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Introduction to the Special Issue on Blended Learning
Part 1: Blended Learning at the Class Level

Karen Swan
University of Illinois Springfield

One of the more interesting sessions I attended at this year's American Educational Research Association (AERA) annual meeting included a report of findings from some new questions being tested on the 2008 version of the National Survey of Student Engagement (NSSE). The new questions involve the use of Internet-based technologies in college classes and were tested with over 17,000 students at 45 institutions of higher education. Chen, Guidry and Lambert (2009), the authors of this study, used regression analyses, controlling for student level variables (including age, gender, enrollment status, parents' education, grades, SAT scores, transfer status, age, membership in a fraternity/sorority, whether or not a student is in a STEM field, race-ethnicity, and U.S. citizenship) to assess the effects of the use of Internet technologies for learning on NSSE engagement scales. They found that such technology use was highly predictive of higher scores on all the NSSE engagement scales and subscales – Deep Learning (higher order thinking, integrative learning, reflective learning); Gains (personal and social development, practical competence, general education); and NSSE Benchmarks (academic challenge, active and collaborative learning, supportive campus environment, student faculty interaction). Chen, Guidry and Lambert concluded that their results suggest that "there is a relationship that exists between students who engage in course-related technology and those who engage in other ways. Additionally, there appears to be a relationship between technology use and learning and other gains. It would seem that the use of course-related technology is another important concept under the umbrella of student engagement."

I think that these findings are a fitting frame for thinking about blended learning, the focus of this special issue. Also known as "hybrid" or "mixed" learning, blended learning integrates face-to-face and online learning in a pedagogically sound manner. The NSSE findings suggest that blended learning not only solves problems of space and access, it is also more likely to engage students in learning. Perhaps more for this reason than any other, blended learning is growing as fast as online learning. Allen, Seaman and Garrett (2007), for example, report that more than 50 percent of US institutions were offering at least some blended courses at both the graduate and undergraduate levels in 2004 (the last year institutions were surveyed regarding blended learning), with over 75 percent of large public institutions offering blended classes. Many scholars think these numbers seriously underestimate blended offerings. Indeed, 68 percent of students responding to the 2009 NSSE survey (Chen et al., 2009) reported taking at least one blended course.

In fact, many educators believe that blending learning will be the norm in higher education in the not too distant future. They tend to believe so because they also believe that blended learning, by combining the affordance of face-to-face and online learning, is better positioned to enhance engagement and learning. For example, Anthony Picciano writes in this issue, "Of all the opportunities for using online technology, blended learning may be one of the more important pedagogical approaches that can help in this regard, particularly for mainstream higher education." Randy Garrison and Norm Vaughan go even further in the introduction to their book on blended learning. They write, "When blended learning is well understood and implemented, higher education will be transformed in a way not seen since the expansion of higher education in the late 1940s (Garrison & Vaughan, 2008, p. x)."

I invite you to consider the promise of blended learning as you explore the articles in this special issue of RCETJ which will be offered in *two parts*. This, the first of the two, focuses on blended learning at the class level. The next part, to be offered in the summer, will be primarily concerned with blended programs. Articles in the first part of the special issue are summarized below.

The first article in this issue, Blending with Purpose: the Multimodal Model by Anthony Picciano,, lays the theoretical groundwork for all the articles in this and its companion issue due out this summer. It also contains a link to a very well-made video overview that I urge you to watch. Picciano proposes a multimodal conceptual model for designing and developing blended learning courses and programs based on the notion of "blending with purpose." He argues that the blending of face-to-face and online educational experiences should be well-integrated and organized to enhance learning for increasingly diverse student populations, and recommends that pedagogical objectives should drive the activities, approaches, and choice of modalities that faculty use in blended instruction. Picciano's model presents six basic pedagogical frames – content delivery, social/emotional support, dialectic/questioning, synthesis/evaluation/assessment, collaboration/student generated content, and reflection -- and suggests multimodal approaches for achieving them. It should be a given that other objectives can be added where appropriate. The most important feature of the model, he writes, "is that instructors need to carefully consider their objectives and understand how to apply the technologies and approaches that will work best for their students."

The remaining articles in this issue provide excellent examples of how this can be done. Their authors describe a broad range of blended course designs for an equally diverse set of courses using an interesting variety of modalities. The first four of these are case studies which give narrative descriptions of the development of quite different sorts of blended courses that are rich with examples. The final three articles are research studies which, although they utilize quite different methodologies, provide evidence of the efficacy of blended learning. What all these articles have in common is the purposefulness with which blended learning was approached.

The first of four case studies, On Offering a Blended Course by Gerald Bergtrom, describes the author's transformation from skeptic to advocate as he redesigned a face-to-face, large enrollment, undergraduate cell biology course and implemented it in a blended environment. Bergtrom not only concludes that it is more than possible to deliver the enormous amount of material common to introductory science courses in a blended format, but he evokes the NSSE findings in reporting that the blended version of his course provided more opportunities for student engagement and active learning. He provides specific examples of how he made his course more interactive that I am sure will be of use to instructors of large enrollment classes in a variety of disciplines.

In The Saga of Two Professors Co-Teaching a Blended Course, Conrad Boyle and Murray Blank give a humorous account of how they co-taught a graduate level blended course in marketing, with one of them handling face-to-face sessions and the other handling the online portion. Along the way they share lessons learned about communication between co-teachers, designing a syllabus and setting up a blended course, division of labor, coordination of tasks, technology tools, and managing and conduction the course. Their advice is both practical and thoughtful and should be of great use to anyone thinking about collaborating on blended learning.

In Blended Learning in a Digital World: Writing and Research for the Facebook Generation, Dan Kulmala and Andy Stanton describe a very different sort of collaboration using Web 2.0 tools. Kulmala and Stanton developed a collaborative "writing with video for the web" project to be completed cooperatively by students in their English Composition and Multimedia Development courses. They used a social networking site created in Ning to bring these quite different student groups together to work on their projects, which also required real world research in the university community. Kumala and Stanton report on the benefits and challenges of this "post modern" model of higher education. They conclude that, " In this rich, ubiquitous environment of learning, the pedagogical practices of blended learning become key methods by which to enhance students' educational experiences through course delivery systems that are already changing the ways in which we work and communicate in the professional world. "

Using Blended Learning to Ensure Consistency and Quality in Multiple Course Sections by Karen Perrin, Laura Rusnak, Shenghua Zha, David Lewis and Sandhya Srinivasan, discusses the ways in which a blended format can be used to maintain consistency and quality across multiple course sections of an undergraduate course in public health, while retaining instructors' freedom and creativity. The authors explore the benefits and challenges of such an approach and offer strategies for effective implementation. They address issues of personnel structure, communication, course design and consistency, assessment and evaluation, and technological challenges, and provide a "just-in-time tool" that can be used by administrators to address the challenges of incorporating blended learning.

Mary D. McVey 's article, Using a Blended Approach to Teach Research Methods: The Impact of Integrating Web-Based and In-Class Instruction, explores the impact of blended learning on student outcomes in a mixed methods study of an undergraduate educational research methods course. McVey compared midterm and final grades for students enrolled in a fully face-to-face version of the course with those of students enrolled in a blended version. She found no differences in midterm grades, but students in the blended version of the course significantly outperformed those in the face-to-face version on the final exam. In addition, course evaluations for the two versions of the course were nearly identical and no negative comments were made about the online activities in the blended course, leading McVey to conclude that blended learning offers a more than viable alternative to strictly face-to-face instruction.

In Advanced Technical Writing: Blending Virtual Communities, Reneta D. Lansiquot explores the use of online virtual worlds for teaching writing. She tells how she added a collaborative writing assignment in Second Life (SL) to three sections of a technical writing course for undergraduates. Student groups were asked to do research on a chosen topic in SL locations related to it and then write a manual on the topic as a result of their interviews with virtual residents. Manuals were published in SL and usability studies on them conducted therein. Results from her mixed methods study of this innovation indicate that students felt that written communication in a virtual world was, in itself, purposeful and that the assignment gave them a better sense of audience for their writing. Findings from surveys of students' apprehension about writing, given before and after the virtual writing experience, show a meaningful decrease in apprehension after completing the virtual assignment.

Finally, Debra Pane, in Third Space: Blended Learning and Teaching, uses ethnographic methods to document how blended methods can support the development of a "third space" where pre-service teachers (from largely mainstream backgrounds) and marginalized student populations can interact to the benefit of both. Pane's findings indicate that blended teaching and learning can increase critically reflective interactions between these two groups to support the development of "third space" teacher dispositions, praxis, and critical views of literacy. Her study uses a range of data including observations, informal interviews, documents, and artifacts to support her contention that the pre-service teachers enrolled in a content-area reading education course were transformed by the experience.

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Blending With Purpose: The Multimodal Model

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Abstract

The purpose of this article is to propose a blending with purpose multimodal conceptual model for designing and developing blended learning courses and programs. A blended learning model is presented that suggests that instruction be designed to meet the needs of a variety of learners. Specifically, *Blending with Purpose: The Multimodal Model* recognizes that because learners represent different generations, different personality types, and different learning styles, teachers and instructional designers should seek to use multiple approaches including face-to-face methods and online technologies that address the learning needs of a wide spectrum of students. A major benefit of multiple modalities is that they allow students to experience learning in ways in which they are most comfortable while challenging them to experience and learn in other ways as well. Critical to this model is the concept that academic program and course goals and objectives drive the pedagogical approaches and technologies used. Issues related to definitions of blended learning, how teachers and students use technology, generational characteristics among student populations, personality types, and learning styles are examined. This article is based on presentations made at workshops sponsored by the University of Illinois – Chicago and the Sloan Consortium in 2008.

To view a seven minute video introduction to this article click on this link (movie size: 10MB).

KEYWORDS

online learning, blended learning, distance learning, asynchronous learning, computer-mediated learning, computer-mediated communications, learning styles, instructional design, instructional technology, multiple modalities

Introduction

Educators at all levels have been challenged over the past several decades by a wide variety of technologies designed to assist in teaching and learning. Various technologies including television, microcomputers, presentation software, video gaming, and simulation programs have been heralded as having the potential for dramatically changing instruction, yet most of what goes on in education continues to rely on teacher-student interaction in face-to-face traditional classrooms. On the other hand, it can also be argued that the emergence of the Internet and World Wide Web in the 1990s has begun to make serious inroads into the traditional face-to-face model. Allen and Seaman (2007), after tracking online enrollments in colleges for more than five years, estimated that there were approximately 3.9 million students or approximately twenty percent of the total higher education population enrolled in fully online courses in American colleges and universities in 2007-2008. This is a significant penetration considering online learning is only a little more than a decade old. Curiously, there are few, if any, estimates of the number of students enrolled in blended (part online and part face-to-face) courses. While it is generally acknowledged that blended learning is reaching well into the mainstream of American higher education, data are not available that document this reach. Why is this so?

First, blended learning has become so commonplace that many faculty do not necessarily identify themselves as teaching blended learning courses when, in fact, they are. College faculty, along with most of the general population, are depending upon online technology and using Internet tools to assist in instruction. They use these tools as they would overhead projectors or blackboards. The mystique and aura of teaching online that was present in the mid to late 1990s is disappearing, and faculty no longer see themselves as doing something unique and special, particularly in blended learning environments where only a portion of the class may be conducted online. As Eliot Masie, president of the Masie Center for Learning and Technology, has observed: the "e" in e-learning is disappearing and it is all just learning (Masie, 2003).

Second, colleges and universities are finding it difficult to keep accurate records on faculty who teach blended courses. The Sloan Consortium, in collaboration with the Babson Survey Research Group, has been conducting annual national surveys on online learning at American colleges for six years. The findings from these surveys represent perhaps the most important baseline data on student enrollments in fully online courses in American higher education. The surveys are cited regularly in studies and articles on online learning in both the general media as well as in scholarly journal articles, yet very little data are presented on blended learning. Jeff Seaman, one of the authors of these studies, is concerned and a bit frustrated that these data are not being systematically collected at most colleges and universities. The fact is that faculty might be teaching blended courses but administrators do not necessarily know who they are or what they actually are doing in these courses. The lack of mechanisms for incorporating information on blended courses in college databases creates a situation in which a large-scale study becomes difficult to conduct and vulnerable to misinformation.

A third issue relates to definition. This is perhaps the most complex reason why the research on blended learning lags behind that of fully online courses. There are many forms of blended learning but a generally accepted definition does not exist. One school's blended is another school's hybrid, or another school's mixed-mode. Furthermore, the issue is not just one of labels but also of the lack of agreement on a broad versus a narrow definition. Without a clear definition, blended learning is perceived as some nebulous combination of online and face-to-face instruction.

Without administrative systems in place for identifying blended learning courses and without a widely-accepted definition or taxonomy, collecting data on blended learning becomes difficult. At the same time, there is a belief that colleges and universities are not doing enough to use the available technologies to engage students in meaningful explorations of content and curricular materials (Florida, Kaimal, Oblinger, and Blessing, 2003; Rogers, Oblinger, and Hartman, 2007). Marc Prensky (2001) initiated the popular “digital natives versus digital immigrants” thesis that hypothesizes a disconnect in the way younger and older generations use technology. In education, students represent the younger “native” generations who are most comfortable in using technology while older faculty are the “immigrants” struggling to use it. However, while young people might be using technology in greater numbers than adults, especially for social activity, the quality of its application to education is unknown. Furthermore, many college faculty are not adverse to technology and a case can be made that faculty are actually more knowledgeable and use the technology more effectively for educational purposes. However, the point is well-taken that colleges and universities need to do more to engage students and online technology may be one of the mechanisms that will foster this engagement.

Beyond engagement, online learning is also seen as an important means of access for students who otherwise have difficulty attending traditional face-to-face programs. While physical distance and geography were the initial incentives for colleges to offer online courses, many of which grew out of well-established distance learning programs at institutions such as the Penn State World Campus and the University of Maryland University College, time and convenience have also evolved into major factors for the expansion of online learning. Colleges, especially those for whom *access* to an education is a part of their mission, started developing online courses and programs as a convenience for their traditional students. The Allen and Seaman studies (2007) referenced earlier substantiate this phenomenon in their findings in that community colleges and publicly-financed colleges tend to have the largest online student enrollments and the most prolific online programs. While not all faculty have embraced online technology,

many have developed the skills necessary to teach online and do so as needed. Research suggests that many faculty blend online with face-to-face activities because they see it as beneficial to their teaching (Kaleta, Skibba, and Joosten, 2007; Eaton, 2000). Later adopters of online technology see it as a compromise when faced with the challenge of developing fully online courses, the assumption being that it might be easier to develop parts of courses for online delivery rather than entire courses. Blending also allows faculty to maintain the familiarity and security of some face-to-face contact with their students.

Related to and just as important to this discussion is the role of college and university administrations in encouraging and supporting online instruction. Stemming from government and accreditation agencies, college and university administrations are increasingly dealing with institutional issues and criticisms related to tuition costs, program quality, and student attrition. In an article directed at "presidents, chancellors, other college and university administrators, and trustees" Judith Eaton (2000), President of the Council for Higher Education Accreditation (CHEA), called on administrators to become informed on quality issues related to distance learning. In the article, she goes on to state that:

In the fluid and sometimes volatile environment created by [online] distance learning, we at the Council for Higher Education Accreditation (CHEA)—the national coordinating body for national, regional, and specialized accreditation—struggle to bring some order to the avalanche of information about both distance learning and quality assurance.

Eaton concluded her article with a warning that CHEA as well as the accreditation agencies need to provide more organization and coherence to the "plethora" of information and issues involved with quality assurance in online learning and noted that "the price for misunderstanding ... is very, very high."

It is clear that college and university administrators are pursuing the expansion of online learning opportunities. Most have invested in course management systems such as Blackboard and have established the requisite support structure to maintain technological stability for their online learning activities. Furthermore, increasingly they are providing the necessary leadership in tying online learning to institutional goals and objectives related to the broader issues of student access to education and academic program quality. However, a good deal more needs to be accomplished.

In sum, the current environment in higher education requires a careful consideration of the role of online technology in confronting a number of issues related to teaching, learning, student access, and academic program quality. Of all the opportunities for using online technology, blended learning may be one of the more important pedagogical approaches that can help in this regard, particularly for mainstream higher education. The purpose of this article is to propose a *blending with purpose multimodal* conceptual model for designing and developing blended learning courses and programs.

Defining Blended Learning

Blended learning is not one thing but comes in many different flavors, styles, and applications. It means different things to different people. The word "blended" implies a mixture more so than simply a combination of components. When a picture is pasted above a paragraph of text, a presentation is created that may be more informative to the viewer or reader, but the picture and text remain intact and can be individually discerned. On the other hand, when two cans of different colored paints are mixed, the new paint will look different from either of the original colors. In fact, if the new paint is mixed well, neither of the original colors will continue to exist. Similar situations exist in blended learning. The mix can be a simple separation of part of a course into an online component. For instance, in a course that meets for three weekly contact hours, two hours might take place in a traditional classroom while the equivalent of one weekly hour is conducted online. The two modalities for this course are carefully separated, and although they may overlap, they can still be differentiated. In other forms of blended courses and programs, the modalities are not so easily distinguishable. Consider an online program that offers three online courses in a semester that all students are required to take. The courses meet for three consecutive five week sessions. However, students do a collaborative fifteen-week project that overlaps

the courses. The students are expected to maintain regular communication with one another through email and group discussion boards. They are also required to meet face-to-face once a month on Saturdays where course materials from the online courses are further presented and discussed and some sessions are devoted to group project work. These activities begin to blur the modalities in a new mixture or blend where the individual parts are not as discernable as they once were. Add to this the increasing popularity of integrating videoconferencing, podcasting, YouTube videos, wikis, blogs, and other media into class work and the definition of blended learning becomes very fluid.

In 2004, the Alfred P. Sloan Foundation funded an invitation-only workshop on blended learning. An important aspect of this workshop was to develop a working definition of the term “blended learning”. The participants in this workshop had difficulty in formulating a simple definition of blended learning and the discussion alternated between a broad versus a narrow definition. Gary Miller, Associate Vice President for Outreach, and former Executive Director of The World Campus, the Pennsylvania State University, described a lengthy process at his university which resulted in a definition containing five variations of "blended learning" environments (Miller, 2005). In the broadest sense, blended learning (see Figure 1) can be defined or conceptualized as a wide variety of technology/media integrated with conventional, face-to-face classroom activities. However, several workshop participants wanted to focus on a narrower definition that centered on an online component that replaced seat time in the conventional classroom (see Figure 2).

