Communication and Collaboration in an Online Masters Degree

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Abstract

Communicating with students and encouraging collaboration poses a major challenge in distance education. In this paper, the authors present lessons learned from an online master's degree program; each had successfully developed courses to teach engineers and managers project management at a distance. The first section introduces online learning and illustrates the tools and interactive technologies used to communicate with students. The second half describes the design and execution of three online project management courses, detailing the curricula and techniques utilized to encourage collaboration and discussions amongst students. We also include a special section that illustrates teaching project management through case studies. In each case, we describe the pedagogical approach and curriculum used to encourage collaboration and create an effective learning environment. The paper concludes with a narration of the challenges that remain when teaching online. The research results and experience shared in this paper will provide invaluable assistance to faculty and course designers interested in creating an online course.

1. Introduction

Before we describe our experience with communication and collaboration tools let us survey research work and books in this field. Drawing from a range of disciplines, a popular book, *Communication and Collaboration in the Online Classroom: Examples and Applications* analyzes experiences in collaboration and interactive technologies [1]. Choose technologies for distance learning course and online discussions is found at several sites on the internet such as [2], [3] and [4]. However, the best resource for finding key tools for finding the top one hundred tools for learning online is: http://www.c4lpt.co.uk/recommended/. [6]. The authors have used several of them for communication and collaboration successfully.

2. Online Education

In many colleges, classroom teaching is now supplemented with web based instruction.Today, online education, even if not formally adopted by colleges and universities, is certainly an education channel that has been discussed and debated in faculty meetings and considered seriously from a business perspective at university board rooms. Several resources are available today that introduce distance education. Moore and Kearsley provide a systems overview of Distance Education in their textbook [7]. Simonson has described the world of online education in a book now in the third edition, Teaching and Learning at a Distance: Foundations of Distance Education [8]. Others provide a wider landscape view of this discipline ranging from technology to legal [9]-[11].

Next let us introduce online education at Boston University. Located along the Charles River in the heart of Boston, Boston University (BU) is the fourth largest private university in the USA. The institution

offers more than ten fully online degree programs and ten online graduate certificates in a variety of disciplines. The MS in Project Management is one of the largest academically reputed online masters degree program at Boston University. The program is comprised of more than three hundred students spanning across the globe. Success to a significant degree, relies upon competent core full-time faculty, highly qualified students, dedicated support staff, user-friendly learning management systems, and relevant communication and collaboration tools.

The Figure 1: Framework for Education illustrates online education and its various options. The framework essentially consists of four variables—*Time*, *Place*, *Any* and *Same*, and their permutation and combinations – *Same Time Same Place*, *Same Place Any Time*, *Any Place Same Time* and *Any Place Any Time*.

The first quadrant "Same Time, Same Place" deals with traditional face to face teaching. Many schools now use tools like Blackboard, Vista or Noodle to hold classroom content including media files for students. Such tools have helped instructors teach courses effectively. This is a *synchronous model* of teaching. Today online Learning Management Systems (LMS) and online communication and collaboration tools have been integrated into the world of face to face teaching.

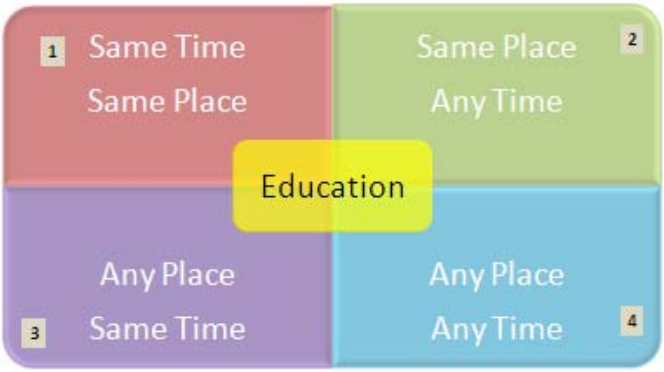

Figure 1: Framework for Education

The second quadrant in Figure One is "Same Place, Any Time". A good way to illustrate this mode of education is to note several examples. A language lab, or a lab with computers and specialized software providing self-paced tutorials, fits this model. Student who are online have to visit Boston University periodically to use the computers in the labs.

The third quadrant in Figure One contains "Any Place, Same Time". At Boston University, the Blended Model of delivery fits this quadrant as an example. The professor organizes live sessions at a fixed time (example: Saturday 1 to 4 PM). Students can be anywhere watching the lectures.

Finally, the last quadrant is "Any Place Any Time". This is the most common model for online course delivery world wide. Our research paper primarily discusses this mode of delivery as the majority of our online delivery pertains to the quadrant four. There are no requirements to participate in "same time" synchronous sessions. There are no requirements to visit Boston University. Students take final exams in a protored center to guarantee integrity of the online course.

