

**Online Learning in the Undergraduate Curriculum
2009-10 Pilot Project:
Progress Report - July 1, 2010
Julanna V. Gilbert, Bridget Arend, Kathy Keairns**

I. PROJECT DESCRIPTION

RATIONAL. The primary goal of this project is to explore the efficacy of providing traditional undergraduate students the opportunity to take online courses. Online courses are becoming more common in traditional campus-based colleges and universities, as well as in high schools. In addition, web-based delivery of education is a growing trend for corporate, professional, and graduate education. Hence, those students who have already experienced online learning will be comfortable with this delivery method, while those students who have not had previous experience will be better prepared to continue their education after graduation from DU. Finally, it has been well-demonstrated that there are web-based tools for delivery of all kinds of content and for online communication, both synchronous and asynchronous, that are extraordinarily effective for student learning.

PROFESSIONAL DEVELOPMENT FOR FACULTY. Unfortunately there are a lot of badly-designed online courses available at institutions across the world. Instructors for these courses have usually had little or no training in how to use the online environment for teaching, and tend to simply post content and give exams and assignments with little thought in how to motivate and engage the student learner. To avoid the pitfalls that plague so many online courses, a professional development plan was put in place to prepare the participants in this pilot project for teaching online. The plan was also important because the courses developed during this project will serve as models for future online course development. The professional development began with the CTL's online Distance Learning Workshop. This three-week workshop, which has been offered twice each year since 2005, provides the experience of online learning from the student perspective and leads the participants through a series of activities to help them develop interactive and engaging content for delivery in their own courses. After completing the three-week workshop, the instructors met as a group with the CTL online learning coordinators each week for 5 weeks in face-to-face meetings. Specific discipline-related topics of interest to the instructors were discussed in these weekly meetings, and the CTL staff was available throughout the pilot for individual consultations.

COURSES. Following best practices for effective online courses, enrollments in all of the courses were capped at 15-20 students. Hence, ideal target courses would be those that already have low enrollments and that are taught by instructors who are interested in online delivery. Low enrollment courses would include upper division courses for majors, summer courses, "trailer sections", and first year writing courses. All of the pilot project courses fall in one of these categories.

Thirteen courses have been developed through this effort: four for Winter 2010, one for Spring 2010, and eight for Summer 2010 (although, one summer course was cancelled due to no enrollment). Two of the Winter 2010 courses are being offered for a second time this summer (Summer 2010) giving a total of nine summer courses. Several of these courses had face-to-face components and so were not purely online. For example, in ENGL 2202: Renaissance Poetry and Prose: Digital Archives (Winter

2010), the students met with the instructor every other week in the library for research activities, and in the calculus courses (Winter 2010), students could attend face-to-face office hours and were required to take their exams in a classroom with the course instructor.

A variety of web-based tools were used in these classes including: DU's CourseMedia™ for delivery of video components, Wimba for synchronous communication over the web, Camtasia Relay for creating short video clips that are integrated with computer activities, and of course, Blackboard with all of its online tools (quizzes, gradebook, discussion boards, Wikis, and Blogs).

II. PROJECT IMPLEMENTATION

PHASE 1. Phase 1 of this project began in Fall 2009 with five instructors and courses as listed below. Four of the courses were offered in Winter 2010 and the fifth in Spring 2010. The instructors were selected by asking the deans to identify individuals who were interested in participating. The two AHSS faculty members each received a \$2000 stipend for attending the online course preparation and their classes were taught on load. The three NSM faculty members did not receive a stipend. Their courses were taught on load as well, but replacement funds were provided to NSM (\$5000 for both Keables and Locke and \$4000 for Carney).

