The need for a virtual classroom in which the professor and students can discuss and interact in real time is a paramount consideration regarding the future of online learning. The pervasive nature of online coursework has exposed deficiencies in monitoring the integrity of the student work and maintaining a student to instructor connection similar to live classes. The purpose of this project is to address these deficiencies by developing, Viro, a more realistic virtual classroom. Viro is designed to address the most common deficiencies cited by educators and students in past studies of currently available online education platforms: identification, work sharing, timely communication, and customization. Viro will provide authenticated attendance using identification provided by a school’s current authentication and authorization systems, application and screen sharing, where the professor or student may share their computer screens in order to provide examples or receive immediate feedback, group and individual messaging that allows the professor to address questions to an individual or the entire class, and a development platform allowing customization of the Viro to meet an instructor’s requirements. With an emphasis on education, the Viro’s design incorporates images and graphics that are commonly associated with learning, such as binders, folders, and bulletin boards, creating a familiar interface that mimics classroom and study environments. These aesthetics not only contribute to Viro’s design, but also play a part in it being easily understandable by a large number of users. The arrangements of its different components work in line with its pages’ aesthetics to progress towards a future of ideal online education. After a functional prototype of Viro is created, testing by larger numbers of students and educators will commence in phases.

Methods

1. We chose to take a “form before function” approach, emphasizing student usability with a minimal learning curve.
2. The User Interface is independent of the videoconferencing technology.
3. We decided to focus on 4 main areas:
   a. Visual Identification of students
   b. Application and Desktop sharing
   c. Real-time feedback and communication
   d. Simple Programming framework that encourages customization
4. BigBlueButton, a freeware videoconferencing solution, was used to prototype the capabilities of the User Interfaces

Future Direction

This research has provided a software prototype for the project and insight into the best practices of current and developing technologies used in online courses. The software prototype will serve as a beta test model for Phase 2. Phase 2 will apply the prototype in a best test format to collect data that will be compared to an analogous class of similar content. Additional features and refinements will be made to better meet the needs of professors, students, and schools. This project will continue to move forward by finalizing the interfaces and establishing funding relationships with other organizations, i.e. Luminar Foundation, National Science Foundation, etc.

Abstract

The need for a virtual classroom in which the professor and students can discuss and interact in real time is a paramount consideration regarding the future of online learning. The pervasive nature of online coursework has exposed deficiencies in monitoring the integrity of the student work and maintaining a student to instructor connection similar to live classes. The purpose of this project is to address these deficiencies by developing, Viro, a more realistic virtual classroom. Viro is designed to address the most common deficiencies cited by educators and students in past studies of currently available online education platforms: identification, work sharing, timely communication, and customization. Viro will provide authenticated attendance using identification provided by a school’s current authentication and authorization systems, application and screen sharing, where the professor or student may share their computer screens in order to provide examples or receive immediate feedback, group and individual messaging that allows the professor to address questions to an individual or the entire class, and a development platform allowing customization of the Viro to meet an instructor’s requirements. With an emphasis on education, the Viro’s design incorporates images and graphics that are commonly associated with learning, such as binders, folders, and bulletin boards, creating a familiar interface that mimics classroom and study environments. These aesthetics not only contribute to Viro’s design, but also play a part in it being easily understandable by a large number of users. The arrangements of its different components work in line with its pages’ aesthetics to progress towards a future of ideal online education. After a functional prototype of Viro is created, testing by larger numbers of students and educators will commence in phases.

Screen Prototypes

Figure 1: Student Group Work Screen

Figure 2: Student Lecture Screen

Figure 3: Professor Group Work Screen

References

3. Tarver, Mark. The Decline and Fall of the British University. 2007.
5. ABET. ABET (Online) 2012. [Cited: October 25, 2011.] http://www.abet.org/
7. Reeves, Thomas. Do generational differences matter in instruc-
tional design? 2006.