Maintaining Pedagogical Integrity of a Computer Mediated Course Delivery in Social Foundations

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Abstract

Transforming a face to face course to a computer mediated format in social foundations (interdisciplinary field in education), while maintaining pedagogical integrity, involves strategic collaboration between instructional technologists and content area experts. This type of planned partnership requires open dialogue and a mutual respect for prior knowledge, expertise and experiences within a multi-disciplinarity context. A.D.D.I.E. [Analysis, Design, Development, Implementation, Evaluation] (Branson, R. K., Rayner, G. T., Cox, J. L., Furman, J. P., King, F. J., & Hannum, W. H., 1975; Clark, 1995) proved a critical means to document the opportunities and challenges that exist among individuals of various disciplinary perspectives, pursuing the same goal of transforming a traditionally delivered classroom course into one that is entirely online. Examining the negotiation of pedagogical techniques and technology choices to maintain integrity may enlighten other collaborative efforts. For this purpose, the course transformation process through which experienced social foundations instructors partnered with an instructional designer to conceptualize, develop, produce, implement and evaluate the conversion of a face-to-face graduate course in Historical Foundations of American Education, to a computer-mediated format is described.

Keywords: course conversion, transformation, collaboration, history of education, social foundations, pedagogy, computed mediated education, multi-disciplinarity

Online learning is one of the fastest growing sectors in higher education and corporate training today (The Sloan-C International Conference on Online Learning, 2012). Over 6.1 million students enrolled in at least one online course in the fall of 2010 (Allen & Seaman, 2011). Meeting unmet demand for educational programs by providing access via the online modality is in the interest of all major stakeholders (students, faculty, administrators, and the service areas of universities). At the same time, instructors may be reluctant to convert existing course on-line due to fears that online learning will lack academic rigor and limit students' exposure to diverse peer perspective (Kim & Bonk, 2006). By studying the entire instructional design process for course transformation from face to face (F2F) to online, educators, course developers, faculty and administrators from multiple disciplines can make more informed decisions and recommendations for creating computer mediated courses that are equally accessible and of utmost quality (Schulte, 2010).

This is a systematic examination of the course transformation process from face-to-face to online. In particular, we document the collaboration between the Subject Matter Experts (SMEs) and the eLearning Facilitator (eLF), authors of this paper, through extensive data collection during the conversion process. SMEs and eLF adhered to the major tenets of an established instructional design model: A.D.D.I.E. [Analysis, Design, Development, Implementation, Evaluation] (Branson, R. K., Rayner, G. T., Cox, J. L., Furman, J. P., King, F. J., & Hannum, W. H., 1975). In this case, the decision to document the conversion process was based on the eLF's desire to combine technological and pedagogical goals (Moore & Kearsley, 2005; Clark, 1995). Whereas, the instructors' program had historically resisted online course development due to concerns of transforming pedagogical tools used to address topics of race and social class inequality in F2F

classrooms to an online experience. We found the collaboration with such specifically designed goals resulted in a creation of a high quality course that continues to be enhanced each semester (Sfard, 1998).

Objectives

The purpose of this study was to examine the course transformation process through which individuals from multiple disciplines cooperated to conceptualize, design, develop, implement and evaluate a F2F graduate course in Historical Foundations of American Education to an entirely computer mediated format. Specific objectives included an analysis of:

- The interaction among collaborators from conceptualization to production and evaluation as the course was transformed and taught.
- Instructional strategies to maintain pedagogical integrity and promote student interaction while teaching social foundations courses online (Lalonde, 2011; Kelsey, K. 2000).
- How fully online courses change the landscape of social foundations content delivery, pedagogy and learner experience in a computer mediated format.

Institutional Context

The authors of this paper work or study within the College of Education (COE) at a large metropolitan university (MU)[1]. This COE is the 4th largest in the nation, and the University is ranked as having the 17th most diverse student body. Given MU's large metropolitan and regional service area, it is not surprising that increasing access through online learning became a 21st century priority for both the university and the COE. For instance, currently, MU has one fully online program at the undergraduate level, 20 at the master's level, and two at the doctoral

[1] MU is a pseudonym.

level. Strikingly, nearly half of the fully online graduate programs, including those at the doctoral level, are offered by the COE. Because part of the COE's mission is to prepare teachers and other professionals to work in diverse school settings, content in historical and social foundations of education should play a critical role in professional preparation (Bukin, 2005). None the less, it appeared that the social foundations program at MU was staying off line. Until the fall of 2011, the social foundations program had only offered one course on line on four occasions. The lack of online courses in social foundations clearly undermines the field's critical content from being a component of graduate education and thereby limits students' exposure to its perspectives.