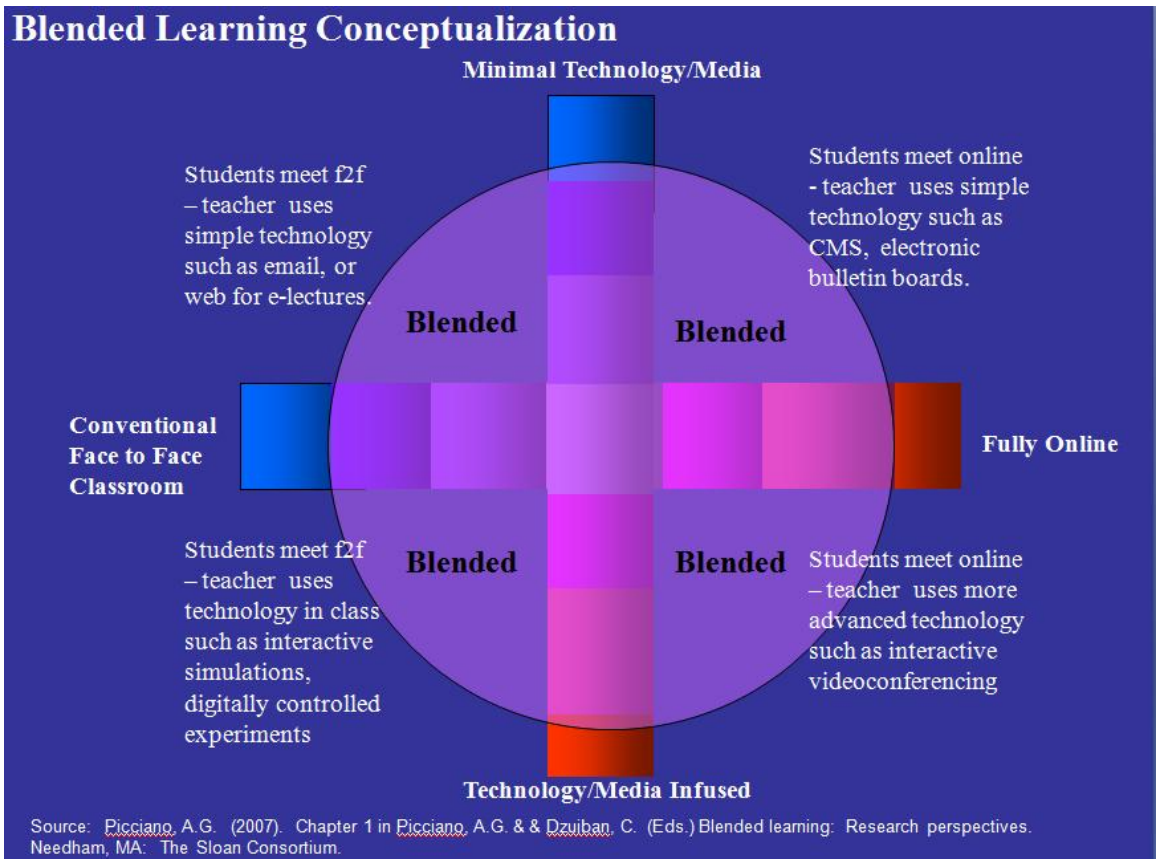

Figure 1: Broad Conceptualization of Blended Learning

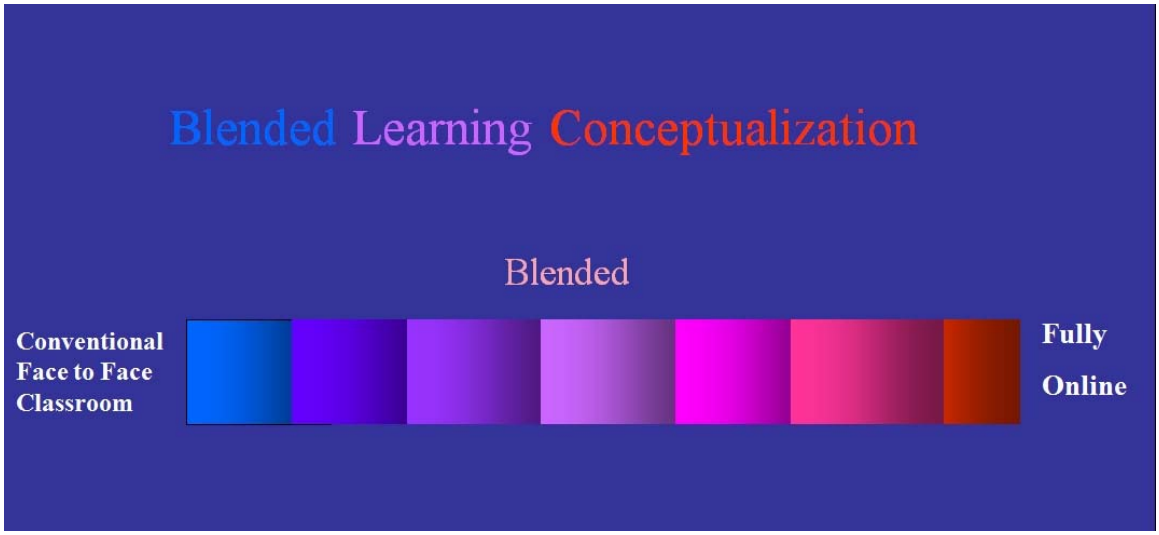

Figure 2: Narrow Conceptualization of Blended Learning

The issue of a broad or narrow definition was discussed extensively and t he two core elements (online and face-to-face instruction) were deemed critical to blended learning. One year later at a second invitation-only workshop, the following definition of blended learning was adopted by the participants:

1. courses that integrate online with traditional face-to-face class activities in a planned, pedagogically valuable manner; and
2. where a portion (institutionally defined) of face-to-face time is replaced by online activity (Laster, Otte, Picciano, and Sorg, 2005)

This definition serves as a guideline and should not be viewed as an absolute, limiting declaration. Also, while it was developed to refer specifically to courses, it also can apply to entire academic programs.

The Generations

Earlier reference was made to the generational differences in American society related to the use of online technologies in daily life. The younger generations (millennial – digital natives) use these technologies for a substantial amount of their social and informational activities. The older generations use these technologies less so. Table I provides a brief description of the four latter major generations of the 20th century.

Table 1: The Generations of the 20th Century

Generations of the 20th Century*

Name	Years of Birth	Current Age
G.I.	1901 – 1924	79 – 102
Silent	1925 – 1942	61 – 78
Baby Boom	1943 – 1960	43 – 60
Generation X	1961 – 1981	22 – 42
Millennial (Generation Y)	1982 – 2002	0 – 21

Source: Howe, N. & Strauss, W. (2000). Millennials rising: The next generation. New York: Random House Inc.

As stated earlier, a concern is that as the millennial generation enters college in greater numbers, faculty will need to (or should) adjust their teaching to accommodate technology-savvy students (Florida, Kaimal, Oblinger, and Blessing, 2003; Rogers, Oblinger, and Hartman, 2007). The higher education community is well aware of this and has taken steps, albeit not as fast as some proponents would like, of adjusting by making greater use of online technologies (as evidenced by the 3.9 million students enrolled in online courses), investing in course management systems, and expanding and converting library holdings to electronic media. However, while the millennials will be enrolling in colleges in greater numbers, the demographic evidence indicates that they will not represent the vast majority of students for many years to come.

Table 2: Total Fall Enrollment in Degree-Granting Institutions by Age

Age	1990	1995	2000	2002	2005	2010	2014
Total	13,819	14,262	15,312	16,612	17,350	18,816	19,470
14 to 17 years	177	148	145	202	201	216	215
18 and 19 years	2,950	2,894	3,531	3,571	3,705	4,067	3,951
20 and 21 years	2,761	2,705	3,045	3,366	3,456	3,848	3,845
22 to 24 years	2,144	2,411	2,617	2,932	3,143	3,384	3,686
25 to 29 years	1,982	2,120	1,960	2,102	2,374	2,724	2,913
30 to 34 years	1,322	1,236	1,265	1,300	1,290	1,399	1,573
35 years plus	2,284	2,747	2,749	3,139	3,181	3,178	3,287

Source: U.S. Department of Education, National Center for Education Statistics. (2006). Digest of Education Statistics (NCES 2006-030).

Table 2 provides student enrollments by age from 1990 through 2005 and projections through 2014. In examining this data closely, it is obvious that older students (25 years plus) make up a sizable percentage of the total student population and will continue to do so for the foreseeable future. In 2005, 40% percent of the higher education student population was 25 years and older, and almost 60% was 22 years and older. Whether seeking advanced graduate degrees, completing undergraduate programs from which they dropped out when they were younger, upgrading professional and job skills, or simply being interested in life-long learning and intellectual growth (a major phenomenon that started in the latter part of the 20th century), Americans of all ages have been and will be engaged in higher education. The phenomenon of the non-traditional (older) student started in the 1950s with the G.I Bill of Rights and the inclusion of returning World War II veterans in higher education. It has continued unabated ever since. In many college classes, especially in large public institutions and community colleges with diverse populations, students continue to represent a broad spectrum of age groupings. This lends credence to an instructional delivery model that is designed to address a variety of needs, personality types, and learning styles rather than specifically targeting a particular segment of students.

Personality Types, Learning Styles and Cognitive Science

Volumes have been written on the merits of the many theories dealing with learning styles. No attempt will be made in this short article to summarize this body of work; however, some discussion is necessary since the concept of learning styles is fundamental to the idea of blending with purpose.

Student learning can be influenced by many factors. One of the more significant factors is an individual's personality. Carl Jung (1921) posited that individual personality types influence various elements of human behavior including learning. Jung's theory focuses on four basic psychological dimensions:

1. Extroversion vs. Introversion
2. Sensation vs. Intuition
3. Thinking vs. Feeling
4. Judging vs. Perceiving

While each unique dimension can influence an individual learning style, it is likely that learning styles are based on a combination of these dimensions. For example, a learning style might include elements of extroverted, sensing, feeling, and perceiving personality dimensions. Readers might be familiar with the Myers-Briggs Type Inventory (MBTI) which has been used for decades to assist in determining personality types, including how they relate to student learning. The MBTI is based extensively on Jung's theories and has been used to predict and develop different teaching methods and environments and to predict individual patterns of mental functioning, such as information processing, idea development, and judgment formation. It can also be used to foretell patterns of attitudes and interests that influence an individual's preferred learning environment and to predict a person's disposition to pursue certain learning circumstances and avoid others. Lin, Cranton & Bridglall (2005) remind us that much of the work of Carl Jung and the MBTI is applicable to learning environments, whether face-to-face or online. For example, the extrovert may prefer active, highly collaborative environments while the introvert would prefer less interaction and less collaboration. This suggests that instruction should be designed to allow both types of individuals - the outgoing social organizer as well as the introspective reflective observer - to thrive.

One of the better-known theories on learning styles relates to the "multiple intelligences" work of Howard Gardner (1983). Gardner's work posits that intelligence is not a singular entity but consists of multiple entities used by individuals in different proportions to understand and to learn about the world. Gardner has identified nine basic intelligences: linguistic, logical/mathematical, spatial, musical, bodily kinesthetic, interpersonal, intrapersonal, naturalistic, and existential (see Figure 3). The implications of this theory are significant and lead to a recommendation of instruction through multiple modalities, allowing learners to engage in ways they prefer by way of their interest or ability, while also challenging them to learn in other ways that are not as well-related to their preferences, interests, or abilities. Gardner's work also addresses the common concern that too much of teaching and learning is linguistically-based (reading, writing, speaking) and that the other intelligences are underutilized.

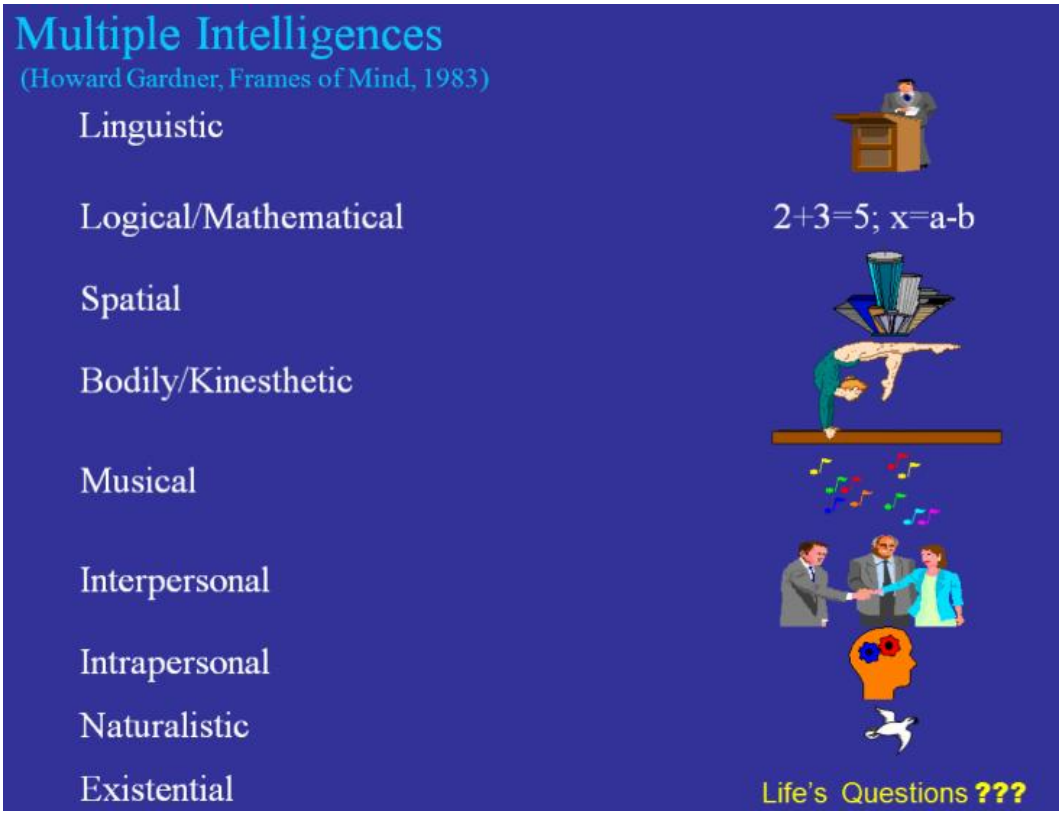

Figure 3: Howard Gardner's Theory of Multiple Intelligences

More recently, cognitive science has begun making major contributions to the learning styles literature. Interdisciplinary in nature, cognitive science draws from psychology, biology, neuroscience, computer science, and philosophy to try to understand the workings of the mind as well as cognitive development which forms the foundation of learning and knowledge acquisition. Much of the research in cognitive science and learning styles is increasingly being influenced by physiological research on brain function. This research suggests that students learn in different ways depending upon a number of factors including age, learning stimuli, and the pace of instruction. It also suggests that learning is a dynamic process that may evolve and change from one classroom to another, from one subject to another, and from one day to another (Willingham, 2008). Finally, cognitive science supports the concept that multiple intelligences and mental abilities do not exist as yes-no entities but within continua which the mind blends into the manner in which it responds to and learns from the external environment and instructional stimuli. Conceptually, this suggests a framework for a multimodal instructional design that relies on a variety of pedagogical techniques, deliveries, and media.

Blending with Purpose: The Multimodal Model

Figure 4 depicts the *Blending with Purpose* model that derives from the discussions above on blended learning technology, generations, personality types, learning styles, and cognitive science. It recommends that pedagogical objectives and activities should drive the approaches that faculty use in instruction. It also suggests that blending these objectives, activities, and approaches within multiple modalities might be most effective for and appeal to a wide range of students. The model presents six basic pedagogical objectives/activities and approaches for achieving them. It should be a given that other objectives can be added where appropriate. The most important feature of this model is that instructors need to carefully consider their objectives and understand how to apply the technologies and approaches that will work best for their students. A quick review of the objectives used in the model and their concomitant technology will be helpful in understanding the overall model.

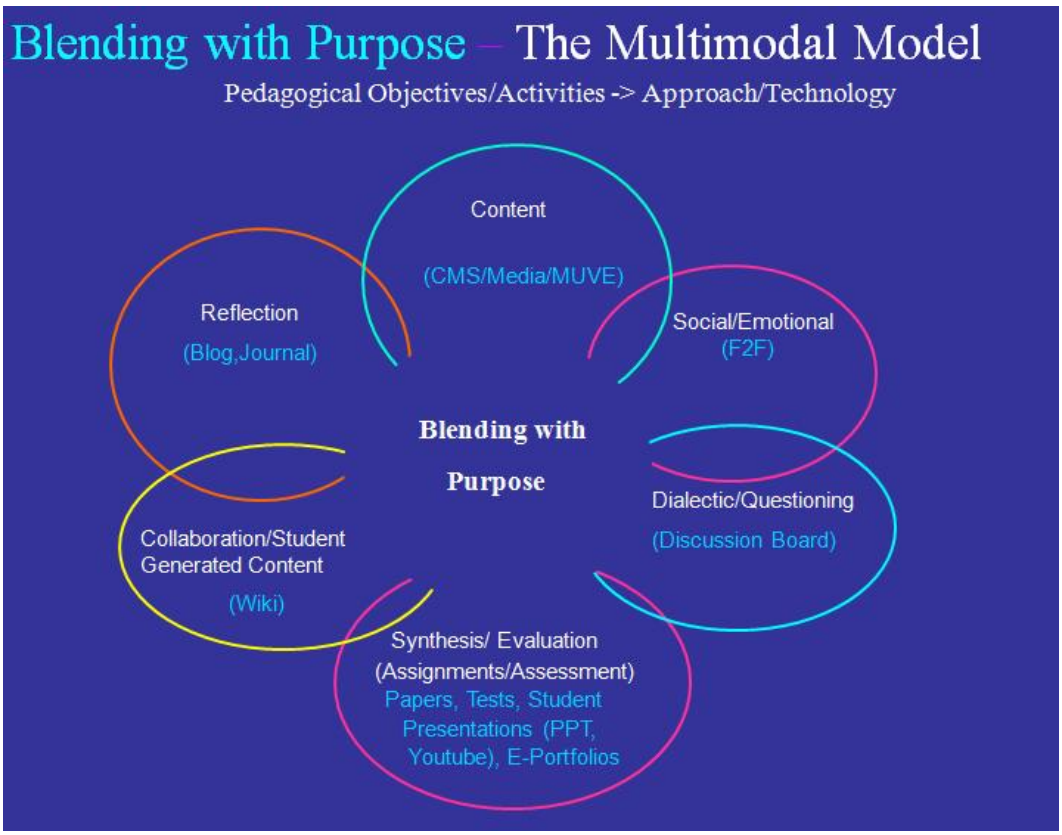

Figure 4: Blending with Purpose: The Multimodal Model

Content is one of the primary drivers of instruction and there are many ways in which content can be delivered and presented. While much of what is taught is delivered linguistically (teacher speaks – students listen; or teacher writes – students writes), this does not have to be the case either in face-to-face or online environments. Certain subject areas such as science are highly dependent upon using visual simulations to demonstrate processes and systems. The humanities, especially art, history, and literature, can be greatly enhanced by rich digital images. Increasingly, course management systems such as *Blackboard* or *Moodle* provide basic content delivery mechanisms for blended learning. CMS software easily handles the delivery of a variety of media including text, video, and audio. Multi-user virtual environments (MUVEs) and gaming are also evolving and playing more of a role in providing instructional content. In providing and presenting content, the *Blending with Purpose* model suggests that multiple technologies and media be utilized.

The *Blending with Purpose* model posits that instruction is not always just about learning content or a skill but is also about supporting students ***socially and emotionally***. Perhaps more readily recognized for younger K-12 students, social and emotional development is an important part of anyone's education. Faculty who have taught advanced graduate courses know that the students, even at this advanced level, frequently need someone with whom to speak, whether for understanding a complex concept or providing advice on career and professional opportunities. While fully online courses and programs have evolved to the point where faculty can provide some social and emotional support where possible and appropriate, in blended courses and programs this might best be provided in a face-to-face mode.

Dialectics or questioning is an important activity that allows faculty to probe what students know and to help refine their knowledge. The Socratic Method remains one of the major techniques used in instruction, and many successful teachers are proud of their ability to stimulate discussion by asking the "right" questions that help students think critically about a topic or issue. In many cases, these questions serve to refine and narrow down a discussion to very specific "points" or aspects of the topic at hand and are not meant to be open-ended "anybody can say anything at anytime" activities. For dialectic and questioning activities, a simple to use, threaded electronic discussion board is as or more effective than most other approaches. A well-organized discussion board activity generally seeks to present a topic or issue and have students respond to questions and provide their own perspectives, while evaluating and responding to the opinions of others. The simple, direct visual of the "thread" also allows students to see how the entire discussion or lesson has evolved. In sum, for instructors wanting to focus attention and dialogue on a specific topic, the main activity for many online courses has been and continues to be the electronic discussion board.

Incorporating ***reflection*** can be a powerful pedagogical strategy under the right circumstances . There is an extensive body of scholarship on the "reflective teacher" and the "reflective learner" (Dewey, 2004; Schon, 1983). While reflection can be a deeply personal activity, the ability to share one's reflections with others can be most beneficial. Pedagogical activities that require students to reflect on what they are learning and to share their reflections with their teachers and fellow students extend and enrich reflection. Blogs and blogging, whether as group exercises or for individual journaling activities, are evolving as appropriate tools for students reflecting on their learning and other aspects of course activities.

Collaborative learning has been evolving for decades. In face-to-face classes, group work has grown in popularity and become commonplace in many course activities. Many professional programs such as business administration, education, health science, and social work rely heavily on collaborative learning as a technique for group problem solving. In the past, the logistics and time needed for effective collaboration in face-to-face classes were sometimes problematic. However, with email and other electronic communications some of these logistical problems were alleviated. More recently, wikis have grown significantly in popularity and are becoming a staple in group projects and writing assignments. Furthermore, unlike group work that typically ends up on the instructor's desk when delivered in paper form, wikis allow students to generate content that can be shared with others during and beyond the end of a semester. Papers and projects developed with wikis can pass seamlessly from one group to another and from one class to another.

