Virtual Classroom

Concept of Operations

COP 4331C, Fall, 2015

Modification History

Version	Date	Who	Comment
V 0.0	09/8/2015	J. Bender	Initial Draft
V 0.1	09/10/2015	J. Casserino	Rough Draft
V 0.2	09/14/2015	J. Casserino	Updated Rough Draft (added email address and scenarios)
V 1.0	09/18/2015	J. Casserino	Corrected Small Grammar Errors

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The Current System

The current system that will be used as a starting point is Canvas by Instructure. This system is already used in many schools, including University of Central Florida; and provides many features that are required for a classroom environment. Canvas is a versatile and customizable system that allows for ease of collaboration between students and instructors. An electric gradebook, assignment database, discussion board and an announcement section are just a few features that Canvas currently offers.

The Proposed System

Needs

While the current system offers many features that improve the teaching/learning experience, it's in this group's opinion that some features can be enhanced or even added to enrich the experience even more. Those features are:

- An improved discussion section that allows for live chat

- An interactive notebook for students

- A live student-to-professor feedback option

- Real time interactive polling

- A live video feed of the professor's lectures or interactive slides with audio to follow along with the professor during lecture

Users and Modes of Operation

The Virtual Classroom App will have three user types:

Admin – This user will have full control over the system and have access to all features. This is the only user that will be able to create a profile or course. Admin's are also the users that will assign other profiles to their perspective type and course(s).

Instructor – This user will have full control of the course that it has been assigned to. Instructors will create the polls, assignments and files. They will also control what students are able to access within the classroom.

Students – This user will be able to interact with assignments, documents, and other media files that the Instructor user has granted them access to. Students will be able to create discussion posts, upload assignment files, and interact with polls.

Operational Scenarios

Operational uses would include those by the Instructor and the Student. The Instructor would be able to upload files to their course. The Instructor would first log into the system using their predetermined user name and password. Once the Instructor has logged into the system they would select the desired course from their current course list. Once in the desired course the Instructor would select the upload files tab and upload the desired file onto the course. Before the file is uploaded, the Instructor must select the restrictions for that file. Once the file is uploaded, the Instructor can either continue to upload files by following the same steps as before or perform another action. Once the Instructor is done performing all the desired actions they must log off by clicking the log off button.

A Student user would have the ability to access course files. The Student would first log into the system using their predetermined user name and password. Once the Student has logged into the system they would select the desired course from their current course list. Inside that course the Student will select the files tab. Within that tab the Student can select the desired file to download. After the download is complete the Student can either continue to download files or perform another action. Once the Student is done performing all the desired actions they must log off by clicking the log off button.

Instructor users could create an interactive poll and multiple Student users could

participate using that poll. All users must first log into the system and select the course that the

poll will be active in. The Instructor must first select the poll tab, and then select the options for

that poll (i.e. how many choices are offered, what choices are available). Once the Instructor has

set up the options of the poll, they must then select the active option to make it available to the

Student users enrolled in that course. The Student users must then click on the polls tab and can

choose one of the options. As long as the poll is active, the Student can make changes to the

options; but once the poll is closed the last option picked by the Student will be assigned to the

poll. Instructors will have a live interactive viewing of the poll option percentages while the poll

is active. Once closed, the poll option percentages will be locked and saved. During the lecture

an Instructor can have a poll running so that they can see if the students in class understand the

material (i.e. the poll asks if the students understand the material, the instructor can watch the

feed to see if it would be wise to move on to the next subject).

An atypical scenario that could occur is if users try to log into the Virtual Classroom App

but the connection to the database is down. Students or Instructors try to log into the system but

can't gain access because the database isn't responding or is down. An Admin would need to log

in to the database directly and check the system to see if the problem can be solved quickly. If

so, the Admin should fix the problem immediately. If not, then the Admin should inform all

users that the app will be down for a set period of time. Once the error is remedied the Admin

should email all users that the problem was repaired.

Operational Features

Must haves (in order of priority):

- Creating user accounts and profiles

- Creating course(s)

- Enrolling users in course(s)

- Users being able to log in

- Users being able to upload/access course files (within profile limits)

- Privacy of grading, and personal data

- Data validation, stream

- Instructor being able to make/grade assignments

- Course discussion section

- Instructor being able to create an interactive poll

- Data validation, stream

- Students being able to create an interactive notebook (Private and Public)

Would like to have (in order of priority):

- Live lecture video feed

- Interactive lecture slides (with Audio from Instructor)

- Audio Channel

Expected Impacts

When all the projected features are available, the Virtual Classroom App will be able to improve the learning process for both the instructors and students. It would greatly increase the interaction between students and instructors, as well as increase remote accessibility. With the lectures being available at any time from any place, a student will be able to watch lectures numerous times. If students are having a hard time understanding the material, they can re-watch the material, which in return will place less a burden on an instructor by reducing the number of office hours required and/or reduce the number of students approaching the instructor to help

with material that has been covered previously. The app will also encourage the student to be

more involved in the class because it will help to remove a large distraction in the lecture-the cell

phone. With the students using the app during class they will be unlikely to use the phone for

other apps during the lecture. By decreasing the distraction of mobile phones in lectures and

increasing the availability of information after lectures, this app will improve the quality of

learning throughout the course.

Analysis

Expected Improvements:

- Increase in availability of information pre/post lecture

- Increase in communication between students/instructors

- Increase in communication between students/students

- Decrease in distractions during lecture for mobile phones

- Decrease in hurt of a student missing a lecture

- Ease of usability of non-tech savvy instructors

Disadvantages :

- Increase in demand on technology

- Distractions from external mobile app notifications

- Increase in battery life consumption for mobile phones

- Compatibility issues with various mobile phones

- Only available for iPhones

- Increase on demand for bandwidth

- A possible decrease in attendance of students

Limitations:

- Only available for iOs

- Database size

- Bandwidth available in classrooms

Risks:

- Data loss from the database (course gradebook)

- Failure of live polls during lecture

Alternatives and tradeoffs:

- Canvas (current system, lacking key features)

- Blackboard (lacking basic features, very limited)