PHASE 1 COURSES		
Course (term)	Instructor, Title	Enrollment
NATS 1201: Environmental Systems (Winter 2010)	Michael Keables, Associate Professor	15
MATC 1952: Calculus II (Winter 2010)	Annette Locke, Lecturer	9
MATC 1200: Calculus for Business & Social Sciences (Winter 2010)	Debra Carney, Lecturer	15
ENGL 2202: Renaissance Poetry and Prose: Digital Archives (Winter 2010)	Scott Howard, Professor	6
MCOM 3700/4310: New Media Law & Regulation (Spring 2010)	Derigan Silver, Assistant Professor	13
	Total # of students	58

PHASE 2. The second phase of the project began in Spring 2010 with eight instructors. The goal of this phase (which is ongoing) is to evaluate the merit of offering online courses during the summer to our undergraduate students. Since about 49% of our undergraduate students are out-of-state students and the remaining 51% are not necessarily from the Denver-metro area, providing online courses would give them an opportunity to take a DU course, rather than take a course at another institution that may not be at the same level of rigor and quality as one of our own courses.

Our hope was to use data from the registrar about what kinds of courses students tend to sign up for in the summer, and what summer courses are transferred from other institutions as a guide for course selection. Unfortunately these data were unavailable, so we again relied on the deans to help us

identify faculty members and courses. Five of these courses are being taught in a condensed format (4 – 5 weeks) as is often the case for face-to-face summer courses for undergraduates.

In phase 2 each participant was awarded a stipend of \$2000, half of which was given after completing the workshops in Spring 2010. The other half will be awarded after the summer courses have been offered. (This is addition to the amount they receive for teaching in the summer from their unit.) An additional \$500 will be given to each participant if they teach their online course a second time. The courses and instructors that are teaching online courses during Summer 2010 are listed below.

PHASE 2 COURSES		
Course (dates course is offered)	Instructor, Title	Enrollment
CORE 2560: America through Foreign Eyes (7/19 – 8/12)	Christof Demont-Heinrich, Assistant Professor	15
ENGL 2130: World Literature, (7/10 – 8/12)	Maik Nwosu, Assistant Professor	6
ENGL 2710: The American Novel -19 th & 20 th Century (6/14–7/16)	Clark Davis, Professor & Chair	6
SOCS 1210: Understanding Communication (6/14 – 7/9)	Daniel Lair, Assistant Professor	19
WRIT 1133: Writing and Research (6/14–8/12)	Jeffrey Ludwig, Lecturer	11
WRIT 1122: Rhetoric and Academic Writing (6/14–7/23)	John Tiedemann, Lecturer	8
ACTG 2010: Survey of Accounting (6/14–8/12)	Cynthia Hollenbach, Lecturer	6
	Total # of students	71

One other course, CORE 2584: Harlem Renaissance, was planned for the summer, but since no students enrolled, it was cancelled. This course will likely be taught sometime during the 2010-11 academic year. Its instructor, Sidra Wahaltere, completed the workshops in the Spring with the other instructors.

II. ASSESSMENT

An assessment plan was developed to evaluate three components of the project. The questions that were explored are:

1. Does student learning appear to be comparable with traditional courses?
2. Is the process of faculty support and course development adequate?
3. Is it “worth it” for DU to offer digital/online courses within its residential programs?

Pre-course and post-course surveys were developed for both faculty and students in consultation with Janette Benson, with the post-course student survey used in place of the traditional student evaluation

forms. A summary of the results that are available so far are discussed in the following sections and links to all of the survey data are provided at the end of this document.

Please note that these data are not complete since the summer courses are in progress. All thirteen instructors completed the pre-course survey, but only the phase 1 instructors completed the post-course survey. Likewise, phase 1 and some phase 2 students completed the pre-course survey but only phase 1 students completed post-course survey.

The data available so far are promising in terms of the quality of the courses and the enthusiasm on the part of both faculty and students for online courses. An analysis of the effectiveness of the faculty support through workshops and individual consultations is underway, and at the end of phase 2 of the project, a separate document will be developed that will address this aspect of the assessment.

One of the issues that we are aware of is faculty time for course development. In the post-course survey, the phase 1 faculty estimated that they spent between 100 and 160 hours developing their courses, or about 2.5 to 4 weeks per course. This may seem onerous, but in fact may not be dissimilar from the time it takes to develop or revise a face-to-face class. The time requirement is, however, complicated by the fact that most of the development needs to be done before the course begins to ensure an organized structure for the students. In face-to-face courses, the instructor can do some of the development as the course is underway.