Finally, perhaps the most important component of the model is ***synthesizing, evaluating, and assessing*** learning. CMSs and other online tools provide a number of mechanisms for assisting in this area. Papers, tests, assignments, and portfolios are among the major methods used for assessing student learning and are increasingly being done electronically. Essays and term projects pass back and forth between teacher and student without ever being printed on paper. Oral classroom presentations are giving way to YouTube videos and podcasts. The portfolio is evolving into an electronic multimedia presentation of images, video, and audio that goes far beyond the three-inch, paper-filled binder. Weekly class discussions that take place on discussion boards or blogs provide the instructor with an electronic record that can be reviewed over and over again to examine how students have participated and progressed over time. They are also most helpful to instructors in assessing their own teaching and in reviewing what worked and what did not work in a class. In sum, online technology allows for a more seamless sharing of evaluation and assessment activities and provides an on-going record that can be referred to over and over again by both students and teachers.

The six components of the model as described above should blend together in an integrated manner that appears as seamless as possible for students. As mentioned earlier in this paper, blending should be more a mixture of different colors of paint to create new colors or new learning environments than cutting and pasting visibly separate combinations of images, text, and other media or material. Furthermore, not every course must incorporate all of the activities and approaches of the model. The pedagogical objectives of a course should drive the activities and hence the approaches. For example, not every course needs to require students to do group work or rely on reflective activities. Finally, beyond examining individual courses, faculty and instructional designers should consider examining their entire academic program to determine which components of the model best fit which courses to cohesively serve overall programmatic goals and objectives.

Conclusion

The purpose of this article is to examine a blending with purpose multimodal conceptual model for designing and developing blended learning courses and programs. A blended learning model was presented that suggests that teachers design instruction to meet the needs of a variety of learners. Specifically, the *Blending with Purpose: The Multimodal Model* recognizes that because learners represent different generations, different personality types, and different learning styles, teachers and instructional designers should seek to try to use multiple approaches including face-to-face and online technologies to meet the needs of a wide spectrum of students. Furthermore, it posits that a major benefit of multiple modalities is that they allow students to experience learning in ways in which they are most comfortable, while challenging them to experience and learn in other ways as well. Finally, critical to this model is the concept that academic program and course goals and objectives drive the pedagogical approaches and technology used, and not the other way around.

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On Offering a Blended Cell Biology Course

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Abstract

This article describes not only the development of the first blended science course at the University of Wisconsin-Milwaukee, but also the development of a committed blended learning instructor. The redesign of a face-to-face cell biology course to be offered in blended format is described. Examples of activities in the initial offering of the course are presented, with emphasis on how in-class, homework and home-study activities were integrated. The benefits, successes and limitations encountered in the class are discussed, with a summary of future intentions. A key conclusion drawn from the experience is that science instructors faced with covering massive content need not worry about sacrificing content in blended courses. Properly managed, all content can be covered. What's more, the blended format provided more opportunities for student engagement and active learning than the traditional face-to-face (F2F) version of the course.

Introduction

It has been suggested that the integration of web-based and face-to-face (F2F) learning has the potential not merely to enhance learning, but to "transform higher education" (Garrison & Kanuka 2004; Bonk & Graham 2005). This tale of personal revelation supports the validity of pedagogic transformation in a blended science course.

I was a traditional F2F instructor in the Biological Sciences Department at the University of Wisconsin-Milwaukee (UWM). My recurring teaching responsibilities include introductory biology for majors and a gateway cell biology course. Several years ago I introduced a student response system into the former, large enrollment class in an effort to increase student participation and attendance. This technology involves students using a hand-held keypad, or *clicker*, to answer multiple choice and true/false questions projected on a screen. Clickers are increasingly being adopted because they can engage *all* students in a class with the material, with each other, and in collaborative, discursive learning (Mazur, 1997; Beatty, 2004)… and because students enjoy using them (Bergtrom, 2006; Kaleta & Joosten, 2007).

A few years ago I had the good fortune to become associated with the Learning Technology Center (LTC) here at UWM, where one of my first tasks was to introduce clickers to my colleagues. At the same time, from my new LTC colleagues I began to hear about hybrid courses and blended learning, another instructional strategy being increasingly adopted in higher education (Bonk & Graham, 2005; Allen & Seaman, 2005; Vignare, 2007) and at UW-Milwaukee. However, I quickly found out that there were no blended courses being taught in my department, or indeed, in any science department at UWM.

Deciding to teach a Blended Cell Biology Course

A faculty development workshop on teaching hybrid, or blended courses was being offered by my colleagues at the LTC last year (Learning Technology Center, 2006). I signed up, mostly out of curiosity and because my association with the LTC allowed me the time to do so. I had a hard time believing,

however, that I could offer a content-rich science course while giving up lecture time. Not only was I a traditional 'face-to-facer' by profession, I was also a skeptic about blended learning. I saw its potential in 'softer' disciplines that rely on student discussion of ideas, but doubted its efficacy in a course with a 1500 page textbook chock-a-block full of 'essential facts and concepts'. Nevertheless, I decided that I would develop a hybrid cell biology course with the goals of:

1. freeing up classroom space in response to the demands of upward enrollment pressures,

2. reaching out to non-traditional students (single parents, working parents, etc.) who would benefit by not having to attend school as often,

3. retaining or salvaging as much high quality substance and content from my traditional cell biology course as I could, while cutting F2F class time in half,

4. incorporating pedagogically sound student engagement and collaborative learning activities into both the online and F2F portions of the class.

Developing the Blended Cell Biology Course

It is an axiom of active learning that students encouraged to think critically about new information acquire more and deeper knowledge than passive recipients of information (Dewey, 1916; Ausubel , 2000). The trick, of course, is how to make engagement happen. Penner (1984) proposed that instructors incorporate inductive as well as deductive problem solving into the classroom. This would seem to be a perfect stratagem for learning science. Other techniques suggested to capture or sustain student interest include: a) connecting class material to current events or other aspects of students' lives (Penner, 1984); b) assigning short writing exercises (Ruhl et al., 1987); c) introducing collaborative problem-solving exercises into lectures (see Denman, 2005). These and other techniques shown to be effective in bringing active learning into science classrooms are reviewed by Handelsman et al. (2007).

The original F2F Cell Biology course incorporated weekly text readings, on-line quizzes and 3 summative exams. The latter were worth 75-80% of the final grade (approximate values here and below result from variable extra credit opportunities). I began my course redesign, or 'backwards design' (Wiggins & McTighe, 2000) in the LTC workshop, where I floated ideas on how to engage students in learning cell biology at home, and thought about how to integrate online assignments and other homework with classroom activities. The plan was to make at-home and in-class activities as interactive and as collaborative as possible. The course that finally emerged started with 28 students and met for 75 minutes once a week. It included the following key components:

At Home/Online:

- Weekly text and pre-recorded lectures (about 50 minutes' worth, modularized).
- Weekly online quizzes to assess whether students had read the assigned text pages.
- Periodic (6) online discussions in which students wrote and responded to each other's exam-style questions.
- Periodic (4) online discussions in which students played word association games.
- Two 1-page papers and one 4-page paper relating newsworthy cell biology events to course content, intended to promote scientific literacy.
- One online summative exam.

Face to Face:

- Discussion of student-submitted *muddiest points* submitted on index cards.

- Weekly in-class PowerPoint[tm] presentation engaging students in collaborative problem solving using *clicker exercises*.
- Weekly *index card assignments* involving problem/case-study discussion and solution.
- Two in-class summative exams.

It should be apparent from these lists that the blended course incorporates more assessable exercises than the original F2F version of the course. I like to think that this melding of learning and assessment into single activities is the deeper meaning of the term *blended learning*. An important consequence of increasing the number of assessable activities in the blended format is that major summative exams that used to be worth 75-80% of the original F2F course grade were now worth 50% of the final grade. The remaining 50% came from additional formative, low-stakes assessments tied to the interactive exercises. Examples of the latter are discussed below.

Some Examples

At home/online and F2F activities were interwoven or linked to provide integration and continuity in the course. For example, the start-of-class discussion of several students' muddiest point submissions focused on problem areas from the homework. At home, the online quizzes connected the pre-recorded voice-over PowerPoint[tm] presentations with text readings, all intended to prepare students for F2F activities. The F2F interactive lecture presentations were designed to continue where the pre-recorded modules left off, and guaranteed integration of at-home and F2F activities. To better illustrate how F2F course components were continuous or integrated with homework and online assignments, let's look at a few specific examples.

A. *At Home/Online*

1. *Voice-Over PowerPoint[tm] Modules* : A sample video clip (in its imperfect audiovisual glory!) can be found by clicking here. Complete modules ran 10-25 minutes, 3-5 of which were assigned each week. They covered essential course content, chunked into topics and in some cases, sub-topics. All were posted directly to the server of our course management system (Desire-to-Learn, or D2L) or as links to files stored on a UWM-sponsored server. Based on tracking usage in D2L, every student accessed virtually every module, some more than once.

2. *Discussions* : Discussion forums are typically used by instructors to assess students' ability to examine two or more sides of an issue, to deliberate and offer judgments and opinion; in other words as a vehicle for training students how to find and evaluate knowledge in a discipline. In the sciences, there are many opportunities to explore topical, provocative and even controversial issues (e.g., intelligent design *vs.* the science of evolution, ethical issues underlying genetic testing, the spread of genetically engineered crops into the general food supply, etc). While I may design discussions around these issues in the future, I wanted my first ones to reinforce and expand students' understanding of course content.

In one discussion, I asked students to write their own test questions and to respond to questions posted by others. In the other, students were placed into different groups, each provided with an independent list of terms or expressions related to topics that were being covered in a given week. Within each group list, I picked one term/expression and used it in a model sentence *that was not merely a definition* or simple description of the term. Within each group, and on a first-come-first-served basis, a student in the group picked one of the remaining terms and wrote a second sentence connecting his/her term to mine; the next student in the group had to write a third sentence connecting his/her term to that of the first student, and so on. A PowerPoint[tm] detailing instructions for each Discussion Forum and Topic can be seen at Discussion Instructions.

3. *Writing Assignments* : Two short (1 page plus citations) and one long (4 page plus citations) papers were assigned. Consistent with the sense that students appreciate seeing the "relevant use of knowledge" (Bransford et al. 2000), these papers required students to ferret out popular press/online

reports on newsworthy topics in cell and molecular biology. The 1-page papers were worth 1% each; the 4-page paper was worth 3% of the total course grade. Here, taken from our D2L course website are instructions for one of the short papers:

*Write a 250 word, double spaced one page paper on the **recent synthesis of a complete microbial genome**. Sources cited can be on a separate page. For 1 point of extra credit (applied to your final grade), answer the following questions:*

a) What did the researchers do?

b) How did they do it?

c) What is to be gained by knowing their results? That is, what is the value (social and/or scientific) of the research?

The instructions for the longer paper were more detailed:

*The ability of sunlight to stimulate vitamin D synthesis in skin is well known, as is the fact that dairy products are a good dietary source of the vitamin. Recent studies show that people who live in northern regions (places like Wisconsin!) suffer vitamin D deficiency during the winter months. **Recent reports have been published implicating vitamin D (cholecalciferol) as a "cure for all that ails you", and a longevity booster to boot!** The articles suggest that you will live a longer and healthier life if you take vitamin D supplements, especially in winter. Is it possible that a vitamin long associated with bone development can have so many other beneficial effects? The skeptic in you would suspect these reports and common sense would say check with your doctor before increasing your vitamin supplement intake. The scientist in you would ask some questions...*

Write a 1000 word double-spaced (four-page) paper on vitamin D. Sources cited can be on a separate page. For 3 points of extra credit (applied to your final grade), answer the following questions:

a) What kind of molecule is vitamin D

b) What are the molecular effects of vitamin D (How does it affect target cells)?

c) How does it work on bones?

d) What are some of the medical conditions that vitamin D is supposed to remedy?

e) What would be the effects of taking too much Vitamin D? How much would be considered too much?

f) Pick at least two 'life-shortening' medical conditions that investigators claim are aggravated by vitamin D deficiency and that seem to have been 'cured' by vitamin D replacement therapy. What is the best cellular and molecular explanation for how vitamin D might be affecting these illnesses or conditions? Your answers should provide details of a known or hypothetical pathway for the response(s) of different cell types to vitamin D.

g) After you have done your reading/research, do you think that the recent claims for vitamin D are justified?

In addition to increasing scientific literacy, an obvious goal of assigning papers is simply to give students practice in writing. While spell-checking was required and decent grammar was appreciated, the essays were not assessed beyond readability and whether the listed questions for each assignment were addressed. The easy-to-follow instructions on what to cover were the basis of assessment rubrics. The

rubrics allowed efficient grading of the papers (click Rubric to see an example), and equally important, led to acceptable submissions from most students.

4. *Muddiest or Clearest Points* : Students were routinely reminded to address upcoming readings and assigned tasks by recording these on index cards (see slide 2 in Sample Index Card Assignments), which were due at the start of the next class. Altogether the Muddiest Point cards were worth ~5 % of the total course grade.

B. *Face-to-Face*

1. *Muddiest or Clearest Points*: I typically scanned and chose a few (3-5) *muddiest point questions* to discuss with the whole class. My contribution was to guide the discussion, and if necessary, provide the correct answer! The submissions were not graded, but were awarded participation points (see above).

2. *Clicker Presentations using PowerPoint*^{tm}: These are the F2F lecture presentations. To see a sample learning object taken from an in-class PowerPoint^{tm} presentation, click receptor kinase. The sample is typical in that it includes animations of cellular processes. The clicker question engages students in interpretation of experiments or the elaboration of hypotheses. The activity is collaborative as well as interactive, inviting discussion before or after initial responses. Most clicker questions aim at developing students' deeper understanding of course content, modeling how science is done rather than simply presenting content as facts to be memorized. Clicker participation was worth a maximum of 10% of the course grade.

3. *Index Card Questions:* Slides with problems or experimental scenarios were included from time to time during in-class PowerPoint^{tm} presentations. The problems were designed around work assigned before the F2F session, but that was reinforced in class. Some of these exercises confronted the common discomfort many students have with quantitative exercises. Others tried to remedy the fact that most students in introductory science classes have had little experience in interpreting data. Click Sample Index Card Assignments to see some examples. Slides 3-6 in this link are from an F2F presentation on energy and catalysis. This exercise requires both calculation *and* interpretation. Slides 7-9 require interpretation of an experiment on muscle contraction combining biochemistry and electron microscopy. Slides 10-13 include animated normal and cancer cell behavior in an experiment to be interpreted. The last example (slides 14-15) asks students a question taken from their textbook that leads to an understanding of bacterial antibiotic resistance. For each of these exercises, students were encouraged to collaborate by discussing the problem, and were then required to submit written responses in their own words. While each of these assignments were graded for correctness, they were low stakes assessments, worth in aggregate ~5% of their total course grade.

Successes, Surprises and Limitations

By semester's end I had presented all of the content I had hoped to cover, thanks in large part to the pre-recorded lectures. Using the text plus recorded lectures, the potential exists to cover even more than a minimum of content, certainly more material than I could hope to present in a traditional F2F lecture. Finally, the 28 students in this blended course achieved raw (unadjusted) exam scores ranging from 63%-66% on 3 summative exams. This is similar to the 35 students who took comparable exams in an earlier traditional F2F version of the course (60%-66%). Though anecdotal, this observation is consistent with studies suggesting that online and traditional F2F learning are equally effective (Vignare, 2007), at least when objectively assessed on summative examinations.

A pleasant surprise was the great flexibility in instruction modes permitted by the blended format. I was away from campus for several weeks. Out of necessity, I supplemented the typical blended program with an additional voice-over PowerPoint^{tm} per week and several low-stakes post-quizzes to cover my absence. The fact that the raw performance on the final exam (which covered the period of my absence) was similar to scores on the first and second exams suggests that learning was not diminished during this

period. Equally significant, students were not critical of this period of fully online learning on course evaluations. On the contrary, most students saw value in most of the components of the course, including online assignments. Click What did you like about this course? to see student responses that illustrate this point.

Nevertheless, there were some limitations in the course design:

1. By reserving a 'last bit' of content from each topic for in-class presentation, some of the interactive exercises and group-learning activities were too narrowly focused on only a small part of the content.

2. Because of the need to 'complete' a specified amount of content coverage during an in-class lecture, some students felt that there was not enough time to do justice to the index card exercises. Others complained that overall, there were too many online and homework assignments. Click on How could the course be improved? to see typical student comments about the course workload.

In response to my own and student concerns, the following mix of changes will be implemented in the next offering of the blended cell biology course:

1. Text reading assignments will be accompanied by voice-over PowerPoint^{tm} presentations of ALL course content

2. F2F time will be devoted exclusively to interactive, collaborative and engaged student learning that use clicker and index card problems or case studies, with more time for completion. These exercises will more broadly address the weeks' readings, viewings, quizzes, etc. already completed at home.

3. There will be fewer crossword puzzles, and the number of online discussions will be reduced in number by ~60%. This should significantly reduce concerns about homework overload.

The Transformation

Delivering a quota of necessary content is a key goal in introductory courses where a canon of basic knowledge demands attention. My conversion from a traditional face-to-facer to a committed blended learning instructor came with the realization that blended learning did not restrict coverage in my Cell Biology course. On the contrary, narrated PowerPoints^{tm} and assigned readings ensured that the content quota was covered, while weekly quizzes ensured completion of the weekly viewings and readings. If anything, these techniques make it possible to expand the range of coverage in the future.

All of the interactive F2F and online activities not only reinforce content, but promote the problem solving skills that are so much a part of the practice and understanding of science. They were also, by definition, cognitively formative assessments. Consequently, students had multiple opportunities to earn course credit (~50%) by demonstrating a capacity to discuss, make connections, extrapolate, think critically, interpret data, etc. My discovery that I could explore and develop pedagogies to facilitate interactive, in-depth learning, even as I met my goal of substantive content/concept coverage, turned what began as an academic exercise into a truly worthwhile investment of time and effort in course redesign!

Acknowledgements

The UWM Learning Technology Center is a nationally recognized resource for blended and online course design, strategic planning and instructional materials. I want to thank my colleagues in the Center for their excellent workshop and the follow-up encouragement and assistance that led to the successful development of the first blended science course on our campus.

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The Saga of Two Professors Co-Teaching a Blended Course

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Abstract

This is a serious, but somewhat light-hearted, description of ***what*** and ***how*** two rather senior, and rather seasoned, professors approached a blended course (even though their self-interests were heavily involved), and a summarization of their "lessons learned" including some how-to suggestions.

The Situation

This is a serious, but somewhat light-hearted, description of ***what*** and ***how*** two rather senior, and rather seasoned, professors approached a blended course (even though their self-interests were heavily involved), and a summarization of their "lessons learned" including some how-to suggestions.

Our professors - the authors in this case - had used up all but three credits each that the university would allow them to teach in any one year. Unfortunately, the university only offered six credit courses. These two were facing the possibility they would each "leave three credits on the table," and this meant a few thousand dollars they needed to live in their accustomed life style. Fortunately for them, they had several unique skills and a myriad of other talents (they state this here for the record, but they do it with great modesty). They were exceedingly familiar with the courses in their program - they could, and had, taught several of them. One of the pair had many semesters' experience teaching on-line courses in this program, while the other one had about an equal amount of experience teaching blended courses; therefore, it seemed they could pair in some way to co-teach a blended course. Their respective qualifications in the on-line and face-to-face environments were supported by the generous praise and evaluations they had received from their prior students. One Program Director in the program had a "supply and demand" problem - there were more students wanting the blended course than there were local instructors available to teach it. Our intrepid professors had the answer - one blended course co-taught by two instructors; one would handle the on-line portion and the other would deal with the in-classroom portion. Six credits, two professors, sharing the load (and the money).

Description of the Program

Our two professors teach in the University of Maryland University College's (UMUC) MBA program. Although this particular program is just now approaching maturity, it has been in existence for nearly ten years. It began as a totally on-line, distance learning program, designed for working adults regardless of their geographic location. Students enter the program in cohort groups and, for the most part, stay together in these cohorts through graduation.

There are seven, six-credit courses in UMUC's MBA program, plus a one-semester orientation for entering students who have not taken the GMAT or GRE. The courses are:

- The Manager in Organizations and Society
- Managing People and Groups in the Global Society
- The Economics of Management Decisions
- Managing Projects, Operations, and Information Systems
- Marketing Management and Innovation
- Managing Global Business
- Managing Strategy in the Global Marketplace

Our intrepid professors teach the marketing course (the fifth one down in the list above). As you will see, they have had lengthy careers in both business and academia qualifying them for the subject. (See the later "**Who Are the Instructors and What Did They Bring To the Table?"** section and their bios).