It was within this context, that the faculty of the department of special education requested that an existing course, EDF 6517 Historical Foundations of American Education, be converted to a computer mediated format to accommodate their fully online master's program. To provide support and incentives for faculty to participate in the conversion process, MU's Media Innovation Team provided a stipend and assistance. In addition, each instructor was given a 10-hour Teaching Assistant during the first semester they taught the course. Two social foundations faculty members, who are both co-authors, agreed to convert the course and teach it online in subsequent semesters. The benefit of two faculty members collaborating on the course development was that if the online version had high demand it could be more easily rotated on an annual or biannual basis. However, neither faculty members had taught the course F2F and therefore not only was it their first time teaching online; it was also their first time teaching the content. Importantly, an eLearning facilitator (eLF), who is also an author, guided the professors through the course development and delivery process. The first semester (spring, 2012) the

course was offered it closed due to high enrollment. The second semester (summer, 2012) the cap of the course had to be expanded to meet demand, and subsequently that course was co-taught by one of the participating social foundations faculty and an adjunct faculty member.

Case Design

This research is based on a case study approach (Yin, 1994). Two cases, i.e. iterations of the online course during the spring and summer semesters are analyzed. Descriptive statistics, regarding the characteristics of the students in the courses will be reported. These data include such information as gender and major. Content analysis of meeting notes between the instructors, referred to as subject matters experts, i.e. SME's henceforth and the instructional designer/project manager, referred to as eLearning Facilitator (eLF) occurred to determine emerging themes. For example, a primary mode of communication occurred when the SMEs would describe an activity that they normally had the students participate in for the F2F version and ask the eLF how this exercise could be "translated" for use in the computer mediated environment. Document analysis of items used to develop the course were also be analyzed. These documents included, course syllabus, course map, i.e. plan or roadmap, and assignment resources (such as textbook, articles, videos, Articulate ™ presentations, primary source documents and websites). Student evaluation data was collected via the university-wide student evaluation of instruction instrument. More specific student evaluation data was collected through the use of an electronic survey tool, Select Survey. Some student coursework was also more carefully examined (beyond the standard evaluation for grading purposes). Coursework was analyzed to determine worth (value to student learning, engagement/interaction, and related-ness to course objectives). Also, selected student work was inspected to assess whether these

assignments lend to student growth in terms of knowledge acquisition, critical thinking skills and perspectives on socio-cultural issues in education.

Sample size/type. The sample was a convenience sample. The subjects in the study were students (n=52) enrolled in both sections of the course. The SMEs and eLF are female. The number and sex of students enrolled in each course are listed in Table 1.

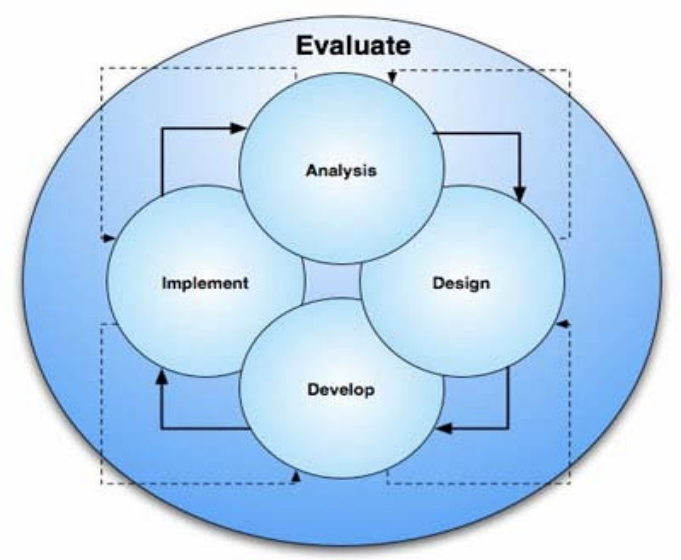
Table 1. Number and Gender of Students

SEMESTER	MALE	FEMALE	TOTAL
SPRING	2	21	23
SUMMER	8	21	29
Total	10	42	52

Methods

The eLF, representing the university-wide instructional design team, partnered with social foundations SMEs to exchange content expertise, instructional and technological guidance (Hoepfl, 1997). The eLF, worked closely with the instructors through the course development, delivery and re-design process. Course transformation followed an instructional design model, ADDIE (Branson, Rayner, Cox, Furman, King & Hannum, 1975), see Figure 1.