A second issue appears to be a lack of understanding in some of the academic units as to why we are exploring online teaching, with some faculty members telling us that their colleagues do not support their efforts to develop online courses. In moving forward with this initiative, a mechanism for showing the DU academic community what is being accomplished and why by perhaps having a show and tell would be helpful. Without this community support, it will be very difficult to attract more individuals or to effectively integrate the online courses into the undergraduate curriculum.

A third issue is to identify appropriate classes (that is those that naturally have low enrollments) such that there would be a reasonable number of offerings every quarter.

Finally, is it “worth it”? The data suggest that it is, but to move forward will require more interest and enthusiasm from the academic units.

STUDENT INTEREST IN ONLINE COURSES AS PART OF THE UNDERGRADUATE CURRICULUM

Student demographics. (for phase 1 courses)

- Age – 91% are between 18-22 years old, the others are in their mid/upper 20s.
- Gender - 57% female, 43% male

Pre-course student survey. 112 students from phase 1 and phase 2 of the project have responded to the pre-course surveys. (Please note that some of the summer courses have not started yet.) Questions were included to find out why students had enrolled in these courses, what their previous experience with online courses had been, and whether they would be interested in taking additional online courses.

From the responses (see below), it is clear that the students were attracted to the online format primarily for practical reasons (convenience, scheduling, need credits), with about a third of the students also attracted by the use of digital technology. The convenience aspect is consistent with the fact that these students reported that they spend an average of 22.6 hours per week on extracurricular activities, i.e., they are very busy!

Choose the reasons you registered for this class (choose all that apply).	# of students
Attracted by the use of digital technology	34
Convenience due to work schedule	41
Convenience due to extracurricular activities schedule	43
Convenience due to athletic travel schedule	15
Needed to add more credits beyond what is available on campus	22
Other (convenience, specific situations, didn't know, wanted an online course)	17
Convenience due to summer travel /not living in Denver during summer (for summer classes only)	31

Comments by students on the post-course survey addressed the benefits and the challenges of online courses. Some of these are included here.

Benefits:

I really liked how much you had to interact with each other. There was no possibility to have a few class members who completely led the discussion and left the rest of the class sitting and falling asleep. Each person's input was equally important.

I could work when it was convenient for me. With my schedule this was extremely important. Because we had weekly deadlines, I was forced to do my work instead of putting it off until the end of the quarter.