3. Instructional Technology

Today a plethora of tools are available to instructors, and the appropriate tools save students and professors time and effort while teaching an online class. The Masters in Project Management program uses Vista as the Learning Management System (LMS) a product of Blackboard Corporation [12]. This LMS allows faculty, with the support of our distance education department to post content, design tests, hold online discussion and many other course-related functions. Key product features include: course administration, online content storage, assignment and assessments repository, tracking and reporting student performance.

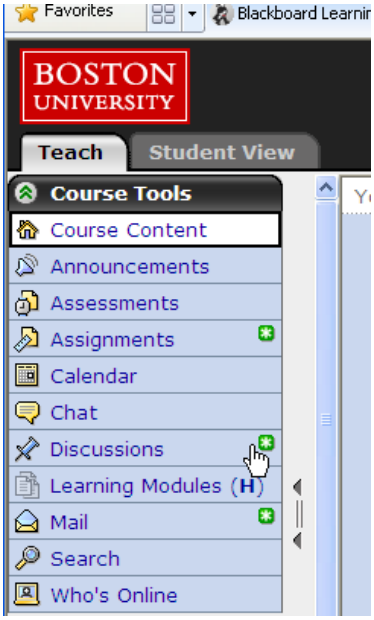

Figure 2: Vista learning management system.

See *Figure 2: Vista Learning Mangement system* for a snap shot of the main panel that students can see. The students see the above view. Student teams and professors also have the ability to communicate via WIMBA which is communication and collboration tool licensed separately but seamlessly integrated with Vista. Wimba communication and collaboration tools are integrated into the Blackboard Vista course management system seamlessly. We have used other tools such as Met-Meet (customized by Boston University from Dim-Dim Open Source software and GotoMeeting [13]. See the *Figure 3: Live Meetings* using Wimba for a visual snapshot of a project management live meeting. Such sessions are recorded because only 10% of the students can attend the live lectures.

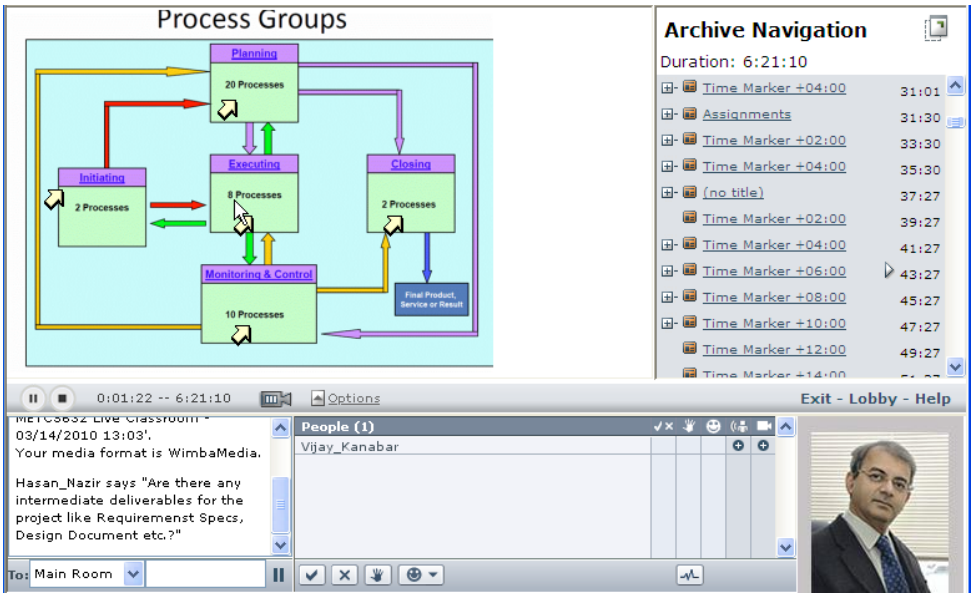

Figure 3: Live Meetings using Wimba

Next, we see a snapshot of discussions occurring in a project management class in Figure3. It is a user-friendly interface with various options for threaded or unthreaded discussions. The pedagogy is discussed in the next module under the topic of grading and rubric.