Figure 1: Steps in the ADDIE Instructional Design Process: Analysis, Design, Develop, Implement and Evaluate



Each step involved consultation on the part of the SMEs and eLF, in this case (Egen, T & Akdere, 2005). The SMEs engaged in continual review of the content and iterative modifications where made by the design team under the auspices of the eLF. Each step of the instructional design process, including milestones and the roles/responsibilities of the SME's and eLF (ID/PM) are described in Table 2.

Table 2: Instructional Design Model Steps/Roles and Responsibilities

Design Process Step	**Role: SME**	**Role: ELF**
Analysis (needs, outcomes, instructional approach)	Completion of "Course Map" which includes documentation of ALL content, assignments, point values, presentations, multi-media, conceptualizations (ideas to move forward with). MILESTONE: Delivery of all digital course materials to developmental course shell.	Qualitative Analysis of instructional approaches (F2F or otherwise) and current content. Needs analysis of content (and type) to be developed and/or obtained. MILESTONE: Review and evaluate course syllabus and objectives/outcomes.

Design (plan and timeline)	Input as to eLearning design artifacts and content format. MILESTONE: Instructional Design Plan	Create design brief, select appropriate technological tools based on content and tasks. Examples: Blackboard as the learning management system, Elluminate, as the synchronous web-based tool, interactive, multi-media Articulate presentations, web-pages, primary source documents and videos. MILESTONE: Instructional Design Plan
Development (production of digital content according to the design plan and timeline)	Review and provide timely feedback on course elements as they are developed. MILESTONE: Converted digital content	Develop eLearning design artifacts and digital learning materials using selected technologies. MILESTONE: Converted digital content
Implementation (review all course materials and functionalities to ensure that links are working and that digital content is editorially correct and complete per the instructional specification)	Qualitative review of online course, providing feedback for [minimal] changes MILESTONE: Project Closure - Online course is ready for implementation.	Qualitative review of online course. Incorporate feedback for [minimal] changes. Determine need for software to maintain course/materials. Student evaluation tool provided. MILESTONE: Project Closure - Online course is ready for implementation.
Evaluation (formative and summative, such as tests designed for domain specific items and provision of opportunities for feedback from the users)	Teach the course online	Gather change requests and evaluation data for revisions and re-design

Results following A.D.D.I.E.

Systematic analysis of the course transformation process and lessons learned are reported. This analysis is then connected to steps of the A.D.D.I.E. model. Recommendations for SMEs

(instructors), eLFs (instructional design teams) and administrators engaged in course transformation are presented.

Analysis. The eLF initially held an orientation meeting with the Chair of the Department in which the SMEs were located. The chair agreed that transforming this content was appropriate because it may lead to higher enrollment, provide additional accessibility, fill a request by another program and promote 21st century teaching and learning in historical and social foundations of education.

The eLF then contacted the SMEs for an orientation to the course transformation process utilized by the central instructional design team. Initially, the SMEs had apprehensions about the capacity and raised the following questions: Will the content appear as robust as it was presented in the F2F class? How will students be engaged with each other and the content? How will SMEs convey their expert perspectives on the topics while still allowing for exploration and discovery on the part of the students?

For the eLF, these are common questions raised by instructors inexperienced with online learning. In response, the eLF held a series of meetings to map out the current content, and to learn about the types of learner-centered interactions the SMEs typically had in their F2F sessions and translate those learning experiences to the online environment using computer mediated technologies. Better informed of these technologies, SMEs completed the course map, dividing up the content into lessons, according to topics covered in the selected textbook. Basically, the course map served as a structure for documenting preparatory materials (i.e., what students need to read, view or interact with to prepare for tasks that apply the content).