Recently, there has been a growing student demand for MBA courses with a face-to-face component, in addition to the usual on-line version. Although UMUC still calls these versions "hybrids," they are truly "blended" courses. Initially, there were five face-to-face sessions in a thirteen-week, six-credit, blended course. This was coupled with approximately the same amount of on-line work as the students in the totally on-line courses had. For the Fall, 2008 term, the MBA program shifted to ten-week sessions, retaining the six-credit format. In this format, a blended course would have four face-to-face classroom sessions. These blended courses are all taught locally in Maryland, near UMUC's parent location. As a result of this demand, the need for "local" instructors has also grown.

Why Was There This Problem?

UMUC's Graduate School's policy holds that their professors may not teach more than 30 "on-load" credits, plus 15 "overload" credits, annually. Simple mathematics shows that one cannot maximize his/her income when teaching six-credit courses with a 45-credit limitation without leaving three credits "on the table." As stated above, accompanying the professors' desire to maximize income, the program faced an increasing demand for blended courses locally. The Program Directors were busy hiring local instructors, but the demand outstripped the supply. (Aside: Isn't that a good marketing line?) The Program Directors became willing to innovate in order to meet the demand, but they had to maintain the quality of classroom instruction.

At the suggestion of our two professors, the Program Director for the Marketing course agreed to a co-teaching arrangement in order to staff a blended course to be delivered at UMUC's Dorsey Run location (a suburban area near the Baltimore-Washington Marshall International Airport). Even though she was at the point of extremis, the Program Director also saw a unique opportunity to both staff a course with experienced instructors and to try a different approach (this was also fortunate for our professors).

A Wee Bit of Background

As mentioned earlier, the two professors have experienced the teaching environment at several levels for several years. They both taught in this particular program for five or more years. And both had experienced team teaching or co-teaching with differing amounts of success! It’s well that we briefly discuss these experiences.

The department encourages newly-hired instructors to first co-teach with experienced instructors. In these co-teach situations, they receive some guidance from their Program Director, but they are pretty much left to their own devices as to the division of labor. Professor Boyle's first co-teaching colleague proposed

(and eventually mandated) that they divide the course 50-50, with one taking the first half of the semester, and the other taking the last half. There remains some question as to what the one instructor would be doing while he was "off-duty." According to Dr. Boyle, this arrangement proved to be relatively unsatisfactory for both instructors and the students. The transition had flaws, and evaluations by the students were marginal.

Dr. Blank's experience had some similarity and some differences. He and his co-teacher divided the course 50-50, but the division was along the lines of the two instructors' self-determined strengths. In addition, they divided the grading of each assignment between themselves, although they guarded to insure neither of them graded the same student more than 50% of the assignments. They felt quite comfortable with this experience, to the point they presented a paper on it. (Ross, Evanchik, & Blank, 2002).

Basic to Blank's experience was his and his colleague's need to be continuously involved with the students and their learning. As a result, he read the students' postings and discussions weekly and, generally, read all papers even though his colleague graded them; his co-teacher did the same. Blank said, "I felt I worked as much - if not more - co-teaching this course than I would have had I been the sole instructor, and for only half pay."

Summation: Drs. Boyle and Blank entered into this co-teaching arrangement with some concerns about coordination, transitions, grading, and division of labor. Since this was a blended course, its very nature created a natural division of labor - Dr. Boyle would handle the on-line portion, while Dr. Blank would handle the face-to-face portion. Professor Boyle is geographically located in Florida, while Blank is located locally to UMUC in Maryland.

Lessons Learned:

1) When co-teaching, early communication among the instructors and the Program Director is important, but, it is most important between the instructors.

2) All of the "players" need to agree on who is doing **what**, **when,** and **how**.

3) Especially critical to these early decisions are the devices and methodology of coordination; e.g., daily or weekly communication by email or telephone, and the application of other technologies.

4) Each instructor in a blended course needs to maintain continuous involvement with the progress, material, and each student's performance in all parts of the course.

What Is the Course?

Individual efforts: The course, "Marketing Management and Innovation" is an amalgamation of individual and team efforts. In addition to the usual assigned readings in the text books and periodicals (available through UMUC's library database), the students have weekly on-line conference assignments. They are expected to post their own, individualized interpretation of the main topics in the readings, a personalized example as to how these main topics are applied within their own organizations and professions, and then read and comment on the postings of their peers. In addition, all students are expected to prepare an individual paper in which they generate ideas for new products or services that are innovative, complete a New Product Screening Matrix, select the best-rated product/service from the list, and comment on how their proposed product/service would progress through the New Product Development process.

Team efforts: Teams of 4-6 members are assigned at the beginning of the term. They are expected to begin organizing themselves immediately (since this course is number five in the students' experience,

and they generally remain within their cohort sections to this point, organizing for team work is very easy). They develop a Team Work Plan (TWP) for the completion of their team's marketing plan (a semester-long project). Although the TWP is not graded, a Faculty Assistant (FA - more on her and her role later) consults with each team as they build these plans, answers questions on the assignment, and ensures that each team basically conforms to its plans.

Semester-long project: Each team is assigned a semester-long team project to develop a marketing plan for an innovative product/service (selected from the individual team members' suggestions). Each week, teams are responsible for completing a corresponding section of their marketing plan. Although individual team members may be assigned certain management and editing tasks, all team members are collectively responsible for understanding and preparing materials for this assignment. In a blended section, the teams also make an oral presentation of their marketing plans. Therefore, Dr. Blank would observe and grade that portion, and both professors would read, grade, compare grades, and come to an agreement on the teams' marketing plans.

Case work: In the blended class, two in-class case discussions are assigned. Each student is responsible for participating and contributing to these discussions. Blank initially planned to have the 4-6 member teams conduct stand-up, oral presentations of the assigned case questions. The teams encountered so many procedural questions and concerns during their preparation for this activity that Blank revised the assignments to be a general class discussion of the cases. In addition, two student sub-teams are provided with two separate questions related to the case to be answered and submitted on-line. Individuals' grades for each case analysis are a combination of their participation in the class discussion and the analysis submitted by their sub-team. Since the case work is a combination in-class and conference assignment, Professor Blank would be the lead for grading both portions.

Who Are the Instructors and What Did They Bring to the Table?

At the time of their collaboration, both Drs. Boyle and Blank had had many years of teaching experience at several different colleges and universities. It was difficult for a Military Academy and a Naval Academy graduate to collaborate during the week preceding the Army-Navy football game, but they overcame this problem without causing any long-term damage to their relationship, or impacting the class and the students in any way. They had taught the Marketing course in UMUC's MBA program several times. Blank had also taught the MBA orientation course, plus other courses in the MBA program. In addition, they brought extensive experience from careers in the private sector. Finally, they were past-nominees for UMUC's Stanley Drazek Teaching Excellence Award.

Each instructor in UMUC's MBA program has a Faculty Assistant assigned to him or her. However, an FA may be assigned to two or more instructors, or have responsibility for two or more sections with the same instructor. In Drs. Boyle and Blank's blended section, Ms. Tara Camp was the FA. Fortunately, she had been the FA for both of them during previous terms. As mentioned above, Ms. Tara's primary responsibility was to work with each team on their TWPs. In addition, she was also a valuable resource to the students since she is a recent graduate of the program and has experienced problems and frustrations similar to what they have.

Summation: The two instructors and Faculty Assistant make up a formidable team to co-teach a blended course. But, more importantly, they bring the knowledge, skill, and ability to pull it off.

Syllabus and Setting-Up the Course

As mentioned previously, the syllabus for this course includes four in-class, face-to-face sessions spread over a ten-week term. Due to the need for similarity and continuity among the various sections of the marketing course, each of the approximately eighteen instructors teaching the course uses the same text book, assigned readings, and syllabus. However, there are some differences between the syllabi for the blended and the fully on-line versions of the course. For example:

- During the first scheduled week of the course, the blended sections meet face-to-face where they discuss the same material the on-line students discuss in the conferences. The blended section instructors also spend some time on introductions and orientation to the course. UMUC's MBA program utilizes student-cohorts; therefore, by the time students get to Blank and Boyle, they pretty-well know each other and are cognizant of their peers' strengths and weaknesses. In addition, the teams have an opportunity to interface and start their organizing during this first session.
- The case work is scheduled during back-to-back weeks for the on-line sections while there is a one-week gap between the two cases for the blended sections (in order not to have blended sections meeting face-to-face during two consecutive weeks).
- Blended section teams make oral presentations (using PowerPoint slides) of their marketing plans during the last week of the term while the on-line sections submit written versions among with their slides.

Largely because of the number of sections of this course, the format and structure of the on-line WebTycho classroom is basically "fixed" for all instructors, including those teaching blended sections. UMUC uses a proprietary computerized classroom, WebTycho, for the on-line portions of their classes. WebTycho is similar to BlackBoard. However, each instructor has a limited degree of latitude, especially with some administrative aspects. Prior to this co-teaching experience, Boyle and Blank had exercised this latitude in their own separate ways. This caused them some small measure of consternation. For example, Blank was of the habit of placing several administrative information conferences in the same on-line area with the weekly conferences. Boyle, however, placed these in a separate area, labeled "Course Content." Certainly, this was not a major disagreement, but an example of a learning experience for the instructors.

Summation: It's universal that instructors will never be satisfied when they must use syllabi which are common to a course or a department. It's part of the "Not Invented Here" syndrome. Blank and Boyle had their problems and concerns with their syllabus, but fortunately, they worked with their Program Director, Dr. Anna Andriasova, to make adjustments to meet their needs. For example, they found the instructions for the first individual assignment (a paper) did not specifically require students to provide an explanation of how they arrived at a particular conclusion. As a result, most students didn't explain themselves, and it left a large hole in their assumptions. [Thanks, Anna.]

Lessons learned:

1) Syllabi must be complete and clear, but they should also be concise. Certain information (especially administrative information) should be packaged in some other location than in the syllabus.

2) Changes to a syllabus once a course starts should only be made in critical situations.

3) Whenever possible, in-class sessions should not be scheduled "back-to-back."

4) Co-teaching instructors must be willing to concede certain points to each other, and go with a compromise that makes the most sense for the students and their learning.

Division of Labor

Conferences: Since Professors Boyle and Blank knew from the syllabus that the conferences were on-line activities, they could best be handled by Dr. Boyle. For this activity, he:

- developed and incorporated overviews and summaries;
- followed the on-going discussion during the week; and
- graded and provided feedback on the conferences.

However, Dr. Blank also needed to follow the conferences in order to be aware of the students' understanding of the subject matter he needed to reinforce during the in-class sessions. He freely participated in the conferences, adding his comments and feedback to both the students' responses and Dr. Boyle's input. In addition, some part of each in-class session discussed the conference material. Therefore, it became incumbent on Dr. Blank to provide grading input back to Dr. Boyle. The conference activity accounts for 35% of each student's final grade for the course.

Interestingly, Dr. Boyle applied some of the tools provided by UMUC to manage the conferences. For example, he used PureVoice and WIMBA Voice Tools for some of the overviews and summaries and individual conference feedback. PureVoice is a readily available, free application whereby recorded audio feedback can be provided to each student individually. WIMBA Voice Tools and Live Classroom are suites of Internet tools that can be used synchronously or asynchronously to bring additional content and variety into the on-line classroom. Dr. Boyle had also planned to use the WIMBA classroom tool for a special follow-up session on a particularly difficult pricing exercise, but student performance on the exercise indicated they did not need additional tutoring.

Papers: There are two papers in the marketing course; an individual assignment paper and the team marketing plan. The innovative idea provided by one member of each team **(**in their individual assignment paper) becomes the basis for the team's product/service marketing plan. Since Dr. Blank observed the teams' oral presentations of their marketing plans, he graded both the individual innovative idea paper and the team marketing plans, which accounted for 10% and 25% respectively, of a student's final grade. However, since Professor Boyle had input into both of these grades, he had to read and comment on both papers.

At the outset, Drs. Boyle and Blank discussed the possibility of using Microsoft's Office Live Workspace (MOLW) to coordinate comments and grading of the papers. Microsoft Office Live Workspace is a Web-based program that helps colleagues collaborate - review and comment - on documents, notes, spreadsheets, presentations, and lists. However, they discovered that using email and Microsoft's Word were sufficient, and they didn't need to learn a new tool. This experience with MOLW pointed out the difficulty associated with learning to use a new "tool" either after a course begins and/or without adequate time.

Cases: Earlier, the Program Director and Professor Blank had decided the cases would be discussed during in-class, face-to-face sessions, and special questions would be assigned to small, two-person teams which would be submitted on-line. The casework portion of each student's grade was fully graded by one instructor – Dr. Blank. Casework accounted for 20% of the students' final grade.

Initially, Drs. Boyle and Blank saw good reason to use WIMBA Voice Tools to provide audio feedback and short whiteboard explanations to the small teams on their responses to the casework questions, but decided ultimately to only use a grading rubric in the interest of time, since the two cases were scheduled so close to each other.

Grading: UMUC's MBA program has a strong policy for the use of grading rubrics. Dr. Blank feels rubrics have effectively eliminated about 90% of students' "push back" and arguments over grading. He believes rubrics reduce the subjectivity in the grading process and also provide a vehicle for conveying feedback to students on their performance. Professors Blank and Boyle used rubrics extensively in teaching this course. In addition to the rubrics providing more definitive feedback to the students regarding their performance on assignments, Blank and Boyle found that the rubrics provided an effective and efficient vehicle for them to coordinate their individual inputs to a student's grade on a piece of their work.

Summation: There is no substitute for experience and planning. Professors Boyle and Blank applied their knowledge of the course material and familiarity with the individual parts to plan what and how they would divide the labor and conduct this course. Even so, they knew both of them would have to be involved in almost all of the activities - one could not "sit back" while the other managed and taught his

particular portion. Their early planning - well in advance of the term beginning - helped to make co-teaching feasible and workable.

Lessons learned:

1) Become familiar with the course - the syllabus, text, readings, assignments, etc. - before planning.

2) Plan and decide on who is to do what, when, and how.

3) Consider using any available technology to facilitate your work and collaboration., but be realistic in the use of tools. If you aren't familiar with a tool, it's difficult to learn it and use it effectively once you've started a course. Do your practice before the course starts.

4) Use rubrics to facilitate the grading of student assignments. They make the job a bit easier.

Coordination

Staying on-top of what's going on, and why: Fortunately, our two professors live in an Internet world! The course they taught is driven through an Internet-based classroom system, WebTycho. A unique component to this experiment was the blending of four face-to-face sessions with on-line teaching, and the utilization of various technological tools to facilitate their co-teaching. Although they could have divided the labor between themselves and managed their individual portions of the course, they felt this was not in the best interests of themselves or the students, so they had to collaborate. Interaction between the instructors and the Program Director never impinged on their activity. However, they faced a continuing challenge of coordination. Drs. Boyle and Blank recognized from the beginning that coordination would make the difference between success and mediocrity.

Professor Blank had improvised a "tool" in the preceding term which he felt had worked well for him. From the syllabus, he developed a daily and weekly to-do list of tasks he either had to or wanted to do to stay on top of the course. Generally speaking, most faculty would probably not need such a tool, but 1) he's a bit O.C.D. about organization, and 2) he occasionally forgets important tasks. He also built this tool for the co-taught course, and then divided it into the tasks he saw for himself and the tasks he saw for Professor Boyle. Although Blank offered this additional coordination tool, it's not known whether or not Dr. Boyle felt a need for it or used it.

During the planning for the course, the two instructors spoke frequently by telephone, and exchanged emails with regularity. Both Blank and Boyle utilized Skype and Professor Boyle has VoIP service. Skype is another readily available, free application whereby two people or a small conference can conduct audio and video communications. Voice-over-Internet protocol (VoIP) is a procedure optimized for the transmission of voice through the Internet or other packet-switched networks. These two applications effectively eliminated the cost of long distance calls. It was during the planning phase they agreed to the division of labor, the usage of technology, and the frequency with which they would interface during the term.

During their planning, Drs. Boyle and Blank planned to communicate weekly on Mondays. Although the day-of-the-week is immaterial, as the course progressed they found their Mondays were too full with other activities. Therefore, they talked and planned their activities weekly on an "as needed" basis. During these conversations, they shared notes on their observations and experiences from the previous week; especially related to any assignments graded during that week. Additionally, they discussed their individual plans for interactions with the class during the coming week. Dr. Blank discussed his plans for the face-to-face session for that week, and sought Dr. Boyle's concurrence and suggestions. It was also during these conversations that they discussed problems with individual students and their plans for dealing with them.

Drs. Boyle and Blank obviously depended heavily on email for coordination of the course and their individual portions. This contributed to a couple of problems that required solving early-on:

- Although both instructors maintained primary and secondary email accounts, Boyle and Blank quickly adopted a primary account for email between them.
- Once during the term, Dr. Blank's primary email provider crashed. He informed Dr. Boyle and the students to resort to the secondary account for the duration.

Summation: Coordination between the instructors in a co-taught course can be challenging - regardless of whether it's an on-line, face-to-face, or blended course. In theory, one of the greatest of these challenges could be the geographic distance between them. With Dr. Boyle located in Tampa and Dr. Blank in Maryland, this distance could have been a factor. Blank knew, however, from his prior co-teaching experience (his partner was located in the frozen north of Alberta, Canada), that those challenges could be substantially mitigated when the instructors know and respect each other, consider each other's work loads, and plan ahead.

Lessons learned:

1) Become familiar with the electronic classroom system your organization uses. Learn it, practice, and play around with it.

2) Of course, know the syllabus and the material (oops, this was said before).

3) Learn and use the available technology during your planning.

4) Plan ahead; especially what, who, how, and when various tasks will be done.

5) Communicate frequently to share observations, feedback, and current plans.

Tools - WebTycho, WIMBA, PureVoice, Computer & Projector, and Skype

Distance learning at UMUC is facilitated by an electronic classroom system called "WebTycho" (W/T). W/T permits the instructor to post a) the class syllabus at the beginning of the course, b) frequent announcements (either administrative in nature or instructional), c) narrative or recorded lecturettes and feedback, and d) students' grades on individual and team assignments. Students may post a) questions to faculty, b) responses to assigned questions, c) comments on their peers' responses, and d) their completed papers and projects. In addition, W/T provides a "work space" for teams - a place for them to hold on-line "meetings," and post their individual contributions toward team projects. Dr. Jay Alden, a colleague of Boyle and Blank, introduced and tested the use of Wikis in place of WebTycho for the students to collaboratively develop their market plans. He reported success with this test, saying that Wikis made it "…easy for him to identify the extent of contribution by each team member…." (*Wiki Survey,* Fall, 2008). Drs. Boyle and Blank, of course, fully utilized W/T, as will be seen later in this article.

Although W/T has a chat capability, Professors Blank and Boyle considered using what they considered a more user-friendly two-way, electronic tool - WIMBA. WIMBA's capabilities offered them the opportunity for class discussions with an electronic whiteboard available. The professors expected to use WIMBA when a more difficult concept or problem arose when an in-class session was not immediately scheduled. Initially, they anticipated Dr. Boyle would conduct a WIMBA session with the section to discuss a particularly difficult pricing exercise. He would use the whiteboard capability to demonstrate methodology in a kind of tutorial. UMUC's policy precludes making synchronous on-line class meetings or chats mandatory, so Dr. Boyle or Blank would be obliged to record any such session so students who could not participate synchronously could access it later at their convenience. Fortunately, the students did not encounter any difficulty with this concept, so this WIMBA session became unnecessary.

They also considered, for future reference, the possibility of pre-recording a few WIMBA tutorial sessions for student instruction and remediation on an "as needed" basis. In addition, they considered the future possibility of the FA using WIMBA to conduct feedback sessions with the teams on Team Work Plans and the progress on their Market Plans.

To repeat, Professor Boyle used a free program, PureVoice, for one-way, recorded audio comments and feedback to the students on their weekly on-line conference responses and comments. He had extensive, successful experience with using PureVoice in his prior classes. PureVoice is widely available and very easy to use.

For the in-class sessions, UMUC provided an extremely modern, comfortable seminar-style classroom with a "smart podium," large screen, and electronic projector. The "smart podium" has a permanent-mounted computer with the necessary controls to project any sort of documentation or visuals on CD or flash drive, DVD, or video tape. In addition, through the podium, an instructor has the capabilities to connect his/her classroom with any other classroom in the center and/or other UMUC facilities at other locations. This connectivity, however, is limited to within the UMUC system. At each student's desk location, electricity for a laptop computer was available, while Wi-Fi was available throughout the building.

