face learning. Distance learning provides learners with more learning opportunities whereas face-to-face learning provides learners with extensive interaction. The development of short-range wireless technologies provides a group of face- to-face learners with the power of high transmission rate, high mobility and flexibility, enabling them to interact with each other and access teaching material in an indoor or outdoor environment. Mobility has added a brand new dimension to learning technology. The 21st century offers an era of explosive growth of information and exploring the possibility of combining mobility within a learning environment to provide an 'anytime' and 'anywhere' environment is crucial. Using wireless technologies, students can communicate interactively with classmates or the teacher, access rich informational contents from Internet, search for knowledge using keyword, and participate in activity at anytime, wherever they are. Wireless equipment can be used to construct a mobile learning environment that may improve performance over that obtained by traditional learning and create new learning activities or models for active learning.

II. SCOPE AND NEED FOR SYSTEM:

Virtual Classroom is currently usable, it can be improved in many dimensions. As stated in proposed system's scope, the session will have facility of using real time audio. But since we couldn't do it, this part could be done in future.

For using the system, users must be trained properly. For that a user manual for the system need be prepared, which will guide the user. Since it is not prepared, it can be done in future.

Also, as we have seen many others virtual classroom has functionalities for session recording, breakout rooms, etc. But, we haven't given such facilities in our classroom. These functionalities can be considered as a further work to be done for our classroom.

III. WORKING OF PROJECT:

This work presents the concept of mobile learning and the design of an Ad Hoc and mobile classroom. Mobile learning activities can be suited to an indoor or outdoor environment. Also, either a single learner or a group of learners can participate in the learning activity.

The Ad Hoc and mobile classroom system and the eSchoolbag system were designed and implemented to

construct a ubiquitous learning environment. The eSchoolbag system offers students with wireless access to electronic books, knowledge, and teaching material and offer learners mobility and multiple interactive opportunities. Through the use of the eSchoolbag system, students can download or upload their homework, teacher's announcements, or do exercises, anytime and anywhere.

Four classes of mobile learning:

Mobile learning has three essential elements: the mobile learning device; the communication infrastructure and a learning activity model. The mobile learning device could be a PDA, a WebPad, a Tablet PC, a notebook, or some specifically designed device. Here, the word 'mobile' in mobile learning device describes a device that is small, light, easy to carry, personal (belonging to the user) and equipped with wireless communication capability. The communication infrastructure provides the mobile learning device accessibility to relevant learning material and/or communicating with other learners, using access points, base stations, the GPRS (General Packet Radio Service) network, and other relevant technologies. Mobile learning activities can take place indoors or outdoors with either a single learner or a group of learners. Therefore, mobile learning can be categorised in four classes: Mobile Indoor Individual Learning; Mobile Outdoor Individual Learning; Mobile Indoor Group Learning and Mobile Outdoor Group Learning.

IV. SYSTEM IMPLEMENTATION:

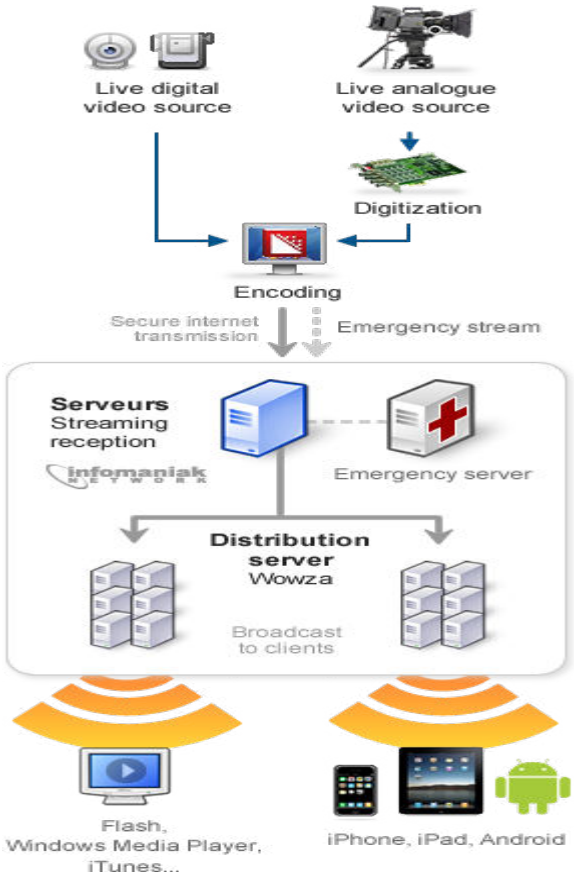

Fig. : System for Virtual Classroom

V. SYSTEM FEATURE:

- Lecture storage for future use: All the lectures of the instructor are automatically saved on the server so that a student can access it later if he missed the lecture. These lectures are accessible through a web browser.

- Real Time Collaborative Drawing: He can also invite other instructors to teach a particular lecture with him.

VI. PROJECT SCOPE:

System can used by mobile operators to use watching and giving seminar, attending meetings etc.

VII. CONCLUSION:

As given in system specification, we have implemented most of the functionalities of the proposed virtual classroom. Our virtual classroom will be used for conducting web seminars. It has mainly two users, presenter and participant. A presenter will conduct a session for participants, which will attend the session from anywhere in the world.

VIII. ACKNOWLEDGEMENT:

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