Flexible schedule, learning at my own pace

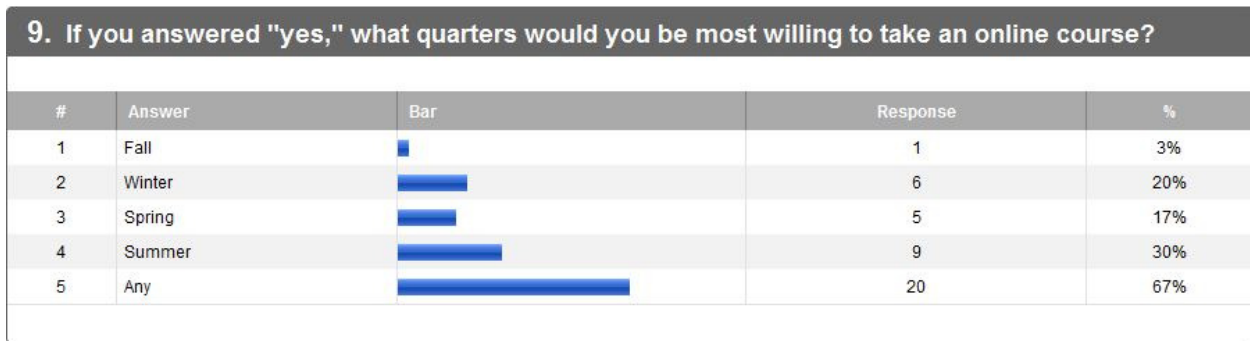
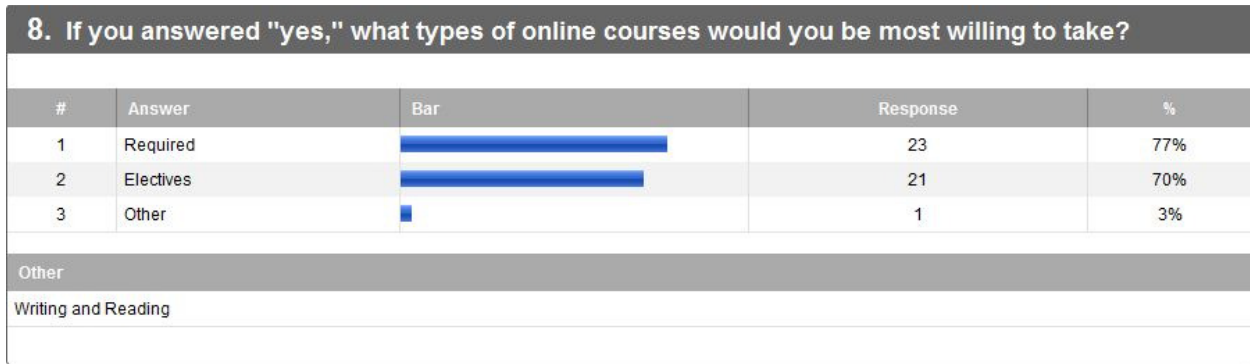
Challenges:

Whenever I worked on the class material it was later at night, therefore I was never able to go to office hours or get help on assignments because it was so late at night.

It's hard to remember to go online multiple times a week

It's a lot harder to relate to other students. In a regular classroom environment, I would be able to better understand where other students are coming from and anticipate their answers because I can associate a thought or an opinion with a face and a voice.

For 69% (77) of the students, this was their first online class. The remaining 21% (23) had taken one or more online classes previously. Most of the students said that they would be interested in taking additional online courses, depending on how this course goes and what courses would be available. On the post-course survey 79% of the 38 students who responded said that they would take another online course at DU, so apparently the courses went well. Students who said they would take another online course would be willing to take a required or an elective course, and most would be willing to take it during any quarter.



FACULTY INTEREST IN TEACHING AN ONLINE COURSE

The responses to the question “*Why did you choose to teach this course in a digital/ online format*” on the pre-course faculty survey were quite interesting. Nearly all of the participants commented that they viewed this pilot project as an opportunity that would help them to improve and expand their teaching skills. Several of the responses are included here.

Great opportunity to move my teaching skills, my research and publications, and my work w/ digital media to a new level.

- I like to stay on top of developments in technology and teaching, and teaching an online course offered a great way to do this (it forces one to keep up!) - I wanted to expand my teaching repertoire - I thought that teaching an online course would give me more flexibility to teach a summer course - Teachers who stay current with technology are, I think, better teachers, and, are more likely to hold on to their jobs if, for instance, everything goes online (which, I hope it doesn't) - Finally, the bonus pay for training was also a good incentive!

I believe that more and more information will be delivered online, and I want to learn how to participate in this medium. I also think that learning how to teach online will enhance my face-to-face courses.

I wanted/needed to teach during the summer to continue to make money, but was drawn by the appeal of being mobile through an online course.

In part because I was asked to as a part of a division-level initiative to increase summer enrollment. Also because I want to find a way for secure summer enrollment so that I can be certain my classes will make [it]. Finally, though I'm unsure about the ultimate merit of online courses, it's clearly the direction things are heading, so in terms of professional development it makes sense to learn how to teach online.

Finally, four out of five instructors from phase 1 of the project said that they would teach again in the online format. Here are their responses:

Yes. While the upfront workload was much more than I ever anticipated, the majority of the students seem to appreciate the course and the effort expended. The flexibility of not being in class at a specified time allows me to better balance my teaching and administrative responsibilities.