Understanding the instructors' goals for content and pedagogical practice, the eLF then examined the course map, recommending instructional approaches and technical tools that present the content to students (Gamson, 2006). The eLF suggested evidence based instructional methods that are known to be effective in online environments. For example, a high level of interactivity was suggested between instructor-student, student-student and student-content to overcome the transactional distance inherent in courses that are offered in environments in which instructor and learner are separated (Moore & Kearsley, 2005). Technical tools were selected in a manner such that the power of the tool was balanced with the ease of use. For instance, Articulate Presenter™ was selected as a presentation tool because it was sophisticated enough to combine a variety of modalities (visual, audio, interactive) while still being user-friendly.

Design/Development. A visual design was created in response to the SMEs' request to "bring a fresh look to historical imagery". Many authentic photographs from historical time periods in American history were used to illustrate the people, places and events that shaped our educational landscape today. A Powerpoint/Articulate template and course banner (appears when students first open the course in the learning management system) were designed to convey a consistent look and feel throughout the course (see Figure 2).

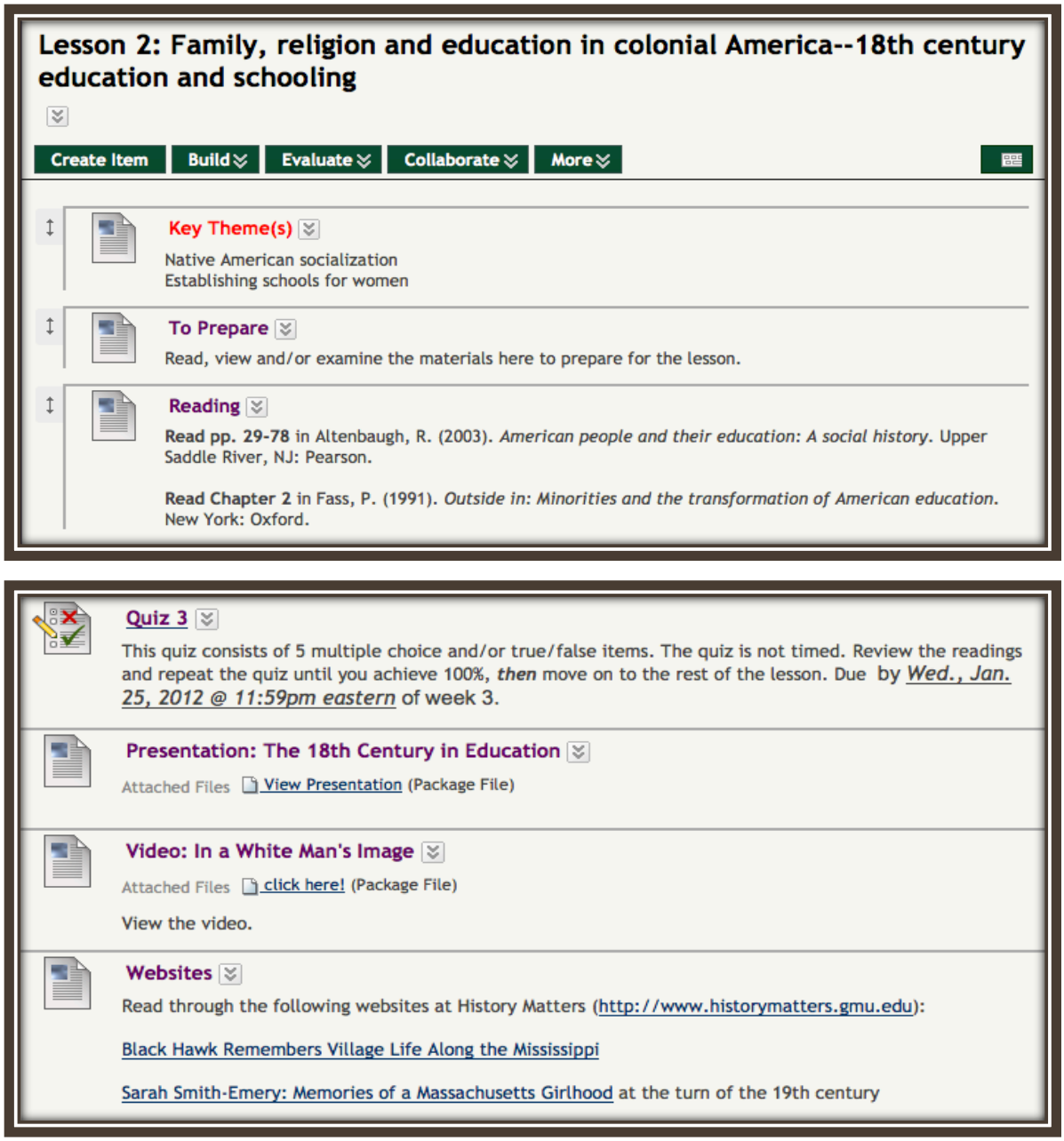
Figure 2. Custom Course Landing Page

Note. Custom course shell landing page, displayed when students first enter the course in the learning management system

