Special Session: Exploring Learning Opportunities in Engineering Education Using 2D, 3D and Immersive Video Augmented Online Technologies

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***Abstract*—The goal of this session is to provide engineering educators an opportunity to compare the strengths and limitations in regards to 2D, 3D and immersive video augmented collaborative online learning environments. Participants will also gain valuable hands on experience to provide confidence in using such technologies. This session is targeted to those in the engineering education community that have previously explored the use of more traditional 2D online learning environments (such as Skype, Google Hangouts and Adobe Connect) and are interested in learning more about the possibilities provided by 3D collaborative technologies. At completion participants will have gained a range of practical ideas to implement, with a clearer picture of the opportunities and limitations of emerging 3D immersive online learning tools. While such technologies are not new, there is evidence that more can be done to promote increased usage within engineering education, especially for bringing industry into the classroom. This session aims to help inspire and create debate on the value of incorporating such technologies into the engineering classroom.**

Keywords—Adobe Connect; iSee; Second Life; Online Colloboration; Virtual Worlds

I. Introduction

Many educators are well aware of the existence and possibilities provided by online collaborative technologies. For many however, the available time to download, install, familiarize, test and troubleshoot with heavy workloads limits the opportunities to explore and brain storm how such technologies can be integrated with learning. The advantage of online collaborative technologies is that it removes logistical barriers allowing people to interact irrespective of location, distance and cost of travel. As a result, educators have been exploring the benefits of bringing industry virtually into the classroom [1]; conducting webinars, presentations and team meetings [2, 3]; and linking students and teaching staff across campuses across the nation and globe [4-6]. As with all technology, each approach has a number of advantages and limitations. In this special session we will introduce participants to three different technologies used in education based on 2D (Adobe Connect), 3D (Second Life) and immersive video augmented (iSee) technologies. We will discuss a number of case studies on how each of the technologies can be used in the classroom, engage in brainstorming, and provide an opportunity for hands on practice.

II. Description

Topics include an understanding of the technical aspects of each of the technologies including the strengths, weakness and limitations in regards to learning. A variety of examples of educational implementation will be discussed. After introducing the three technologies Adobe Connect, Second Life and iSee, participants will work in groups to generate ideas as to how these technologies can be incorporated into their teaching. The goal of this discussion is that it will generate new ideas, scenarios and debate as to the effectiveness of such an implementation. The final stage involves the participants using the three different technologies and becoming familiar in the way they function. At the completion of the session participants will have an understanding of how each of the technologies can be used in different engineering education scenarios. They will have gained some ideas for implementation in their classroom and some confidence in use.

III. Preparation

At the minimum participants will be able to observe the use of technology in groups or from the presenters. To obtain maximum value from the session, participants are requested to bring a PC or MAC using Wi-Fi or internet access by tethering to a 4G mobile device. Access to Adobe Connect will be via a web link provided during the special session. A link to access iSee will also be presented in the session, however, participants are requested to download and install the program before the start of the session from http://www.isee-meetings.com/

IV. Session Agenda

Table I shows the agenda for the special session.

Time (Minutes)	Activity
5	Participant and presenter introductions
20	Introduction to different 2D and 3D learning environments
15	Group brainstorming on how such technologies can be incorporated into their teaching
10	Discussion of ideas
30	Interactive activity: Hands on use using Adobe Connect, Second Life and iSee

V. Outcomes and Future Moves

It is expected that participants will have gained familiarity with the three different technologies and the brain storming activities will generate a number of case study ideas to implement at their institution.

References

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