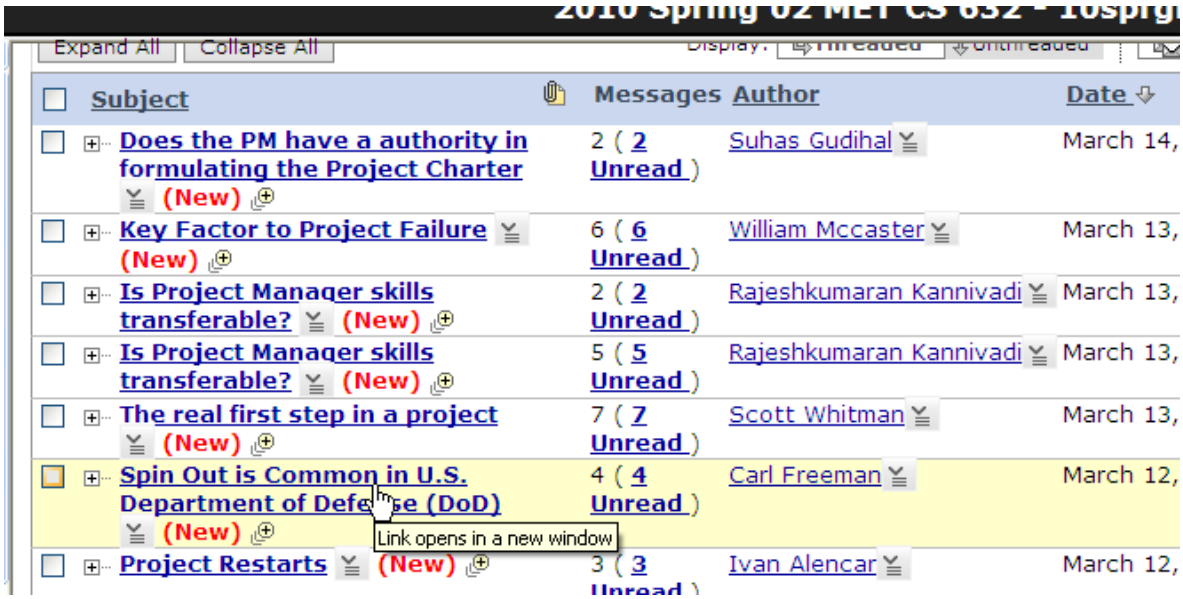

Figure 4: Discussions in an Online Course

A recent addition is Pronto for communications. Pronto is an instant messaging platform designed to bring informal communication and collaboration settings online. Students use it to communicate and collaborate at a distance. See Figure 5: Pronto for Team Communication and Collaboration.

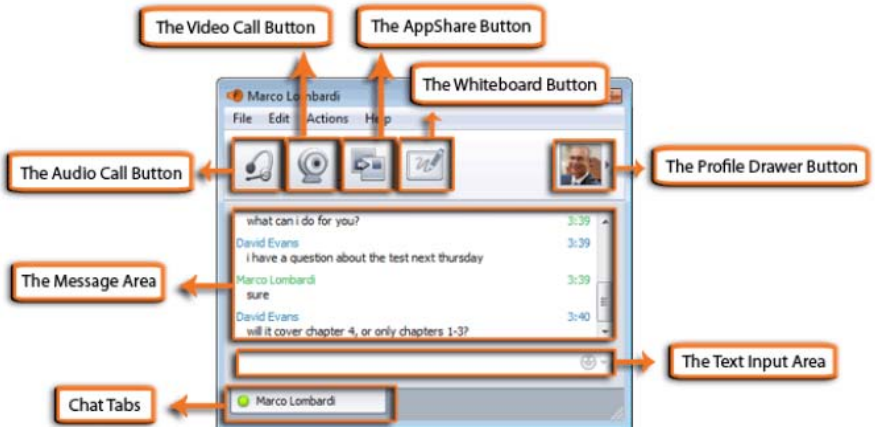

Figure 5: Detailed Pronto Interface (©Pronto 2010 – User Manual).

Features include: Audio Calling, Video Calling, Whiteboard, Application Sharing and Office Hours.

Students and professors are comfortable using chat features and audio calling. But the following three advanced features are valuable: Whiteboard for discussions and collaboration, Application Sharing for real-time display of any document or application on either the student's computer or professor's computer, and Video calling with blended audio and video for face-to-face contact and more natural communication.

Simplicity is the key for a lot of tools and techniques. Even experienced students and professors are often intimidated by the communication tools. Students new to online education especially are very vulnerable and many might be still be confused by something as basic as chatting in the course.

4. **Communication and Grading Rubrics**

Communication in an on-line course provides many challenges to the course designer/instructor. One of the biggest challenges is how do we grade the communication effort in the course by students? We believe a good rubric is the key. Class discussions in an on-line environment, that employ clear grading rubrics will add to the quality of student contribution. Simply employing the rubric is not sufficient; we also need to closely monitor the grading results and student evaluations.

Students receive a syllabus which contains the grading distribution pertaining to Discussion Assignments. In most of our courses they are generally about 20% of the course weight. Note that such an Evaluation Rubric can be provided for those elements of the course that are qualitative in nature such as the Discussion Assignments. Other elements such as multiple choices, True False questioning methods are graded on a points earned basis and this does not require any rubric.

In the Figure 6 we illustrate the initial discussion grading rubric. Note there is a rebuttal grading rubric as well which is similar but uses different submission length and frequency. After repeated use by several faculty members we can conclude that due to the rubric student communication is cognitively deep, embedded with peer references, and indicative of a student oriented environment. Moreover, students were using high level cognitive skills such as inferencing and judgment as well as meta-cognitive strategies related to reflecting on experience and self-awareness.