A consistent course structure was also recommended which included the creation of ten modules, referred to as lessons. The components of each lesson were (see Figure 3):

- Key Themes (Objectives)
- To Prepare
    - Readings
    - Comprehension Quiz
    - Interactive, multi-media presentation
    - Video
    - Websites

Figure 3. Preparation for the Lesson

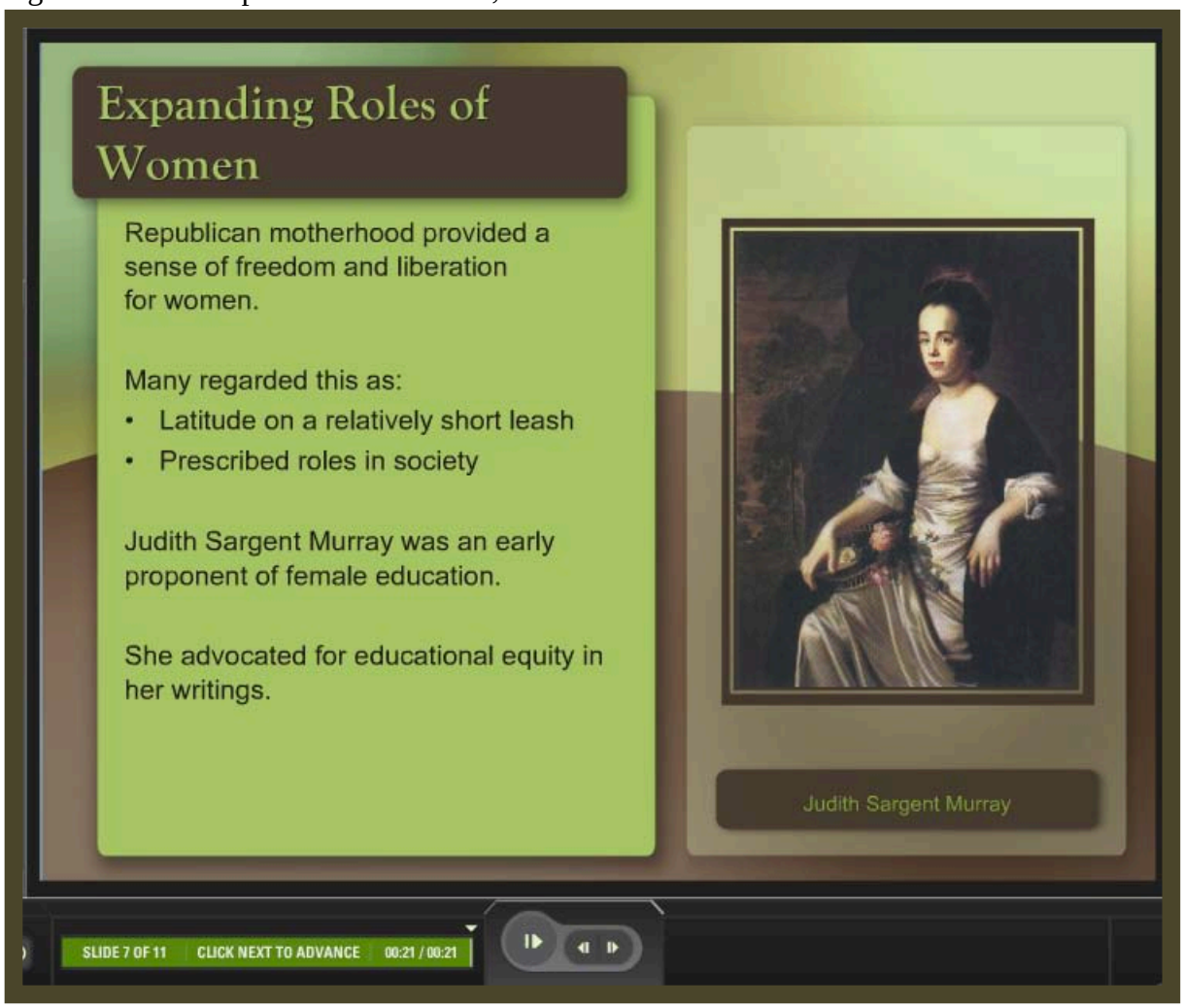


Note. Preparation for the lesson, such as readings, comprehension quizzes, interactive multimedia presentations, videos and/or websites.