Early-on, Professors Blank and Boyle felt it was important for the students to understand both instructors were involved in all aspects of the class. They especially decided they wanted both to have a classroom presence during the first and last in-class sessions. In addition, they decided to fulfill their program's technology objective and their own goal to add multimedia and variety whenever possible and feasible. Since the budget precluded Dr. Boyle flying-in from Florida for these sessions, they sought a viable alternative. After conversing with UMUC's Center for Support of Instruction in the Office of Instructional Services and Support, they determined a feasible approach would be a two-way audio and video connection between the classroom and Dr. Boyle using the "freebie" service Skype, an "eyeball" camera, and a headset mike. This required some testing and debugging. During the testing, this worked reasonably well. Unfortunately, on the evening of the first class session, Dr. Boyle became an "audio-only" member of the class. Later, the problem was defined as Dr. Blank's "operator error."

There were limitations to this arrangement. Dr. Blank had to repeat into the microphone any questions or comments in order for Dr. Boyle to hear. When it was appropriate for Dr. Boyle to view individual students it was necessary for the students to come forward to the "smart podium." This was awkward and distracting, at best. Drs. Boyle and Blank believe they should have used a better, more professional-grade video camera and a higher quality microphone in the classroom. The arrangement of an "eyeball" camera and a headset mike only served the purpose at minimal cost. Further, Dr. Boyle was unable to read any projected slides; therefore, any slides had to be emailed to him in advance. For all these reasons, they opted to abort their plans to use this arrangement for the last in-class session when the teams made their oral presentations of their marketing plans. Instead, only Dr. Blank observed the final session. Afterward, he and Dr. Boyle conferred by phone on grading the teams' presentations.

Summation: Technology and physical equipment played a large part in these professors' success with this course. In addition, their varied usage of the equipment provided variety and increased motivation for student participation. HOWEVER, further application of available technology and the introduction of additional technology hold the promise of increasing the efficacy of blended courses.

Lessons learned:

1) Use all of the technology and equipment you have available, and consider adding technological applications if they serve you and help the students to learn.

2) If you can, within budgetary constraints, utilize professional-grade equipment. If there is a "cheap" approach possible, consider if there are concessions that detract from the learning.

3) HOWEVER, be familiar with all of it before you attempt to use it as in the old adage about how to get to Carnegie Hall, "Practice, practice, practice."

Managing and Conducting the Course

Note: Rather than providing a "journal" of the progress of the course, Professors Blank and Boyle condensed their experiences to a synopsis, culminating in a summary and more lessons learned.

1) Before classes begin, the instructors posted a "welcoming" message in the on-line classroom wherein the instructors introduced themselves and provided contact information, start dates, and how to obtain course materials.

2) When the syllabus and course schedule became available to the students, they encouraged the students to read the syllabus and familiarize themselves with the on-line classroom and the instructions therein.

3) Drs. Blank and Boyle emailed the students a weekly "to-do" list each Monday. These to-do lists reiterated the assignments for the week, and reminded the students of impending future assignments and upcoming in-class sessions. Although they felt these to-do lists were unnecessary "hand-holding" for graduate-level students, they found the discussions were better, the numbers of lateness and incompletes were less, and procedural questions were fewer.

4) Prior to the first in-class session – Dr. Blank notified the students as to which team they were assigned to for the market plan project.

5) During each in-class session, Blank projected a prepared PowerPoint agenda - "old business," "new business," and the assignment for the evening. During the first in-class session, Drs. Boyle (via the aforementioned audio connection) and Blank answered questions on the syllabus, the assignments, and grading. In addition, they conducted an "expectations" discussion - their expectations of the students and the students' expectations for themselves, the course, and the instructors.

6) Throughout the course, the students were required to participate in on-line conferences on the readings assigned and specific personal applications of the information in these readings to their business or profession. Dr. Boyle provided extensive and on-going PureVoice feedback each week. Further, he graded the students' conference performance twice during the term. Dr. Blank also followed the on-line conferences each week and freely participated with his own comments and feedback. However, both he and Dr. Boyle had to be careful not to provide conflicting or confounding "messages" to the students.

7) Each student submitted an individual new product/service paper. Professor Boyle had an opportunity to read and comment on these papers, providing input to Professor Blank before he graded them. WebTycho has a "portfolio" feature which permitted the instructor to return a student's marked-up papers with the grading rubric attached.

8) Each team selected a product/service on which to prepare a marketing plan. The teams were asked to complete portions of their marketing plans each week. Ms. Camp reviewed these new additions weekly and provided feedback and consulting to each team. Both Drs. Blank and Boyle also read, evaluated, and commented on these sections frequently.

9) Professor Blank led very active in-class discussions of the two Harvard Business School cases based on assigned case-based questions. In addition, small sub-teams addressed separate case-based questions on-line. Blank graded both the in-class and small-team portions using a rubric.

10) In the final face-to-face session, each team made its oral presentation of their marketing plans. They were required to use PowerPoint slides which they had prepared on flash drives. Following each of their presentations, their peers had the opportunity to ask questions about their product/service and/or their marketing plans. Additionally, teams were required to submit their marketing plans for grading before the close of the term. Blank first graded the oral presentations, including the slides and "stand-up" performances, and then the marketing plans, using a specific rubric. He provided this input to Dr. Boyle for his consideration.

Summation: The possibility always exists in a co-teaching situation that the students are never certain who the instructor is during a particular portion of the course. In addition, they could have concerns about differing standards and expectations between the two co-teachers. Although Drs. Boyle and Blank cannot be certain, they believe such confusion did not surface in this class. Having and using technology in this situation greatly facilitated coordination and both instructors' abilities to be "involved" in all aspects of the course.

Lessons learned:

1) Explore and use whatever technology is available to you. (Again, we said this before. Oops.)

2) Even though one instructor agrees to handle a portion of a co-taught class, the other instructor needs to be actively involved. It's good to have a contingency plan in case one instructor becomes ill, has to travel, or simply fails to complete a task. Fortunately, Drs. Boyle and Blank did not experience any of these dilemmas.

3) Both instructors need to agree on a student's grades on major projects.

4) Feedback on grades needs to be frequent and thorough. Rubrics are a vehicle for removing some grading subjectivity and providing feedback to the students at the same time.

5) Instructors need to maintain continuous communication between them, especially to share what material they covered, what information they told students, and the grades and feedback they provided.

6) Instructors need to encourage students to be familiar with the syllabus and any additional class instructions. Additionally, they need to motivationally reinforce students who ask questions, participate in discussions, and push-back when they have specific concerns.

Conclusion

Although this course went quite smoothly, that is not to say there were no problems between Professors Boyle and Blank. Transitions between in-class and on-line sessions required frequent communication between the two professors. They needed to share "what" occurred during each other's session, and "how it went." This was easier on Drs. Boyle and Blank than it was on their wives who had to deal with the constant telephone calls and Skype conversations, since the two professors both work from their homes.

Professors Blank and Boyle (by now, this is starting to sound like an old vaudeville act) feel they proved that a blended course can be successfully co-taught by two instructors when one of them is locally "on-the-ground" with the in-class sessions and the other is located some distance away and handling largely the on-line sessions. More importantly, they developed some "lessons learned" which should help others who embark on this same type of journey.

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Blended Learning in a Digital World: Writing and Research for the Facebook Generation

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Supporting websites:

http://fhsudaretodream08.ning.com/

http://www.fhsu.edu/communication/MultiMediaCompII

Abstract

Course management systems such as Blackboard provide static, one-way communication for the on-line learner and educator. However, as the Web 2.0 phenomenon exemplifies, today's digital learner needs skills in an interactive, blended web environment. Blogs, wikis, online video, podcasts, and user-generated websites offer ideal pedagogical opportunities for collaboration and innovation in and out of the classroom. As part of an institution-wide effort to better meet digital natives' needs, Fort Hays State University faculty were encouraged to "Dare to Dream" during the 2007-2008 academic year. Utilizing this theme and also implementing the university's Writing Across the Curriculum program, faculty in the departments of English and Communication Studies collaboratively worked on a "writing with video for the web" project. With a deliberate focus on blended learning, this project involved students in English Composition II classes and Multimedia Production classes. The collaborative website was hosted on http://www.fhsudaretodream08.ning.com/. After the students turned in their final projects, all were showcased in a website created using Apple's iWeb application and hosted on the FHSU web server at http://www.fhsu.edu/communication/MultiMediaCompII.

Introduction: Daring to Dream of Engaged Learning

The field of academic production faces radical changes as it moves away from the modern model of education to the post-modern model. The use of digital technology in and out of the classroom forms the groundwork for many of the initiatives compelling this change—whether we address assessment or authentic learning or workforce preparedness. As Tapscott (2009) points out, the net generation (students born 1977-1997) is forcing a change in the model of teaching, from a "teacher-focused approach based on instruction to a student-focused model based on collaboration." At Fort Hays State University, a medium-sized, state comprehensive university in Western Kansas, the need to adapt to this new field of academic production is at the focus of the assessment and review of university-wide programs. During the 2007-2008 academic year at Fort Hays State University, two initiatives compelled faculty members to explore the possibilities of innovative directions for the university, for departments and for our pedagogical practices: FHSU President Edward Hammond's Dare to Dream www.fhsu.edu/dtod and the Writing

Across the Curriculum initiatives. Within this academic atmosphere of innovation, faculty members were encouraged to experiment with new pedagogical practices, to pursue entrepreneurial endeavors related to their disciplines, and to re-envision FHSU as the university of the future. With the goal of engaging students in learning and in utilizing technology as part of FHSU's Mobile Teaching and Learning Program, several faculty members put their research on the post-modern university to work in their classes. Integrating digital technology and writing together proved to be a more than suitable combination, especially with the goal of engaging students in active, real-life communication practices.

One of the primary goals for the Writing Across the Curriculum Program is to use writing as a tool for learning, rather than merely add writing assignments to courses. Digital technology makes it extremely possible to get students involved in the creation of their own web-spaces, enabling them to share their work in class (face-to-face) and online (virtually). Therefore, we, Andy Stanton in Communication Studies and Dan Kulmala in English, took hold of this opportunity to collaborate together on a project that would hybridize the educational experience for our students in a "writing with video for the web project." With a deliberate focus on blended learning, this project involved students in English Composition II classes and Multimedia Production classes. Students in the English Composition II class prepared background information and prepared a written essay on the topic of education. Specifically, English Composition students were to answer the following question: What is education?

Instructors then matched students from both classes, organized them into smaller workgroups (3-6 students in each group), and created an online communication website using http://www.ning.com/, where students could share ideas, post photos and videos, and create an electronic version of the essay. Students in the Multimedia Production class were instructed to work with the English students as "clients" and to help them put their ideas into an interactive audio, video, and web environment. The Multimedia Production students were required to utilize content input from the English Comp II students, in addition to personal interviews with the content team members, and process that information into a multimedia project that showcased the main points of the essay. Students were required to utilize both technical skills by working with the Apple iLife and iWork software suites and creative skills in choosing audio, photography, and video to accompany the projects.

The Project: Learning Across the Curriculum at FHSU

Reading and listening, the passive pedagogical practices of the modern model, no longer form the foundation of meaningful learning—and probably never did. Students learn best by *doing* and by having clearly defined goals established for them, and following the constructivist theory on learning, students gain meaning through engaged learning, interacting socially, and constructing knowledge (Fink, 2003; Jonassen, Howland, Marra, & Crismond, 2007; West & West, 2009). Blended learning practices are particularly suited for these types of educational experiences given that they link the academic with real-world contexts. Therefore, students get the added advantage of learning by connecting the content and practices of the class to a relevant context. For this collaborative project between English Composition and Multimedia Production, contextual teaching and learning were at the core of our educational goals, proving to be an ideal combination giving rich, purposeful objectives for both freshmen-level writers and graduate-level pre-professionals. In this sense, our Learning Across the Curriculum initiative met the goals of theories asserting the benefits of contextual teaching and learning:

As such, according to contextual teaching and learning principles, the role of the instructor is *not* to provide *learning*. The role of the instructor is to provide the *context* in which learning can occur. Contextual teaching and learning engages students in significant and relevant activities that help them connect their academic learning to real-life situations and problems. (West & West, 2009, p. 22)

For reasons obvious to these two collaborators, placing an emphasis on the context of course material combined with the practices of blended learning (instructor-led training, e-learning and web-based training, professional development, and digital, media enhancement) would create an ideal educational experience for our students and our own development as educators.

Goals and Objectives for English Composition 102

After having taught English Composition for nearly fifteen years—from graduate school to the present—I (Dan Kulmala) found myself being "worn out" by the typical habits and processes of the English Composition curriculum (and I know that my students, many of them now digital natives of the Internet Age, yearned for something new). The typical routine for English Composition followed this regimen—inscribed, in fact, by a standard departmental syllabus adopted in 1993: one, include a handbook and a standard textbook approved by the department; two, have students read a series of essays on a series of timely issues; three, discuss these issues—as robustly as possible; four, have students draft and write their essays; five, peer-edit the essays; and six, grade the essays. Repeat four or five more times throughout the semester. Frankly, I felt trapped in a Camus-like, "Myth of Sisyphus" program of study, a kind of academic suicide by pedagogical repetition. Other than my own professional need for change, I was convinced that my own students were not receiving a genuine, authentic education that taught them what it means to write a meaningful document for a defined audience and specific purpose.

I found academic salvation in three initiatives: FHSU's Dare to Dream, Writing Across the Curriculum, and the Mobile Teaching and Learning Program. Having taken charge of the Writing Across the Curriculum initiative, I was immersed in the current research on not only Writing Across the Curriculum programs but also the move toward post-modern models of learning and educating. As a digital immigrant, I knew that I needed to connect to the digital natives in my classroom, and this connection would only happen if I released myself from the modern forms of education and journeyed into the infinite digital space of the post-modern. Moreover, what I was researching made tremendous sense as I thought about the digital culture given birth by the Information Age. In his book *The Digital Revolution and the Coming of the Postmodern University*, Carl A. Raschke (2003) outlines this cultural shift in the academic landscape:

The most important shift of course is what we might term the unframing of educational content. In the past what one learned was always dependent on the availability of scarce curricular media and personnel (e.g. specialized textbooks, high-powered professors, the amenities of "student life"). The scarcity of content went hand in hand with professional privilege and authority. In short, knowledge was always "framed" by the special status of those who managed it. (p. 96)

Education always has engaged in the practice of information management, but a particular education model still dominated my pedagogical practices, and I needed to "unframe" myself from the old models and do something I had always avoided—embrace technology. Yet, I did not want to use technology just for the sake of using it in the classroom. Too often, I found that educators used Blackboard and such just to help organize material, and I wanted to use technology in a manner that would engage students in learning the class material, not just shuffle it around.

FHSU's Dare to Dream and its Mobile Teaching and Learning initiatives opened up an atmosphere free for innovation. In this sense, I was given the opportunity to explore the possibilities of changing the curriculum, even if the experiment failed, without having to navigate the usual academic channels and bridges and walls to get any alterations to my curriculum approved. Combining this spirit of academic freedom with my attendance at the Educause ELI conference held in San Antonio, Texas in 2008 prepared me for blending the learning experiences for my students, using digital technology, establishing learner outcome goals, and connecting learning to a real-world context. Andy Stanton, someone I had worked with in Faculty Senate and on the Writing Across the Curriculum Program, proved to be the ideal collaborative companion, given his teaching a Multimedia Production course and his knowledge of digital technology and learning. He and I had been engaged in many conversations about the future of education and had shared our thoughts about the post-modern university. Given that our students are emerging from this cultural shift, we decided that we would put our students in the roles of defining contemporary education.

When I imagined this assignment and this project, I had several goals in mind. For example, peer-editing and collaborative activities are routinely a part of many English Composition courses. However, with rather limited experience editing texts, most English Composition students typically follow the basic

instructions provided by an instructor rather than having any real invested interest in offering suggestions for the improvement of a peer's document. I wanted the students to have a genuine interest in helping their group members improve the quality of their essays. I also did not want the students to merely use technology as a mechanism for shuffling and submitting their essays. Having become a convert of the ideas of the post-modern university, I wanted my students to use technology for active engagement in their work, their ideas, and their learning. Therefore, the following outlines the primary goals I had in mind beyond writing a strong essay when I devised the Define Education at FHSU assignment. Students would:

1. research their topic with a sense of committed engagement to accomplishing a task;
2. find value in their project by devising a theory they have an invested - economically and professionally - interest in;
3. work collaboratively with others with a unified sense of purpose;
4. creatively consider alternative ways to express their definition of education beyond writing an essay; and
5. write with a hyper-attentive sense of audience as they considered effective means by which to communicate their definition of education.

Putting this assignment on the Ning site and collaborating with members from another class created the context that allowed for the goals outlined above to be actualized. On the very first day my students signed up for their Ning accounts, they took on the roles of professionals who had a project to complete, and I found them actively seeking me out to get ideas about how to accomplish their task. We began with the assignment I offer in the box below:

The Assignment: Dare to Dream: Education at FHSU

Due: Friday, March 28.

Objective: Define education at FHSU and relate that definition to your ambitions, your desires, and your dreams about your future.

Approach: I suggest that you try the following as a way to get started.

1. Start with **inquiry and analysis.** Look around the FHSU campus. What do you see? What is the purpose of some of the buildings? Where are particular departments and colleges located? What type of academic and social life exists in these educational spaces?

2. What is the atmosphere of the FHSU campus? How would you define this place by specific, concrete activities or places on campus? Try to provide a picture of the student and faculty demographics of FHSU. Put faces and activities and places to the academic community of FHSU.

3. Explore the FHSU website. What information do you find about FHSU? What is the mission of FHSU, for example? What types of organizations exist at FHSU that appeal to you?

4. **Beyond** the FHSU campus. What is happening in America and around the globe that might be contributing to the academic community of FHSU?

5. **Document and describe** what you observe. Put what you **analyze** into your own words. How do you see the information and evidence you have collected?

6. **Think critically** about your observations. Ask questions that will compel you to go **beyond** your observations. Based on you observations, what kind of place is FHSU? What does FHSU offer you for

your future? Where is FHSU taking you? How will FHSU get you there?

7. **Reflect upon** your questions and your answers to those questions. What is the purpose of education for America today?

Requirements: I will expect each group to hand in the following:

1. A series of notes that documents the information you have gathered. These can be notes that respond to the **Approach Section** outlined above. Regardless, I want to see information you have gathered and your thoughts about that information.

2. A short essay that provides your group's definition of education along with supporting evidence that helps to prove that your thesis is correct. Your group should consider very specific items of support for your essay. So use what you see around you to define education at FHSU

3. **Dimensions:** This essay should be at least 800 words in length, double-spaced with one inch margins, and typed at a 12-point font. I expect a creative title that gets to the heart of your thesis and a title page. I will be grading on content, grammar and punctuation. And I will be looking for a significant, insightful lesson–either stated or implied.

The assignment forced us, students and instructor, to get out of the "boxes" of education, which meant that we left the classroom to explore the FHSU environment to gather material. Some students borrowed cameras and digital video cameras from the FHSU Learning Commons to use in their capturing visual evidence of education at FHSU—interviews with students and faculty, video of activities on campus, and just random shots of the campus itself. I found myself encouraging my students to ask many questions, especially about the purpose of their education and the physical place of their educational environment. Soon, their essays reflected a mixture of their history with education and the changes they experienced, culminating in expressions of what they desired out of their education.

Goals and Objectives for Multimedia Production

Students enrolled in the multimedia production class were all communication studies majors, with a majority emphasizing in advertising and public relations. These students needed to acquire a combination of a) technical skills to operate the Apple iLife & iWork software; b) small group communication skills to work with clients; and c) social networking skills to incorporate an online social network into a professional work setting.

By working collaboratively with the English composition classes, the multimedia production students would have the experience of establishing work relationships with students they had never met before and also working with students from different cultures. Students enrolled in classes from both departments were from the United States and China. This provided not only challenges in communication skills, but in understanding each other's cultures.

Technical Skills Utilizing iLife & iWork: Familiarize students with iTunes, iMovie, iWeb, iPhoto, Keynote and Garageband

Rather than making students focus on both content creation and technical skill mastery, the partnership between the English class and the communication studies class generated the content. The English composition students were to provide the communication studies students with their thoughts on the future of higher education at Fort Hays State University.