Would love to. I think for some students this is an appropriate and convenient learning environment. For those students who can work independently I think the course worked well.

Yes, I would. I think the second time around would be a lot smoother. I enjoyed being creative with the class notes and video lectures.

Yes, absolutely.

No. I didn't enjoy it as much as meeting with my students face-to-face.

DOES STUDENT LEARNING APPEAR TO BE COMPARABLE WITH TRADITIONAL COURSES?

The learning environment. Faculty perceptions on the learning environment were explored through a series of questions that appeared on both the pre- and post-course surveys. The questions and the average responses are given in this table.

In comparison to traditional classroom instruction at DU:	PRE-COURSE AVERAGE RESPONSE* (N=13)	POST-COURSE AVERAGE RESPONSE* (N=5)
the amount of time students spend on the course	2.2	3.4
the amount of student-instructor interaction	2.6	2.6
the quality of student-instructor interaction	2.8	3.2
the amount of student-student interaction	3.3	2.2
the quality of student-student interaction	3.1	2.4
the quality of students’ learning experience	2.8	3.2
students’ motivation to participate in class	2.8	3.4

* 1= Decrease, 2=Decrease Somewhat, 3= Not Change, 4= Increase Somewhat, 5=Increase

The post-course survey has responses from the five instructors in phase 1 of the project, so the comparison to the pre-course responses with all thirteen instructors is not perfect. It is, however, interesting to note the differences between the expectations and the actual experience.

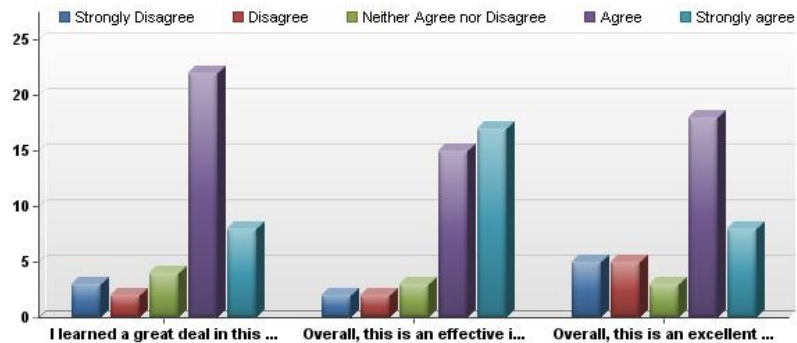
From the faculty perspective, the amount of time that students spent on the courses, the quality of the student-instructor interaction, the quality of the learning experience, and the students’ motivation to participate were higher than anticipated (pre-course responses) and slightly higher than in a traditional course. Student-student interactions, on the other hand, were worse than expected and lower than in a traditional course.

These preliminary results suggest that in most areas, the learning environment has not been negatively impacted in these online courses, and in fact, may be slightly better. Although the amount of student-instructor interaction is perceived to be lower than in a face-to-face classes, the quality of the interaction is rated as higher in the post-course survey. Both the amount and the quality of student-student interactions are rated as lower than in a face-to-face class on the post-course survey. Since peer-interactions are important for student learning (as the literature on this subject indicates), more effort needs to be made to improve this aspect of the online environment.

Student learning. On the post-course survey, instructors were asked *“Please rate your level of agreement with the following statement: Students learned a great deal in this course”*. On a scale of 1 (strongly disagree) to 5 (strongly agree), all five instructors responded with 4 (agree).

On the student post-course survey, students were also asked to evaluate their learning, as well as the instructor and the course.

3. Please rate your level of agreement with the following statements.



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree
1	I learned a great deal in this course.	3	2	4	22	8
2	Overall, this is an effective instructor.	2	2	3	15	17
3	Overall, this is an excellent course.	5	5	3	18	8

Most of the students either agreed or strongly agreed with all three components of this question: they learned a great deal, the instructors were effective, and the course was excellent. This shows that in general, these online courses and the instructors were valued by the students. These are very good results considering the fact that this is the first time that these faculty members had taught an online course.