Within the “To Prepare” section, each lesson contained an interactive multi-media presentation, including audio narration and transcript, visual images, and engaging activities, for instance,

formative questions, asking the student to think about the content they were just presented, (see Figure 4).

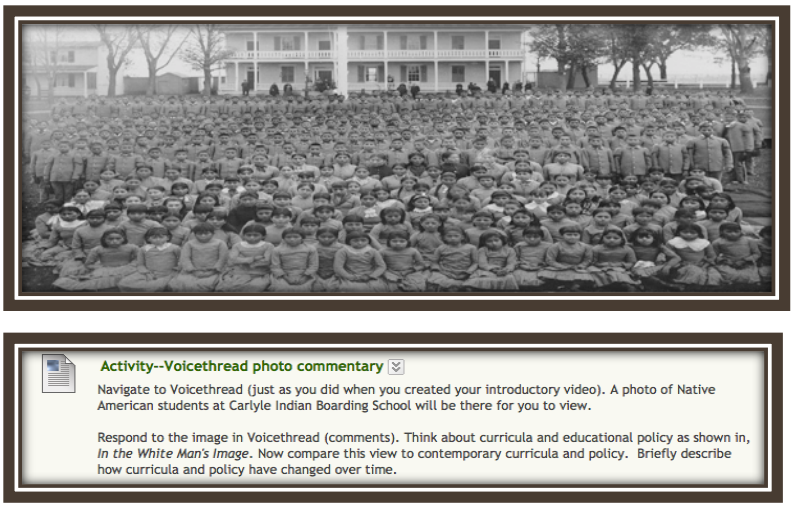
Figure 4. Screen capture of Multimedia, Interactive Presentation



Note. Interactive multi-media presentation, including audio narration and transcript, visual images, and engaging activities, for instance, formative questions.

Following the “To Prepare” portion was a “To Do” section listing the instructions and tasks that students would engage in to demonstrate knowledge acquisition. Figure 5 displays one such engagement (Conrad, 2002; Kanuka, Collett & Caswell, 2002).

Figure 5. Sample Lesson Activity



Activity--Voicethread photo commentary

Navigate to Voicethread (just as you did when you created your introductory video). A photo of Native American students at Carlyle Indian Boarding School will be there for you to view.

Respond to the image in Voicethread (comments). Think about curricula and educational policy as shown in, *In the White Man's Image*. Now compare this view to contemporary curricula and policy. Briefly describe how curricula and policy have changed over time.

Note. "To Do" activity in which students examine a photo and react to it within the historical context of this lesson.

Implementation. Each lesson was built in a similar fashion to the one displayed. Upon completion of development, the course was reviewed, including functionalities to ensure quality and ease of use. SMEs were asked to examine the content for proper chunking (easy to digest in an instructional sense), sequence and connections to imagery, multimedia and other preparatory resources. It was determined that the lessons would be set on adaptive release to require students to follow the most efficient and effective path through the course, i.e., computer-mediated pacing (Moore, 2002).

Evaluation. Evaluation occurred on several levels: a) student evaluation on course-wide assignments and rubrics designed to demonstrate learning outcomes; b) SME evaluation of student learning progression related to chosen course materials, order, timing and functionalities of course delivery, c) student evaluation of instruction and course materials.

First, overall student outcomes as measured by letter grade are reported as follows (see Table 3).