The communication studies students were able to focus on the theories of multimedia production and the technical aspects of the Apple iLife software to best communicate the ideas written by their peers in the

English class. Students evaluated which aspect of the Apple iLife software would work best for their clients. Many students created an entire website utilizing iWeb, iPhoto, Keynote, Garageband, and iMovie, while other students decided to best visualize their "clients'" needs by creating a video in iPhoto, Keynote, and iMovie.

Small Group Communication Skills: Increase small group skills to achieve a common goal

Part of the instruction of advertising and public relations theories and skills must include small group communication theory. Most advertising and public relations professionals work in small group settings, either in an agency or an in-house communication department. The communication studies students were also challenged by the fact that very little face-to-face interaction would occur between the groups as the English students' classes met on Mondays, Wednesdays and Fridays and the communication studies class met on Tuesdays and Thursdays.

Social Networking Skills: Establishing and utilizing a Social Networking Site for professional use

Today's college students are very familiar with social networking sites (SNSs) such as Facebook and MySpace, but very few have taken the steps to see the value of social networking in the communication industry. Nie's study of online relationships (2001) showed past critics of the Internet have claimed use of the technology decreases a person's interpersonal skills (as cited in Ellison, Steinfield, & Lampe, 2007). In contrast, Wellman, Haase, Witte, & Hampton (2001) suggest that the use of the Internet and SNSs can help with a person's interpersonal connectivity and organizational involvement. With the introduction of the Ning site, I was able to show students the ease of setting up a site and how they could communicate with their clients online and also have the "luxury" of having their online discussions' documents in the Ning site.

Outcomes

Every collaborative project has positive and negative elements. Overall, the multimedia students enjoyed working with the English Composition students and indicated it was helpful to them to have the Ning site as a way to not only communicate with the other members in their workgroup, but also to be able to upload photos, videos, and music selections during the course of the project and once the project was finished.

Even so, various multimedia students reported they had difficulty communicating with their peers in the English Composition class even with the use of the Ning site. They reported some of the students felt a disconnect with the project because their role was to merely write the content and not to help with the construction of the video or website. For future projects, we believe students from courses in both departments should be evaluated on their collaboration and communication throughout the entire project, not just at the beginning. Also, not all of the students' essays from English Composition were posted on the site. Instead, students posted versions of their essays as they took them apart for the multimedia project. In the future, we decided that we would be certain to include the essays so that we would be able to follow the progress from page to multimedia stage.

The English Composition students soon learned that an essay is NOT necessarily the best way to convey a message to someone putting together a multimedia production of their ideas. The essays allowed for the expression of their ideas, but did not allow for a framework or a direction for putting together a kind of script for the multimedia design of their definition of education. Consequently, students found themselves engaging in the act of analysis and synthesis, taking their essays apart and re-organizing the information so that the students in the Multimedia class could get a better idea about how to portray their definition of education. Using the Ning site proved particularly helpful for this process as the students shared their ideas about how to re-construct their essays into a multimedia format. As a result of this needed modification of the essays, students often remarked that the Ning site itself was turning into the best

source of information by which to present and communicate a digital definition of education for our contemporary culture.

One of the most exciting collaborative experiences came from the group formed by Nancy, Noel, Lauren, Julianna, and Chelsey. Not only did these students work well together by communicating their ideas through the Ning site, but they also provided rich commentary about the nature of the project. During one session, I asked these students about their thoughts on digitized communication and learning. Excitedly, they began chatting about how immense the possibilities are for learning in this manner. Being able to share ideas and comments with others in and out of their classes about the shape and direction of their project was high on their list as a main reason for continuing to learn through a social networking arena of education. The possibilities for learning, according to these students, are limitless. An additional topic of discussion convinced me of the benefits of collaboration and blended learning. The same students began discussing that digitized learning is global learning. In this group, the students came from a variety of global cultures: Mexico, China, and the US, and yet, they were all communicating together on a common topic that interested them: the future of education.

Obviously, these students learned academic skills that go beyond the traditional classroom. Digitizing and blending their classroom experience sparked active engagement in key academic skills like inquiry, analysis, problem-solving, critical thinking, reflection, and audience perception by breaking down the walls of the typical, modern educational experience. The students, then, were liberated to learn by engaging in a model of education that follows a real-life, work-related experience. For me as an instructor, I felt liberated, and I became convinced that all English Composition courses should be taught in this manner. Using e-Portfolios and cross-listing courses is the future of English Composition. Over this past year, I have led the way for the use of e-Portfolios in the classroom, eagerly asking to be assigned four English Composition courses for both the fall and spring semesters. Currently, faculty members at FHSU are piloting an e-Portfolio database supported by the New York Times Knowledge Network, called Epsilen. This global learning system allows for all the social networking capabilities of a Ning site, plus the addition of maintaining a student's academic progress through rubric-based learning. Such digitized global learning systems allow for even greater blended learning experiences than the traditional classroom setting since instructors can share course material and activities with anyone connected to the Epsilen environment. Therefore, during the 2009-2010 academic year I will be cross-listing my English Composition courses with faculty at the University of New Hampshire and the University of Toledo in blended learning projects.

Conclusion

As more and more learners enter college as "digital natives", the issue of blended learning across the curriculum and utilizing both interpersonal and online communication will become more and more significant. Incoming students will have attended elementary and high schools with one-to-one laptop initiatives, ubiquitous wi-fi access, and constant multimedia message exposure. The traditional model of pedagogy where students sit in a classroom and listen to a faculty member lecture is fading to a more post-modern model where classrooms collaborate together with other classrooms across campus and across international borders. The use of the Internet and social networking sites will help facilitate this new, innovative shift in education. The results of this project help to underscore what many academics and educators are coming to understand about our current culture. Facebook, MySpace, i-Tunes, Twitter, Epsilen and other tools all point to a new term by which to identify what the Internet and digital communication have created: the Share-It Generation. In this rich, ubiquitous environment of learning, the pedagogical practices of blended learning become key methods by which to enhance students' educational experiences through course delivery systems that are already changing the ways in which we work and communicate in the professional world.

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Using Blended Learning to Ensure Consistency and Quality in Multiple Course Sections

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Abstract

The purpose of this paper is to provide stakeholders (academic administrators, instructional designers, instructors, and students) with one university's experience with managing multiple sections of the same course, by using a series of instructional techniques that ensures consistent, high-quality, blended courses. Many universities are tasked with teaching multiple sections of foundational courses to large numbers of students. How do administrators and instructors ensure that each stakeholder's needs and requirements are being met satisfactorily? This paper addresses the issues that arise when trying to satisfying the needs of all stakeholders, the role that blended learning plays, and the strengths and challenges of utilizing blended learning and future considerations. It develops a model that uses five strategies for ensuring course consistency, including personnel structure, communication, course design and consistency, assessment and evaluation, and technological and professional development support. Finally, this paper includes a just-in-time tool (Appendix A) that can be used by administrators to address the challenges of incorporating blended learning.

Background

Since the early 1990s, the University of South Florida's College of Public Health (COPH) has offered undergraduate courses in public health that focused on the introduction of public health and contemporary health science issues. Over the past ten years, more courses were introduced and well-received by its undergraduate students. By 2005, the college began to offer the General Public Health Minor with a variety of available courses. Enrollment soared to over 3,000 undergraduate students per semester, which created a need to offer multiple sections of the same courses. During this time, the administration hired a Director of Academic and Student Affairs to oversee all aspects of undergraduate education. The booming undergraduate program served as a consistent stream of student credit hour funding as well as a potential pipeline of graduate students. However, from a pedagogical perspective, the large number of undergraduate students created challenges of instructor and course inconsistencies.

Since the undergraduate student enrollment increased with each new course, the first challenge for the director was to assess the quality and needs of the instructors. The initial purpose of the undergraduate courses was to create teaching opportunities for the doctoral students within the college. Therefore, the obligation remained to mentor doctoral students in all aspects of teaching principles and methods. Since the number of doctoral students available to teach is unreliable, it was necessary to hire an additional pool of adjunct instructors. Among the doctoral students as well as the instructors, teaching competence ranges from limited to many years of experience. In some ways, it is easier to mentor doctoral students with limited experience than to retrain the seasoned adjuncts to incorporate technology into blended learning courses. However, the issue of competing demands is problematic for both instructor types. The doctoral students have research and course work that consume a substantial amount of their time, while adjunct instructors view teaching as an income supplement to enhance their full-time employment. Therefore, it became necessary for the director to find an acceptable balance between ensuring high quality courses and meeting the time management demands of all instructors.

The second challenge involved inconsistency across sections of the same courses. It was quickly discovered that although the same textbook was being used, the syllabi bore little resemblance across multiple sections of the same course. For example, instructors taught the *Introduction to Public Health* course in such a way so as to minimize their course preparation time. Therefore, in reality the students received a variety of course content that closely matched the background of the instructor, including: HIV/AIDS, environmental health, maternal and child health, etc. Since there were no consistent course materials, each instructor was obligated to create his or her own lecture notes, classroom activities, and exams. Some instructors devoted more time to class preparation, while others invested little energy due to their own competing demands. In addition, because the doctoral students are required to teach at least one semester, they may be less likely to design creative, interactive courses for a one-semester commitment.

The challenges faced by the college were addressed and solved with the incorporation of a blended learning format for the undergraduate courses. Since blended learning uses online teaching techniques to enhance classroom experiences, it solves many of the challenges, while creating consistent, high quality courses across multiple sections.

Literature Review

This article considers blended learning to be the use of online media to help support and organize the activities of campus-based courses. It develops this idea and a model for providing consistency in learning across multiple sections. The blended learning literature is extensive, and has been described by many authors (Vaughan, 2007; Whitelock & Jelfs, 2003).

Vaughan (2007) has provided a good review of the blended learning literature. He does so from several points of view, including administrative, faculty and student perspectives. He found that administrators see blended learning both as a means of improving the institution's reputation, and also as a way to reduce operating costs. Students are able to use blended learning to take greater responsibility, not only to manage their own learning, but also manage their time. Finally, faculty finds blended learning provides a means of enhancing learner-instructor interaction. Perhaps Vaughan's most important finding is that blended learning provides a means of continuously improving courses.

Within the context of Vaughan's findings, we took a look at Dick, Carey, and Carey's (2001) model of instruction, which considers five learning components (pre-instructional activity, content presentation, learning participation, assessment, and follow-through activities). These five learning components helped us in the design of our instructional materials, but in addition to the instructional design aspects of our model, we also needed to consider the administrative and support needs surrounding the teaching and learning process (Gentry, 1994). Thus, our model (Perry-Casler, Srinivasan, Perrin, & Liller, 2008) led us to look beyond instruction and to consider other important aspects of the learning environment. This article condenses this model into five strategies for ensuring success in large blended courses.

Strategies for Success in Undergraduate Blended Learning Formats

The five strategies that were employed to achieve consistent learning outcomes across blended courses consisted of personnel structure, communication, course design and consistency, assessment and evaluation, and technological and professional development support. Even though each strategy is a necessary component, the combined parts achieve the highest quality of undergraduate education in a blended learning format.

Strategy 1: Personnel Structure

From an administrative perspective, it was necessary to hire a director to oversee all aspects of the undergraduate General Public Health Minor. The director created a handbook that provides an excellent resource of information related to university administration and undergraduate policies (Perry-Casler et al., 2008). The topics include: teaching qualifications, contract information, course scheduling, salary information, classroom management policies and evaluation procedures.

The director also identified the need for each undergraduate course to have a course supervisor. A faculty person is assigned this duty as part of his or her annual assignment. Often, the person is given this assignment because he/she developed the undergraduate course or previously taught it. Having the course supervisor handle the day-to-day aspects of a multi-section course ensures that the instructors teach the same material in each section. The course supervisor is an integral component for maintaining the consistency across course sections and the blended learning format makes close supervision easily achievable. All standardized course materials are posted on Blackboard, the course management software. The course supervisor can simply check each section to view the notes, reviews, announcements, assignment instructions, and grades without ever stepping into the classroom. On a few occasions, the course supervisor has alerted the director regarding a potential problem within a course. Prior to the blended learning format, such problems within a course were not discovered until the end of the semester through evaluations.

In addition to the director and course supervisor, the College instituted an Office of Educational Technology and Assessment (ETA). This office consists of a director and several highly-trained instructional designers. Prior to every semester, an instructional designer is assigned to several courses. The instructional designer, course supervisor, and instructors work closely together to create the blended format that best compliments classroom pedagogy. Throughout the semester, the instructional designer maintains all aspects of the technological components of several assigned courses.

Strategy 2: Communication

Communication is the cornerstone of the standardization process and instructor support must be multidimensional. To facilitate communications, the director hosts three instructor meetings per semester. The first of the three meetings is held p rior to the beginning of each semester and allows experienced instructors to give guidance and practical advice to new instructors. It also allows instructors teaching the same course to meet each other, exchange ideas, schedule guest lectures, and provide contact information when unforeseen emergencies occur. The subsequent meetings include round robin discussions of challenges and success stories, plus topics such as classroom management, best practices and teaching techniques, and updates on college and university policies. In addition, professional development opportunities are identified at the university, local, state, and national levels.

From a blended learning perspective, the development of an instructor wiki has become a valuable communication tool that allows people to add to and change any document to create one document with everyone's input. Since the course supervisors often teach a section of the course they supervise, they may create a wiki within their course and pose questions on how to improve the class for upcoming semesters. Giving the other instructors access to the supervisor's section allows for participation in the wiki and fosters a feeling of collaboration for overall course improvement. This method of communication

has many advantages, including facilitating communication between instructors and the course supervisor; compiling useful discussion information on course improvement in one location; enhancing the instructors' investment in the courses they are teaching; allowing instructors to thoroughly contemplate and respond to questions; avoiding scheduling challenges; and providing instructors with an opportunity to utilize a new communication tool that they may not have been familiar with before. The course supervisor has integrated many of the suggestions from the wiki into future offerings of each course.

Strategy 3: Course Design and Consistency

Consistency in course design has been addressed in many instructional design articles (Briggs, 1999; Swan, Shea, Fredericksen, Pickett, Pelz, & Maher, 2000). However, in our case, we faced consistency issues among multiple sections of the same course not only within one session, but also across difference sessions of a course. To combat this problem, the course supervisor drafts a course syllabus using the university-approved undergraduate syllabus template before the semester begins. Using the approved course description, the course supervisor determines the course learning objectives; then a meeting is scheduled with the course supervisor, instructional designer, and instructor to create the course schedules, instructional strategies, and assessment methods. The instructors are welcome to add personal creativity to the classroom portion of a course as long as the agreed-upon syllabus and objectives are followed.

For each newly developed course, the course supervisor and instructors divide the duties of creating the course lectures using PowerPoint slides. For established courses, these duties involve updating the course materials and lectures. After the lecture notes have been developed or updated, the instructors review the lectures, modify the content based on course goals, and discuss the changes with each other until a consensus is reached prior to presenting the lecture. Some instructors choose to record and post their lectures on Blackboard as compressed Flash presentations, podcasts, and PDF handouts for students to review at a later date, while other instructors post only the PowerPoint slides and lecture notes. In addition, instructors are encouraged to develop supplemental classroom activities which are shared with other instructors during the meetings or via email/wiki communications.

Based on previous experience, it was also determined that some instructors are "easier" in their grading and expectations than other instructors. This variation resulted in a variable grade distribution across the multiple sections. To solve this problem, two solutions were devised. First, for each objective assessment, a question pool is created to which each instructor contributes a number of questions. The questions are shared with the course supervisor and the other instructors for editing. The instructional designers post each standardized exam by deploying a fixed number of randomly selected questions from the instructor-approved question pool. Therefore, each individual student receives a different set of questions during an exam, minimizing the chances of cheating. Some instructors have the students take online exams at their convenience while other instructors reserve the computer lab in the building and have their students take the exam during a regularly scheduled class section. The randomized question technique eliminates the instructors' ability to select only the questions that they emphasized in their lectures or to eliminate specific course topics that were ignored, a practice which furthermore demands content presentation to be consistent across all sections. Second, for each subjective assessment, a standardized grading rubric is created that clearly explains the instructors' expectations with regard to students' performance on that assessment. By using these consistent measurements, standardized grading is achieved, and students in different sessions are given the same set of assessments and held to the same standards.

Strategy 4: Assessment and Evaluation

Two methods of assessment and evaluation are important administration strategies used to ensure consistency across course sections. First, the blended learning format offers a unique opportunity to elicit detailed information from students regarding the course. Each semester, the course supervisor and instructional designer create an online student survey that is tailored to each course and asks specific questions about the course notes, assignments, and assessments. These mid-semester surveys are posted in each Blackboard section for completion outside of the classroom, and a small amount of extra

credit is given. The results provide a mid-semester account and allow for early intervention when needed. In addition, unlike the required university evaluation, these results are put to use almost immediately and are not recorded or kept in the instructors' personnel file. The survey data are used to reveal trends in student feedback and guide future decisions on all aspects of course management and content. Second, the course supervisor schedules a time to visit each classroom at least once to observe the instructors' teaching style and provide feedback based on their assessment. Although this observation offers only a snapshot of an instructor's teaching, it allows for a perspective that is not captured in the online surveys.

Strategy 5: Technological and Professional Development Support

A lack of technological support and professional development support continue to be the big challenges in blended-learning courses (Dziuban & Moskal, 2001; Garnham & Kaleta, 2002; Vaughan, 2007). At COPH, multiple approaches were used to meet instructors' needs of professional development and technical support for the course. As new adjunct instructors and doctoral students begin teaching in a blended learning format, the administrative challenge is to ensure a minimum level of teaching competencies within the classroom, as well as online technology skills. This situation creates the need for several types of training. First, although most course management systems allow for the same functionality, community-based adjunct instructors need a quick, in-depth overview of Blackboard. In addition, even though the doctoral students understand Blackboard from the student perspective, they need training related to the instructional side.

These as well as other technology training needs are accomplished by the instructional designers. ETA offers a variety of online Blackboard training modules for easy access and quick learning options, and walk-in access for instructors with an immediate need or limited time to attend the scheduled training sessions and quarterly lunch-and-learn seminars. The goal of ETA is to provide ongoing and consistent technology support for instructors and to enhance and facilitate presentation of course content and student learning based sound learning principles. Second, since the blended learning format maintains a classroom teaching component, it is also important to provide instruction for classroom pedagogy and strategies. The Director of Academic and Student Affairs, in cooperation with the course supervisors, offers an instructor training seminar for all doctoral students as a portion of their mandatory student orientation. Adjunct instructors are welcome to attend. In addition, the doctoral students are encouraged to present several guest lectures during the semester prior to teaching the same course. This technique saves the doctoral students lecture preparation time the following semester and allows them to experience the undergraduate student environment prior to having responsibility for an entire course; and as previously mentioned, the director hosts the instructor meetings for added support.

Lastly, students receive technical assistance via a 24-hour help desk which was established by the ETA staff to provide evening and weekend technical support for online exams. An on-call phone number is provided to students who are taking exams during non-business hours. Technical problems reported are logged and addressed within a 24-hour period and seven days a week by the ETA staff. This log provides valuable information, because technological issues in one section are often an indicator and warning to the instructional designer that identical problems may appear and need to be addressed in other sections of the same course. In addition, by having a continual feedback loop in place between the instructional designers, course supervisors, and instructors, students receive the classroom and online support needed for a high quality of education in a blended learning format (see Appendix A for a checklist).

Challenges for Consideration

Even though the identified strategies facilitate blended learning formats, several challenges persist, including: textbook issues, instructor turnover, technological updates, and budget constraints.

Challenge 1: Textbook Selection

Challenge 1: Textbook Selection

While maintaining consistency across multiple course sections presents a variety of personnel challenges, another issue of consideration is the selection of a new textbook. On the positive side, a new textbook selection initiates course revitalization or a complete redesign that likely improves the overall course delivery and content. On the other hand, textbook changes demand an incredible time investment to create high quality, standardized materials. Although it may be tempting to rely on publishers' instructor materials, the quality of these materials is often substandard and they need to be revised. Therefore, the time-consuming task of creating new, high-quality lectures and assessments must be undertaken by the course supervisor, instructional designer, and instructors. Fortunately, blended learning allows courses to be changed gradually, since the online activities may remain applicable even though the classroom textbook has changed. Also, blended learning formats make the dissemination of new course materials easy, since items are posted into each course section with little effort or time.