Discussion Grading Rubric

Initial Submission

Criteria	Grades
Submission is approximately 250 words. Writing skills are excellent. Submission on/before day three. Arguments are logical and well thought out. Several other sources cited. Submission poses challenge to classmates for rebuttal.	90-100 points
Submission is approximately 150 words. Writing skills are adequate. Submission on/before day five. Arguments are adequate. One other source cited. Submission poses little challenge to classmates for rebuttal.	80-89 points
Submission is approximately 150 words. Writing skills are adequate. Submission on/before day seven. Arguments are few, but adequate. No other source cited. Submission is too late to allow for classmates' rebuttal.	70 – 79 points
Submission is less than 150 words. Writing skills are sub par. Submission is late. Arguments are few and do not support submission. No other source cited. Submission is too late to allow for classmates' rebuttal.	69 or less points

Figure 6: The Grading Rubrics for the Discussion Topic Submissions

5. Evaluations and Student Comments

We have accumulated data for same courses that are offered online and in a face to face setting. We some of the courses we analyzed there was a - 0.41 difference in course rating when compared with face-to-face. The online course has a lower rating, but not unexpected, for several reasons. They are:

a) Large class sizes--Online classes have as many as 230 students. Face to face classes have a maximum of 35 students.

b) The facilitators who manage groups of fifteen students each are not uniformly exceptional. Online students are very dependent on emails and related communication from their facilitators in a timely manner. When this does not happen students are lost and confused and unhappy with the course.

c) Courses are scripted and it is difficult to make changes or remove errors in a timely manner from the course ware. In a face to face setting, this is not a risk. Regardless, online student enrolment in project management has doubled each year since its inception five years ago. Students continue to enroll

because of convenience but more important that many a lot of satisfaction in online courses. Let us see what students have to say about participating in online discussions for instance

> "I couldn't believe that I "talked" so much in the discussions and rebuttal! I usually do the minimum for a passing grade, but there was something in the interaction between the other students and myself that had me writing more than what was expected. I really got into it."
>
> "I thought that the lecture materials, particularly the videos and PowerPoints w/audios, really added to the course …they added variety to reading the lecture materials, and kept it more interesting."
>
> "I thought the lecture content/variety in this course were among the best…"
>
> "The rubrics were great! Finally a grading tool that told us what was required to earn the grade you wanted to shoot for."

A clear advantage that online education has over face to face teaching is that all students have to participate actively in online discussions. They also have to rebut discussions several times. One can never enforce the same in a face to face class with 35 students as it would consume the entire class lecture simply communicating with students.

6. Further Research

An area of key interest is use of case studies in online education. Harvard University, School of Business would not dream of venturing into online education unless they have mastered the tools and techniques to introduce case studies online. The Case Study Method as a problem solving tool in has been a long accepted methodology particularly valuable in teaching such disciplines as law, management and engineering [14]. Mustoe and Croft have described the importance of communicating case studies in Motivating Engineering Students by Using Modern Case Studies, European Journal of Engineering Education [15]. Since historically, the case study method has been primarily used in live classrooms, there is little empirical research on the comparison of the lecture and or case study method with online case study pedagogy. There are, however, several studies that indicate that generally online education is as effective as live classroom teaching. This is a good area for further study and research.

7. Final Paper Conclusions

In conclusion let us ask ourselves the following question – can students learn without ever interacting with a mentor and professor in a face to face setting? The answer lies in substantial body of research and data that suggests that yes it is possible. There are exceptions-- some students don't lend themselves readily to online education, however, many can simply blossom when empowered to work at a distance with the professor as a mentor. Such evidence is available in literature. "Most students are able to cope with problems, and most students actually enjoy taking responsibility for solving their own problems. This is obviously harder work than letting a teacher do it." [7]. A research study by Tucker concluded that while distance education may not be superior to or better than traditional face-to-face education, it is not worse than traditional education. It can be an acceptable alternative because it is just as good as traditional education We strongly underscore that while there are many tools available today to teach and facilitate communications online, two factors will determine successful execution – a) simplicity: selecting simple and user friendly tools and b) providing training and support to faculty, staff and students.

Biography

Dr. Vijay Kanabar is the Director of Project Management programs at Boston University, Metropolitan College and Associate Professor of Computer Science and Administrative Sciences. He has more than 25 years of teaching experience in North America and has been teaching at Boston University for the past 17 years in the departments of Administrative Sciences and Computer Science. He can be reached at kanabar@bu.edu. The co-authors Ginny Greiman and Jim Cormier are also professors in the Administrative Sciences department and teach project management courses primarily. All the three authors can be reached by calling the department at 617-353-3016.

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