Table 3. Percentage of Students who Earned each Letter Grade

			Spring 2012			
			GRADES			
GRADE	A	B	C	D	F	TOTAL
# OF STUDENTS	17	3	1	1	1	23
			Summer 2012			
			GRADE			
GRADE	A	B	C	D	F	TOTAL
# OF STUDENTS	18	9	2	0	0	29
TOTAL STUDENTS EARNING THAT GRADE	35	12	3	1	1	TOTAL 52

Evaluative Results

One of the authors' and the first instructor (SME 1) of this course was at an initial disadvantage. This instructor was teaching a new course and online for the first time. Although in constant contact with the eLF and other SME 2, this was new territory. Pedagogically once the course began, the instructor noted some areas of improvement for future course offerings, but was compelled to make minimal changes, not wanting to cause a disruption for students for this first offering. For example, the amount of time spent responding to student questions and requests. SME1 felt compelled to respond and check in daily with students, although this was not representative of what occurs in a F2F modality. Further, the lack of extensive technology expertise was a challenge at times, as the instructor often felt vulnerable when technology failed and had to seek additional support in order for students to meet with success. The critical element in this inaugural offering was the value of collaboration with colleagues that provided support through constant communication and alternate problem solving techniques.

For example, one source of tension revolved around balancing student demand for instructor provided content and instructors' desire to promote student problem solving and student base inquiry. For example, one SME felt it was pedagogically unsound to provide access to all materials within the course shell believing that students should practice skills of finding course materials online through the library or web based archival collections. Accessing and navigating web-based archival material provided a critical learning opportunity. Yet, this thinking was revisited after the SME experienced teaching the course in a computer-mediated format. It was decided that this format required a certain level of explicit directions that a F2F course did not. Importantly, without the weekly in-class F2F opportunities to clarify instructions regarding assignments for students with full time jobs, family responsibilities, and heavy course loads, it became apparent that online "handholding" was needed. For example, to balance these needs, it was recommended that the course shell include links to Primary Source Documents (PSD). In addition it was determined that students needed more direct instruction online on how students should be analyzing documents, texts, video and other course material.

SMEs learned that at times online instructional strategies had several advantages over F2F, specifically in F2F courses, instructors do not have time to reflect on student interaction and discussion to provide guidance. Online, the instructor can read student posts and responses to other student posts and reflect before responding with additional prompts for steering. Following the first course offering, instructors wanted to find better means to maximize such engagements and opportunities. For upcoming semesters we will explore ways to better use discussion boards to this end. One such option is posting additional reading material that students may find useful as they navigate the course.

Table 4. Sample Evaluative Results from Students

	Excellent	**Good**	**Satisfactory**	**Poor**
Student-Student Interaction				
Opportunities for students to actively participate and contribute to this course	83.3% (10)	16.7% (2)	0% (0)	0% (0)
Learning Resources				
Relevance of Readings, (articles, primary source documents) to my learning	75% (9)	16.7% (2)	8.3% (1)	0% (0)
Relevance of Multimedia (video clips, articulate presentations) to my learning	75% (9)	16.7% (2)	8.3% (1)	0% (0)
Relevance of websites to my learning	75% (9)	16.7% (2)	8.3% (1)	0% (0)
Notes. n= 12, 100% of students say that opportunities for them to actively participate and contribute to the course are good or excellent.				

Qualitative commentary included such statements as, “I like how we can express our opinions and no one takes it into offense”. This reveals that a positive and respectful environment that was open to dialogue around controversial topics was created and maintained, allowing students to explore the perspectives of others in a safe space. Another student remarked, “Thoroughly enjoyed the class. I especially liked the video presentations and the assignment of a memoir reading” indicating that materials used to compliment the content were meaningful, to this student. Finally, one student expressed that, “I like this course because it was very informative and it is very useful in my line of work” which may indicate that the course had practical applications to authentic workplace scenarios.

Implications

The time and effort dedicated to transforming a F2F course into a computer-mediated format is significant. Instructors (SME’s) are often surprised at the amount of time they must invest into producing an online course that is substantial, content-wise, technologically appropriate and

user-friendly. Table 5 depicts time estimates for each step of the ADDIE process.

Table 5. Time estimates (in hours) per ADDIE step, per role.

Design Process Step	**Estimated hours** **Role: SME**	**Estimated hours** **Role: ELF**
Analysis	10	10
Design	5	20
Development	40	40
Implementation	15	20
Evaluation	10	10
TOTALS	80	100

Note. There were two SMEs.

For the first offering of the course, SME 1 was in constant communication with the eLF and SME 2 beyond the time involved for addressing each of the ADDIE steps. SME 1 initially received multiple individual emails from students asking questions that should have been posted in the designated Q & A section within the course, so that all students could benefit from the responses. However, a precedent had been set and it was a challenge to redirect students to the appropriate place for broader questions. Another area of concern for the SME was reducing the cyberspace gap, i.e. transactional distance (Moore & Kearsley, 2005). This issue was addressed by adding weekly announcements that related to content or sharing of supplemental material and typically ended with a reminder to post in the Q & A section or the SME directly for personal

matters. Seemingly, students appreciated this level of interaction. It was important to be transparent with students regarding SME's expectations.