Challenge 2: Personnel Changes

Another challenge in maintaining course standardization relates to personnel changes. Since turnover of doctoral students and adjunct instructors is inevitable, course supervisors must always ensure that new instructors are teaching course content in a consistent manner, and have the technical skills necessary to utilize the online components of blended learning formats. Although blended learning formats ensure that similar course content is being utilized, new as well as experienced instructors encounter learning curves when textbooks change, course management systems are updated, technological changes occur, or new university policies are implemented. Since administrative personnel also change, each new director or course supervisor brings policy and program changes.

Challenge 3: Technological Changes

The ever-changing technology forces instructional designers, course supervisors, and instructors to continuously reassess, regroup, and reevaluate the use of technology features in the blended courses, while maintaining a high-quality of instruction in the classroom. While keeping a watchful eye and a willingness to adopt new technological tools and programs into blended learning, the challenge is to find the appropriate educational balance between meeting the needs of the low-tech versus the high-tech users, including administrators, course supervisors, instructors, and students. Although new technology tools can appear to be useful for blended learning formats, a change may be viewed as merely another steep learning curve that requires precious time to conquer, with limited reward for the user. Under the expert guidance of the instructional designers, new technology tools have been incorporated over time, since most users are comfortable and willing to incorporate a few gradual changes into teaching and learning formats (Perry-Casler et al., 2008).

Challenge 4: Budget Constraints

In today's economy, every educational challenge stems from budget constraints. Since the ETA office is self-funded from student technology fees, the College delivers high quality, cutting edge educational technology services without straining the College's budget. Since the incorporation of blended learning formats in the undergraduate courses, the instructor turnover has diminished, thus saving time for the director and the course supervisors and allowing them to spend needed time on other projects. The largest money-saving result of blended learning has been the vast decrease in paper consumption. Lecture notes, course materials, activities, and exams are posted on Blackboard, transferring the responsibility for printing costs to the student. In addition, distributing mobile course content in the form of podcasts provides easy access and flexibility while discouraging students from printing materials. Before the incorporation of blended learning, if every instructor distributed 20 sheets of paper to each student, the College would buy 120 reams of papers per semester plus copy toner and copying time.

Conclusion

Standardized course delivery with consistent learning outcomes remains the primary goal for the General Public Health Minor at the University of South Florida. Blended learning provides strategies and addresses most of the challenges, because it creates consistency of learning, teaching, subject matter, and materials. Since course content remains constant across multiple course sections, the inconsistencies of inexperienced instructors or idiosyncratic materials are minimized. Now that students receive the same content and the same assignments as their peers in other sections, we are able to ensure consistent learning outcomes. Students have the opportunity to choose from a variety of courses as the college is able to offer many more courses due to course standardization. In addition, doctoral students and instructors who are new to teaching find the blended learning format useful, because the added load of developing new materials is no longer an issue.

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APPENDIX A:

JUST IN TIME TOOL: CHECKLIST FOR ADMINISTRATORS TO ENSURE CONSISTENCY IN MULTIPLE SECTIONS OF A COURSE

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Using a Blended Approach to Teach Research Methods: The Impact of Integrating Web-Based and In-Class Instruction

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Abstract

This study explored using a blended format (both in-class and online components) for teaching undergraduate research methods. A Traditional section met in-person twice weekly for 75 minutes (50 minute lecture with 25 minute group work). A Blended section had the same format for the first 4 weeks, but then switched to a single, 75-minute lecture per week with all group activity shifted to Web-based discussions and online homework sets. Comparisons of exam scores indicated no difference on the midterm but Blended students significantly outperformed those in the Traditional section on the final exam. Students in the Blended section also actively participated in online discussions and maintained close contact with the instructor. These results suggest the integration of online components may help improve student performance.

Introduction

Although research methodology is one of the most commonly required courses in psychology programs (Messer, Griggs, & Jackson, 1999), it is also one of the most difficult, feared, and disliked by students (Ball & Pelco, 2006; McGovern & Hawkes, 1986; McVey, 1996; Ward & Grasha, 1986). As a result, many delay taking it for as long as possible which, in turn, creates even greater problems because the information presented in a research class serves as the basis for virtually all of the other courses in the discipline. Understanding material presented in research-based content courses (e.g., cognitive development or motivation) requires that the reader have at least a basic foundation in the scientific method (Berthold, Hakala, & Goff, 2003; Chamberlain, 1986; Lutsky, 1986; Perlman & McCann, 2005; Zablotsky, 2001), and this is precisely why many departments set it as a requirement.

Given this situation, there is a clear need to develop research instruction that results in the improved comprehension of key concepts and processes and also fosters a positive change in student attitudes toward the subject matter (Brems, 1994). A potentially effective way to achieve these goals is through the use of blended instruction. According to the Sloan Consortium definition, blended courses "… integrate online with traditional face-to-face class activities in *a planned, pedagogically valuable manner* [italics added]; and…a portion (instructionally defined) of face-to-face time is *replaced by online activity* [italics added]." (Laster, Otte, Picciano, & Sorg, 2005). This is not simply posting materials or providing supplementary activities on a class website. It is the shifting of significant aspects of a course into the online environment in order to create an integrated system of instruction that capitalizes on the unique and most effective features of each of the settings.

This approach has much to offer us as we search for ways to improve research instruction. Technology-based instruction that provides realistic and relevant tasks and involves students in the production and presentation of information will help to improve student learning (Ball & Pelco, 2006; Driscoll, 2000; Forsythe & Archer, 1997) and foster attitude change about the content (Simonson & Maushak, 2001). This is easily achieved with blended learning. By moving segments of the instruction online, assignments

can be structured to be more relevant, more personal, and less restricted by the time and place of the traditional classroom. Moreover, students can become more active and assume more responsibility for their own learning, in part because they have more freedom to participate when it fits their schedules, but also because they have increased access to a wealth of materials and information via the Internet while they are studying. Additionally, post-instruction discussions, which can provide a means to clear up any errors or confusion and affect student attitudes (Simonson & Maushak, 2001), are easily conducted as immediate, yet asynchronous (not real-time), follow-ups to in-class sessions.

Students in a blended class also have easy and numerous routes for support both in and outside of the traditional classroom. Online course management systems (e.g., WebCT and Blackboard) provide for the use of password-protected and course-specific email, discussion postings, and chat rooms. At the same time, because there is still an in-class component, students are able to have regular, face-to-face contact with the instructor as well as the support of in-class lectures and interaction with fellow classmates. Again, many of these features have been shown to create a greater sense of community and satisfaction, increase motivation, and improve learning (Regan & Knickerbocker, 2007; Twigg, 2003; Woods, Badzinski, & Baker, 2007).

Present Study

The present study explored the efficacy of using a blended format for teaching research methods. Two sections of an undergraduate research methods course were studied. In one, a standard, face-to-face approach was used with students coming to class twice a week for lectures and small group work. They also completed a traditional, independent research project. In the other section, the instruction was modified so that a portion of the in-class time was replaced with web-based activity. The in-class group work used in the traditional section became online homework and discussion items for those in the blended class. Also, the traditional research project was replaced with three smaller projects that capitalized on using Internet-based materials and online discussions. The goal of the study was to see if blended instruction has the potential to improve student learning and whether students would find it an intellectually engaging experience.

Method

Participants

The participants were 63 undergraduate majors in Child and Adolescent Development. They were in enrolled in one of two sections (Traditional: n = 31, with 2 males and 29 females; Blended: n = 32, with 2 males and 30 females) of a 16-week-long research methods course. I taught both sections in succeeding years because only one section of the course is offered per academic year. Although the participants were not randomly assigned to the sections, students were not aware of the online aspects of the Blended course until the first day of class. Therefore, it was not possible for them to self-select in or out of the section prior to that point based on those features. Four students did withdraw prior to the start of classes but no one dropped from the Blended class during the semester. In contrast, 4 students who were receiving failing grades dropped before taking the final in the Traditional section.

Procedure

Traditional section. Students met on campus for a 75-minute-class twice a week for the entire semester. Most class sessions consisted of approximately 50 minutes of lecture followed by about 25 minutes of small group work on exercises that applied the concepts from that day's topics. During group work, I circulated about the classroom monitoring student progress and providing help. After about 15 minutes, I reconvened the entire class and reviewed the groups' answers. Students completed a midterm, a final, and an individual research project.

Blended section. During the first four weeks of the semester, the format for the Blended section was identical to the one used for the Traditional group. The class had two 75-minute sessions per week, each with about 50 minutes of lecture and 25 minutes of group work. However, beginning with the fifth week, several changes took place. First, the class met in-person only once a week and no longer had any in-class group work. Second, in place of the second meeting each week, I gave students an assignment to complete in an asynchronous, online discussion via WebCT. I actively monitored and participated in this activity. Postings were not graded and students were not required to participate. However, I did tell them that inactivity was essentially the same as not coming to class and, as such, could impact their performance on exams. Third, students had to start submitting homework sets. I posted a new set every week and students were required to submit 5 out of the 10 possible by WebCT email. After each homework deadline, I posted the correct answers for the entire class to view on the course website. It was their responsibility to raise questions in the appropriate discussion area if they needed additional clarification. The Blended students also took the midterm and final exams and completed three small projects that included online components.

Materials

Exams. The same midterm and final exams were given in both sections. These were non-cumulative tests and each consisted of 50 multiple-choice questions worth a total of 100 points. In order to avoid the possibility of information about the exams being shared between the two sections, testing took place under highly supervised conditions; students were allowed to have only pencils and erasers on their desks and all test forms were individually collected and counted and then stored off campus in a secure file. The proctor also actively monitored the students by walking the aisles and closely observing all activity.

Exercises/homework and discussions . The in-class group exercises that were required in the Traditional section were given to the Blended participants in the form of online homework sets and discussion items. This material ranged from basic multiple-choice and short answer-type questions to selections from the end-of-chapter activity items in the text. It also included the discussion of abstracts and brief excerpts from journal articles. Thus, although the delivery method differed between the two sections, the material covered was the same for both.

Projects. Students in the Traditional section each designed and conducted their own individual research study. In contrast, students in the Blended class completed three smaller projects, all of which took place online and not in the classroom. The smaller projects also had an applied and personal quality to them. The first (during week 5 of the semester) involved developing a hypothesis to explain some aspect of their own or a close friend's behavior as well as making suggestions for possible ways to test it (based on Cozby, 2004). The second (during week 11) required students finding and then taking and reviewing an online personality test of their own choice. The third (during week 14) had them locate and critique a journal article from an online database on a topic of direct interest to them. Each of these three projects had to be posted to the WebCT discussion board and students were required to make at least one substantive comment on another student's project. Thus, although the content of the projects completed by the two sections was not *identical*, the information covered (hypothesis development, measurement issues, and, locating and evaluating research reports) in the Blended projects was also included in the Traditional research project.

Lectures and text. Both sections were given the same lectures and used the same textbook.

Student views . Using the University's anonymous, end-of-course evaluation survey, students in both sections evaluated the effectiveness of the instructor on a 5-point scale (5 = "very effective" and 1 = "very ineffective"). Due to a change in the evaluation form during the semester the Blended section was taught, Blended students were given additional items that included: "Used intellectually challenging teaching methods," "Used assignments that enhanced learning," "Demonstrated the relevance of course content," and "Was responsive to questions and comments from students." These items used a 5-point scale

where 5 = “very strongly agree” and 1 = “strongly disagree.” All students had the option of completing an open comment page on the course.

Results

In order to assess the impact of restructuring the course on students’ *performance*, I compared the scores for the two groups on the midterm and the final exams. I also looked at self-report data from the course evaluations as well as activity levels within the WebCT classroom to evaluate student *satisfaction* in the Blended section. The findings suggest the value of using blended instruction.

Exams . Although there was no difference between the groups on the midterm exam [Blended, *M* = 75.41 (*SD* = 10.28) and Traditional, *M* = 75.55 (*SD* = 11.29)], there was a statistically significant difference between the two sections on the final, with the Blended students (*M* = 74.5, *SD* = 12.18) performing significantly better than the Traditional (*M* = 68.07 (12.63), *t*(55) = -1.99 (one-tailed), *p* = .03, *d* = .54 (medium effect). Four important points should be noted here. First, the overall lower scores on the final exam likely reflect the fact that the more difficult topics (e.g., higher-order designs, interactions, and statistical tests) were covered during the second half of the course. Second, excluding the four people who dropped out of the Traditional section from the analysis of the midterm scores did not affect the outcome of that analysis (Traditional, *M* = 76.74, *SD* = 11.04). Third, with only two online sessions and one project prior to the midterm, it was probably too early to see an impact on those exams due to the revised instruction. Furthermore, that no difference was found at that time helps to establish the initial comparable nature of the two sections in terms of their general ability in the subject matter. Fourth, had the four students who dropped out of the Traditional section with failing course GPAs remained and taken the final, the mean score for that section on the exam would most likely have been even lower and the difference between the two groups even greater.

Student evaluations . The ratings of instructor performance were virtually identical, Traditional, *M* = 4.5 (*SD* = .50, *Mdn* = 5.0) and Blended, *M*= 4.5 (*SD* = .70, *Mdn* = 5.0). See Table 1 for Blended student responses to the additional items they received.

Table 1: Blended Student Responses to Additional Evaluation Survey Items

Item	*M*	*SD*	*Mdn*
Used intellectually challenging teaching methods	4.5	.60	5.0
Used assignments that enhanced learning	4.3	.70	4.0
Demonstrated the relevance of course content	4.4	.80	5.0
Was responsive to questions and comments from students	4.5	.90	5.0

The open-ended comments reflected similar positive views across both sections. However, only 4 of the students in the Traditional section chose to complete this optional section of the form in contrast to 14 of those in the Blended class. Examples of comments from the Blended students specifically on the value of the online activities were

- “WebCT was extremely helpful in being responsible for homework…class discussions were a great way of learning difficult material.”
- “I like the WebCT teaching.”
- “I loved her teaching methods…not only was there group work, online discussions, but great lectures…”
- “I can email her anytime I have questions.”

There were no negative comments made about the online aspects of the class.

WebCT participation . Overall, the participation in the weekly discussions was quite active as measured by the number of postings. (*M* = 151, *SD* = 91.34, *Mdn* = 154, *R* = 23 to 298). Every student posted in some area of the class website (*M* = 55.72, *SD* = 32.80, *Mdn* = 53, *R* = 9 to 171) with 17 of 32 students making over 50 postings. Students varied in the number of "hits" (i.e., accessing the home page or using a tool) made while in the WebCT classroom (*M* = 739.25, *SD* = 485.38, *Mdn* = 650.50, *R* = 140 to 2,068) with 18 making over 500 and 8 of those over 1,000. Two students had in excess of 2,000 hits.

WebCT communication . The Blended students were also active communicators. Within the WebCT system, we exchanged over 250 email messages and 125 postings were made to "Ask Mary" which was an area of the discussion board that I set up for students to post any questions they had for me and felt comfortable asking in a public forum. (For private issues, I suggested students contact me either during my office hours or by email.) Fifteen students also exercised the option to create a homepage for others in the class to view.

Discussion

What is it about the blended format that may have contributed to the improved performance and levels of activity seen here? The findings support previous research that highlights the importance of creating responsible and active learners (Ball & Pelco, 2006; Simonson & Maushak, 2001), who are well supported (Twigg, 2003; Woods et al., 2007) as they work on realistic and personally relevant assignments (Driscoll, 2000; Simonson & Maushak, 2001).

Responsible and Active Learners

Blended students were encouraged to take a personally responsible and active role in the learning process in several ways. With some of the traditional in-class group work turned into required homework sets that students had to monitor and review on their own, it was no longer possible to sit back and allow more on-task classmates to do much of the work—as is often the case in group situations. Moreover, although the remaining in-class activities were shifted to *optional* online discussions, most students clearly stepped up and took an active part in those sessions. If we were to translate the average number of comments made in the weekly discussions into the traditional 75-minute class structure, it would represent more than two comments made every minute for the entire period. This finding clearly alludes to the power of the online environment over the standard in-class setting for encouraging high levels of participation and discussion. Anecdotally, several students reported they felt less self-conscious and freer to join in the conversations when they occurred online and not in the classroom.

Furthermore, the overall number of emails, postings, and hits within the course site as a whole reflect a highly active and engaged group of students. Student evaluations support the importance of all these activities for learning in that they reported that the assignments helped them learn and they found them intellectually stimulating. The comments on open-ended items provided even more specific praise for these features.

Beyond the way in which the assignments were structured, the fact that part of the learning for Blended students took place online may have inherently encouraged student activity and responsibility. Because of the public and permanent nature of online work, students may have felt a greater need to engage in (and thus put more effort into) self-monitoring. Concerns that incorrect answers or hastily developed responses become a part of the permanent class record—an aspect of online discussions that contrasts with the often more fleeting nature of many in-class comments—may be highly motivating in this regard.

Additionally, the simple act of preparing written responses for the online discussions may result in more self-monitoring and reflection. As a process, writing may encourage more introspection than does extemporaneous participation in a classroom setting. Furthermore, being able to read other students' responses, having the opportunity to ponder what was said, and *then* going on to plan a reply most likely encourages a more in-depth examination of one's understanding of the material.

Easy and Effective Support

The Blended students appear to have benefited from the support that is so readily available in an online setting. Student comments on the open evaluation form and their views of my responsiveness to their questions indicate this was true, as do the number of emails exchanged with me and postings made to the "Ask Mary" section. Additionally, the number of students who chose to create an optional homepage suggests they saw the online classroom as a good way to connect with their classmates.

From an instructor's point of view, I felt the online discussions were central to my ability to give students the support they needed. Students' online comments seemed longer and more detailed than is typical for in-class situations, and the devil was in those details. The more students wrote, the more likely it was that errors and misconceptions appeared; and, because they were written, I was able to review thoroughly all of their comments and answers. This meant I could catch even the more subtle misunderstandings that might otherwise slip past in a traditional classroom setting and respond almost immediately to clear up confusion.

Simply having a printed record of the discussions may benefit those students who lack effective note-taking skills or who have difficulty getting the most out of traditional in-class discussions due to a range of other issues (e.g., limited hearing, poor language skills, or learning disabilities). Moreover, all students could read and re-read the exact transcript of what was said at their own convenience and as often as necessary.

Realistic and Personal Assignments

The projects for the Blended section were designed to provide real world and personally relevant activities that could capitalize on the online environment. For example, students' test critiques were based on commonly available measures they each found and then took via the Internet. The value of this type of project is supported by the end-of-course evaluations in which students reported seeing the assignments as relevant and contributing to their learning of the course material. However, an important issue that must also be considered here is whether the projects were truly comparable across the two sections.

As mentioned previously, the content of the projects assigned to each of the two groups was not identical; those given to the Blended section were modified in order to be more realistic and meaningful and to take advantage of the blended nature of the course. However, each of the three topics covered in the Blended course (hypothesis development, measurement issues, and location and evaluation of research reports) was also addressed within the context of designing and implementing the Traditional research study. Therefore, if content alone were the key factor, those in the Traditional section should have been more likely to do well on the exam because they conducted a study from start to finish, and thus were exposed to a broader range of methodology topics (e.g., statistical testing). Given this scenario, it seems doubtful that the superior performance of the Blended students was due to content differences between the two types of project assignments.

The number of projects (three versus one) also seems an unlikely source for the difference in final exam scores. The three Blended projects were unrelated to each other in terms of the specific tasks involved (for both content and process) so there would appear to be no opportunity for carryover or practice effects to have played a role in the higher exam scores for this group.

Finally, perhaps the most important point is that in order to capitalize on the benefits offered by blended instruction, the character of the assignments (in this case the projects) must vary at least somewhat from those found in the more restrictive environment of the traditional classroom. The creation of a truly blended course is not simply a matter of moving existing coursework "as is" to an online setting. Rather, it involves the modification and development of assignments that take advantage of the affordances of online learning so that significant and meaningful work actually takes place online. Students in the Blended section worked on projects that used the Internet and the WebCT classroom. The realistic and

personally meaningful quality of the activities, as well as the posting of work online and the related discussions, are all likely to have contributed to student performance on the final.

Summary

Students in the Blended section outperformed the Traditional students on the final exam, reported a high degree of satisfaction with their instruction, and demonstrated active engagement in the course. These findings highlight the potential efficacy of integrating online and in-class components for teaching research methods. Blended instruction pairs the support of the classroom with the flexibility and richness that technology, and in particular the Internet, has to offer. As students and teachers become increasingly savvy about the use of technology and as new forms of media are created, the future of blended instruction as a powerful tool for improved instruction seems bright.