It was also critical to address pedagogical and content concerns to ensure the appropriate amount of rigor in the course. Rigor and critical approaches to the subject matter were of utmost concern. There had been resistance with respect to transforming this course into an online format due to the perception that rigor and quality would be sacrificed. The first instructor was aware of this challenge and viewed this new approach as an opportunity and challenge. In an effort to ensure the material was adequately covered, students had multiple opportunities to demonstrate their knowledge. The SME instituted weekly journal entries as a way for students to be engaged with the material and allow the instructor to monitor looming questions or omissions in the thought process during the course. However, at the end of the semester the SMEs met and SME 1 revealed the quality of journals had not met expectations. Based on student feedback, the journal entries provided a better opportunity for instructor-student engagement around course material. It was decided to make journal entries a less frequent (from 10 to 4-5) and more heavily weighted assignment than discussion board posts (Soller & Lesgold, 2000).

In the second iteration, SME 2 had a co-instructor and ten hour T.A. support due to expanded enrollment. Decisions were made prior to course commencement with respect to responsibility. The primary instructor was responsible for grading 70 percent of student work while the secondary was responsible for 30 percent. It was agreed that there will be a one week turnaround time for all work to ensure student engagement and contact with the instructors. The T.A. was responsible for ensuring online quizzes were accurate, responding to student mechanical

inquiries, and producing course material for future offerings. To ensure student engagement, the primary instructor posted responses to the discussion board twice weekly to guide, steer or provide feedback on discussions. The secondary instructor posted closing remarks at the end of each lesson. Because all graded material had a week turn-around time, students had plenty of time to digest, and request clarification prior to the next assignment. Because of the condensed nature of the course and multiple assignments students had many opportunities to interact with the instructors individually and as a group each week. Most queries were through the section Q & A. Emails directly to the instructor revolved around questions regarding individual student work and course policies such as late papers. Written work required students to cite relevant course material and students lost points for failing to do so. The guiding journal question allowed each instructor to prompt critical reflection. Areas for improvement such as modifying rubrics were noted throughout the semester.

At the end of second offering, all instructional staff met and discussed experiences and recommendations. The collaborative process meant the course improved much more quickly. Because this collaboration continues to grow including the addition of an adjunct instructor and T.A., multiple perspectives provided much deeper reflection on the course revision and reflection process.

Conclusions

It is critically important for social foundations educators to translate their content to the online environment in meaningful ways that stimulate dialogue among teachers and educational administrators. Creating an online environment in which teacher-students feel safe and confident to converse about issues related to social foundations and education is of utmost importance to

positive progress in affecting the lives of learners. Social foundation educators must continue to identify opportunities to provide access to their content through digital-age technology integration while maintaining pedagogical integrity.

Further, the partnership of faculty (SMEs) and instructional design teams (eLF) is recommended as the ideal approach to transforming courses from F2F to online using pedagogically sound methods and integrating technology effectively. Critical to this partnership is the notion of a shared vision, a shared sense of responsibility towards creating a successful academic experience. The success of this transformation was realized when the collaborative experience borne out of proximity and departmental need transformed into a collective sense of "our" course. The course belonged to each of us in unique but equitable ways. We, as a collective, were committed to the success, excellence and theoretical positions of the course transformation process which involved critical self-reflection (Schneider, 2010). Our group was equally as committed to the success of the students enrolled in the course, thus we valued the time spent determining our individual roles and responsibilities in the process (Heuer & King, 2004). Enabling the student voice adds to the ability of instructors and course designers to interrogate more specifically and critically, diverse aspects of course transformation, delivery and learning outcomes.

Increasingly, social foundations educators are translating content to the online environment and teaching online. This paper strives to add to the body of knowledge to specifically develop, discuss and address the particular issues and opportunities related to the use of technology integration in teaching and providing access to Social Foundations courses while maintaining pedagogical integrity. Further, the incorporation of faculty, E-learning facilitator (instructional

designer), and graduate student voice adds to the ability of the panel to interrogate more specifically and critically diverse aspects of course transformation, delivery and learning outcomes.

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