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Advanced Technical Writing: Blending Virtual Communities

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Abstract

A mixed-methodology research study was conducted to evaluate the use of virtual worlds in facilitating meaningful communication and in developing an online learning community that would enhance outcomes in advanced technical writing blended-learning courses. Students in this course wrote blogs, conducted research online, created manuals for students, produced online versions of their manuals, and conducted usability studies. The current study also examined the effect this pedagogical approach has on writing apprehension. Results indicate that, overall, students' tendencies to avoid writing situations were significantly lowered. Analyses of the data informed creation of a partially online advanced technical-writing course.

Introduction

As Web 2.0 tools mature, ideas for Web 3.0 have begun to take shape (Lansiquot & Rosalia, 2008). Computer-supported collaborative learning is growing and can include an online digital world using communication technologies and mapping applications that expand virtual space (a model that has recently been termed Second Earth [Roush, 2007]). Blended learning in online simulations provides alternate spaces for real discussions, overcoming geographic limitations. In virtual worlds, collaboration is more apparent than in more traditional online learning environments, because students can actually see virtual avatars of each other rather than just a conceptual idea of presence, such as an alias in a knowledge forum (Padmanabhan, 2008).

Blended learning can be used to foster active, constructive, intentional, contextualized, reflective, and collaborative learning (Jonassen, 1995). Learning is enhanced if it is situated in real-world and simulated contexts, fits new information with what is already known, is collaborative, and integrates assessment into the overall learning process. It seems obvious that virtual worlds can facilitate meaningful communication. What has yet to be determined is exactly how virtual worlds do so. Therefore, the purpose of this study was to examine the following research questions:

1. What is the effect of blending virtual communities on writing apprehension?
2. How can virtual communities facilitate meaningful communication?

Virtual Worlds as Learning Communities

The interdisciplinary nature of technical writing, which merges communication and the science, technology, engineering, and mathematics disciplines, is ideally suited for a blended learning pedagogical approach. Student learning communities in virtual worlds can, for example, blend face-to-face collaboration and online instruction because students are able to create their environment and communicate their processes in different formats for usability testing. The use of virtual worlds in the classroom advances further learning through creation, and the highlighting of aspects of cognitive flexibility theory (Spiro, Feltovich, Jacobson, & Coulson, 1991), which focuses on the ability to restructure

one's knowledge in adaptive response to situational demands. As Lattuca, Voigt, and Fath (2004) noted , "the encoding of information depends heavily on the restructuring of prior knowledge" (p. 30).

In the advanced technical writing course under study here, students first made presentations on their technical or scientific areas of expertise, then wrote a process description online article, and wrote blog entries throughout the semester (see Lansiquot, Rosalia, & Howell, 2009). Students were given the following instructions for their blogs:

Write at least three full paragraphs on the two required articles [Padmanabhan , 2008; Roush, 2007] relating what you read to topics in this course (Summarize the article in the first paragraph, and then critique its content). Post an additional entry discussing a recent technical or scientific article you have read. Also write at least one paragraph discussing your group's online manual; include relevant images and embed videos. Finally, evaluate an online instructional video. By the end of this course, you should have written at least seven blog entries, including blog entry responses to two prompts noted in the syllabus. During the semester, comment on at least one of each of your classmates' blog entries.

Exemplary blogs from this course, include: "AfternoonRant" (http://afternoonrant.blogspot.com/) and "Tech Writing and Beyond" (http://techwritingandbeyond.blogspot.com/).

The course assignments helped students prepare for the final project: the creation of an online *Second Life* manual on a topic of their choice, created for students by student groups. Students were given the following project instructions:

a. Form groups of about three based on common interests and areas of expertise. With your group mates and on your own, explore *Second Life* and teleport to locations related to a topic (e.g., where students hang out or should hang out) that is best discovered in this virtual world. Talk to others within *Second Life* to gather information and gain different perspectives on your topic. Then, as a group, develop a questionnaire and survey residents to narrow your topic. What kind of student are you catering to - part-timers or perhaps those with specific hobbies or majors? Write a manual for students on your topic. It should contain information and instructions (how-to, tips, etc.) that are useful to your student audience. Include appropriate graphics and snapshots taken in this virtual world. In a brief note preceding the instructions, specify your student audience and purpose. Be sure to include the avatar names of all group members.
b. To provide guidance in a world that is constantly changing, develop an online version of your manual that includes at least one original instructional video. Be sure to include helpful supplementary links, images, and videos, keeping in mind your audience, design principles, and information architecture.
c. Conduct usability testing and revise the manual. Finally, complete the online self-evaluation form.

Class time was allotted to explore online virtual communities and to interact with residents. Student questions regarding how to perform a task in *Second Life* were deliberately left unanswered so as to encourage students to perform online research, interview residents in this virtual world, and confer with their group mates in class. Students were also required to respond to prompts posted on the course discussion board. At the end of the semester, to learn how this project affected technical communication, students evaluated their collaboration with each other and interaction with residents. One exemplary project, from the student group the Bards of Brooklyn, is entitled "Second Life Poetry Slam: A Student's Manual for Organizing, Setting Up, and Hosting Your First Virtual Event" (http://bardsofbrooklyn.wetpaint.com/). Other student groups wrote manuals on topics such as organizing a treasure hunt for middle-school students, hosting a conference, setting up a concert or an art gallery, and promoting events in *Second Life* (http://adlife.wetpaint.com/). There was even a manual on how to recreate a scene from a television show (http://secondlife.madpage.com/)!

Although a myriad of technologies was used in this blended learning course, in response to the self-evaluation question: "How would you improve this course to meet your learning goals?" one student wrote, "integrate more technology." The undergraduate researcher on this project, Meleny Perez (2008),

who was also a student in the course, noted, “to improve this course I would probably introduce Second Life a little earlier and give the class a bit more time to explore, and give them ideas about a theme that someone created in a previous class.” In a written response, another student agreed, “Second Life is a great tool but time consuming, so maybe how much it factors into future courses should be adjusted. It’s a unique tool that makes the class more interesting, not boring.”

Research Methods

Participants

Thirty-five undergraduate students enrolled in three sections of Advanced Technical Writing participated in this study during the fall 2008 semester at New York City College of Technology. Although this was a culturally diverse group of adult participants, it included 28 male and only 7 female students.

Data Collection

This study made use of both qualitative and quantitative data. The qualitative data included interview responses and answers to the following self-evaluation questions:

1. What were your goals for this course? Did these change? How? When?
2. How did interviewing and talking with those you saw in *Second Life* help you refine the topic for your manual?
3. What is unique about your online manual?
4. Do you think your writing apprehension has decreased or increased because of this course?
5. Explain the pros and cons of your experience using blogs and blogging.
6. How would you improve this course to meet your learning goals?

The quantitative data were collected through a writing apprehension test. Following the evolution of student thinking and writing was central to this study, which used an adapted writing apprehension test (Daly & Miller, 1975; Reed, Burton, & Kelly, 1988). This writing apprehension test was administered to measure a student’s tendency to avoid or approach situations that require writing. For this study, a 4-point Likert scale was used, eliminating the option of a neutral choice.

Participants in this study were tested twice, and asked to do the following:

1. Complete a writing apprehension test.
2. Complete all course assignments, particularly the online manual on virtual worlds.
3. Complete the writing apprehension test once more.

Results

What is the effect on writing apprehension of blending virtual communities?
A *t* test was used to analyze the difference in pretreatment and posttreatment scores from the Writing Apprehension Test. Students’ writing apprehension scores decreased from pretreatment to posttreatment. This decrease was statistically significant, $t(34) = 4.120$, $p < .000$ (see Tables 1 and 2).

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Std. Error Mean
Writing Apprehension Pretreatment	35	41.00	87.00	69.2857	11.31519	1.91262
Writing Apprehension Posttreatment	35	41.00	83.00	62.6857	9.83921	1.66313
Valid *N* (listwise)	35					

Table 2: Paired Samples Test

Paired differences	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference		*t*	*df*	Sig. (2-tailed)
				Lower	Upper			
Writing Apprehension Pretreatment - Posttreatment	6.60000	9.47815	1.60210	3.34414	9.85586	4.120	34	.000

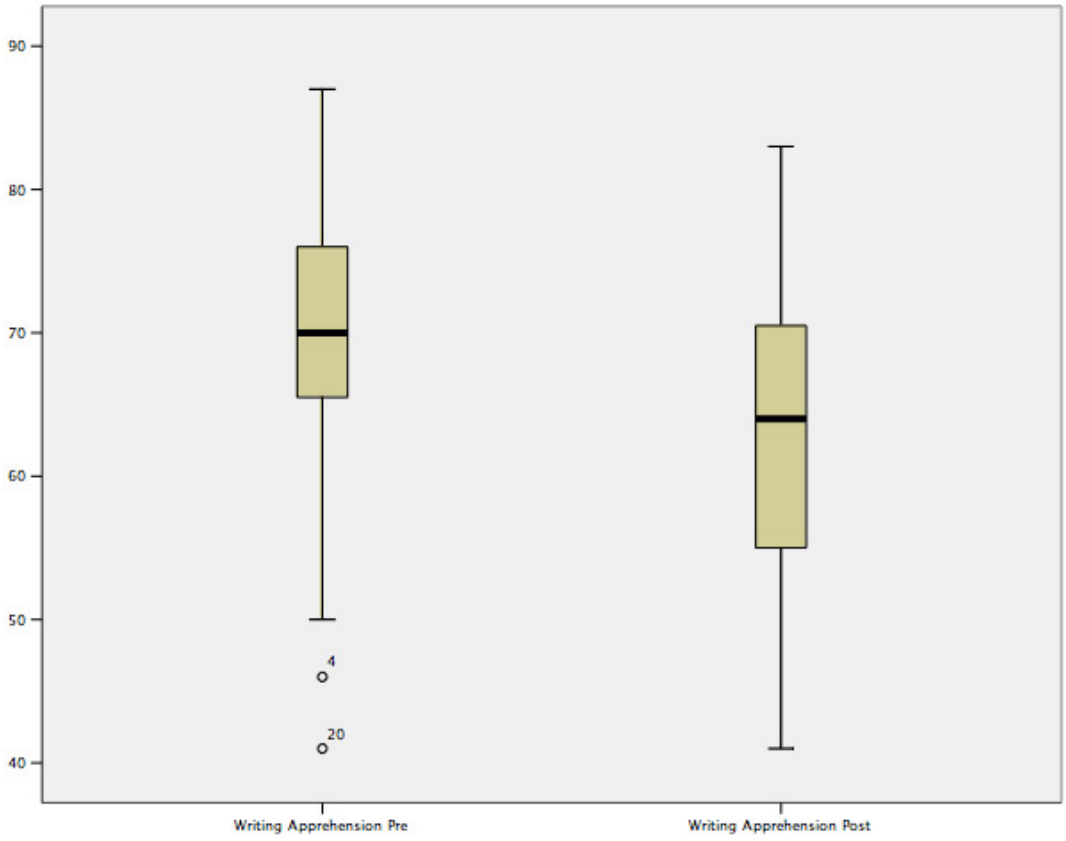

Figure 1: Box plots of results

The box plots shown in Figure 1 indicate that there is a negative skew in the distribution of pretest scores (-.566). This negative skew is dragged in part by two outliers (Participants 4 and 20). The distribution of posttest scores shows less of a negative skew (-.208) in the distribution of scores, indicating that more student scores fell below the new mean, 63. Comparatively, this indicates an almost 7-point drop in writing apprehension scores for an intact group that had earlier shown a higher degree of difference in scores, reflected in a higher standard deviation for the pre scores (11.3) compared to the post scores, (9.8).

How can virtual communities facilitate meaningful communication?

Results indicating a lowering of writing apprehension were corroborated by qualitative data, which indicated students' feelings that written communication in a virtual world, itself, was purposeful. For instance, in answer to the self-evaluation question "How did interviewing and talking with those you saw in *Second Life* help you refine the topic for your manual?" one student responded:

In terms of what I had to do for my manual, all the interaction I had to do was to ask people where I could find free stuff. Once I got my info, I "kept it moving." But, in a way, it did help my manual in terms of giving me references to relate to my readers.

Another student pointed out, "Talking with second lifers help in the sense that they had not only helpful tips but also had their own ideas they added to the topic." A member of the same group noted:

While I was [*sic*] interviewing and talking with those I saw in Second Life helped me refine the topic of my manual because I felt that everything in SL was a work of art. Therefore, I wanted to introduce more art and have a gathering with friends and classmates.

A member of one general group whose manual was about how to promote an event in *Second Life* explained, "Interviewing and talking to others in SL helped my group and I refine our topic by focusing on a topic that was relevant in relationship to other topics from other groups." Moreover, the undergraduate researcher on this study summed up her experience gathering data to develop her group manual, noting,

Talking with others in Second Life did not give me the idea to refine the topic for the manual because it was already a good topic, but talking to others did give me some ideas about what to include in the manual.

Yet another student responded, "It gave us more information about the technical aspects of our project. Helped us become more comfortable with Second Life." A different student responded simply, "It greatly refined my manual because I would have never been able to start the manual." Finally, one student provided a practical response: "Interviewing and talking with SL residents helped me find out places to get freebies."

In response to the questions "What is unique about your online manual? How would you rate or compare your wiki manual with others, including the official site?" One member of the group called LeOX (http://leox.wetpaint.com/), whose members created a Facebook page to discuss their project of hosting a conference, explained "Our manual is extremely creative, as it consists of many links [to outside sources] . . . ."

Conclusion

Lattuca, Voigt, and Fath (2004) posited that "interdisciplinary courses are more engaging than disciplinary courses because they capture students' intellectual interests and help them connect information from discrete disciplines" (p. 23). However, because students see technical writing as indigenously

interdisciplinary, more work needs to be done to motivate students to write within its innate subgenres. Blending virtual communities gives them a stronger purpose to write well and write to engage their peers.

In this study, students welcomed the use of new technology and commented on how it helped them to avoid the boredom in the classroom that they often experienced. Virtual worlds provided ideal spaces for simulations and the enactment of professional tech conferences. In many tangible ways, blended learning afforded students multiple venues for addressing various audiences and creating, finding, and describing materials for their technical manuals. Results noted herein have informed the development of a new, partially online, hybrid course, which is scheduled to begin in the fall 2009 semester. The research reported in this study continues in sections of Advanced Technical Writing in the spring 2009 semester to further exploration of the use of virtual worlds for technical writing and communication. Future uses of virtual worlds in this course will focus more specifically on expanding multimedia communication resources in virtual worlds (see Schmid, 2008) for classroom use.

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Third Space: Blended Teaching and Learning

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Abstract

This paper reports on a study that investigated how the blend of face-to-face and online instruction supports the development of Third Space in a content-area reading education course requiring field experiences with marginalized students. For this study, blended learning was defined as the combination of traditional and nontraditional face-to-face and authentic online learning activities to encourage student engagement and potentially transform student learning experiences and outcomes. Third Space is defined as a zone of transformation that is generated when teachers and students socialize together in and through language, integrating everyday and academic knowledge. A primary goal of the study was to provide Third Space content-area literacy learning opportunities for pre-service teachers through blended instruction that increased critically reflective interactions. In turn, pre-service teachers were to provide Third Space literacy learning opportunities with marginalized students in the field.

This critical ethnographic study addressed the following central research question: How does a blend of face-to-face and online instruction support the development of Third Space in a content-area reading education course requiring field experiences with marginalized students? Subsidiary questions included: How did critically reflective interactions inform Third Space literacy learning opportunities provided for marginalized students in the field? What evidence of transformation in student learning experiences and outcomes was provided in final critical reflections? Data collected through ethnographic methods included observations, informal interviews, documents, and artifacts. Qualitative data were triangulated and thematically analyzed to answer the questions of the study. Findings indicate that blended teaching and learning that increased critically reflective interactions supported the development of Third Space teacher dispositions, praxis, and critical views of literacy.

Introduction

From early on in school, many Black and poor students are labeled *at risk* and transferred into alternative education programs, suspended, or expelled for social issues (e.g., fights, teenage pregnancy). As a subgroup that is marginalized in society, they often develop a failure-oriented, juvenile delinquent identity (e.g., Aronson, 1995; Fine, 1990; Foucault, 1977; Watts & Erevelles, 2004). In 2000, 50% of all Black dropouts were incarcerated and more Black males were in prison than in college (NPTARS, 2005). Forty-one percent of our country's inmates are high school dropouts and 80% are under the age of 25 (Office of Justice Programs, 2008). Dropouts are six times more likely to be from low-income households. The U.S. spends three times more on incarcerating our Black and poor youth than on giving them a decent and critical education (Giroux, 1992, 2003).

Quality educators are a major factor in influencing marginalized and at-risk students' achievement and in reducing recidivism (e.g., Blomberg, 2001; Delpit, 1995; Hollins & Guzman, 2005; Ladson-Billings & Tate, 2004; Lee, 2005; Milner, 2003; van Veen, 2008). Quality teachers are defined in the literature as having full certification, having a major in the field they teach, and tending to use a variety of teaching approaches adjusted to fit the needs of their students within an active, purposeful teaching context (Banks et al., 2005). However, the majority of teachers are White, female, and middle class, and have

had limited experiences with students different from themselves (NCES, 2005; NPTARS, 2005). Even though they may fit the definition of quality, most teachers do not feel competent developing good relationships with marginalized or at-risk students and do not choose to teach in marginalized or at-risk schools where they are most needed (NPTARS, 2005; Wubbels, den Brok, Veldman, & van Tartwijk, 2008). Providing opportunities to develop Third Space teacher dispositions (Giovanelli, 2003) by experiencing and creating meaningful teaching approaches with marginalized students during field experiences may address pre-service teachers' lack of competence and desire to teach in marginalized or at-risk schools.

Dominant teacher education practices address education reform from the mainstream logic of *fixing* students. Dominant teacher education socializes teachers into a paradigm which conceptualizes Black students as disadvantaged or at-risk (King, 1991, 2005). Traditionally, teachers are *trained* to remediate at-risk students' deficits rather than *empowered* to merge reflective practice and reflective action, what may be referred to as praxis today (Ax & Ponte, 2008; Dewey, 1910/1997, 1938/1997; Freire, 1998; Freire & Macedo, 1987; Mashayekh, 1974) in order to provide literacy learning opportunities for all students (King, 2005; Lee, 2005). Teacher education focuses too often only on pre-service teachers' lack of knowledge instead of addressing education as transformation that is grounded in Third Space opportunities for learning . In order to adequately prepare teachers to be responsive to students with multiple risk factors and social issues different from teachers, traditional teacher education programs need to be transformed (e.g., Lee, 2005; Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2007; Tobin & Sprague, 2001). Teachers occupy a unique position to work with students in ways that challenge the "traditional relations of power and authority" (Pinar, Reynolds, Slattery, & Taubman, 2000, p. 393) by constructing curriculum with the students from their diverse ways of knowing (GutiÉrrez, Baquedano-LÓpez, & Tejeda, 2003). However, active attempts to provide alternative paradigms of teaching embedded in professional development and student learning are rare (Cochran-Smith, 2005). Providing opportunities to develop a Third Space praxis through blended teaching and learning approaches in pre-service teacher courses and field experiences may address this gap.

It is argued that there is a need for educators to be critically reflective about the predominant literacy instructional models in the U.S. schools which play a role in producing inequalities among student subgroups and in transmitting and reproducing the culture of the dominant group. Critically reflective teachers are able to view illiteracy not as the individual's fault but as a socially- and historically-constructed notion (Freire, 1970/2000). They are able to encourage students to become critically literate by reflecting upon and naming their worlds, and becoming aware of their social and political locations in order to remake their own culture (Siegel & Fernandez, 2000). Critical literacy is a practice of freedom (Greene, 1988) grounded in language. A critically reflective teacher is able to approach literacy education with questions about how power works in the classroom. Reflective teaching is not a new idea, yet critical approaches are just beginning to receive attention within the field of literacy education. Integrating critically reflective approaches in reading education courses may help transform pre-service teacher perspectives about critical literacy as well as dispositions and praxis for working with marginalized and at-risk students.

Conceptual Framework

This section defines and discusses blended learning and Third Space theory to weave a transformative literacy learning framework for working with at-risk, marginalized students.

Blended Learning

Blended learning is not a new concept, evolving over the last four decades from the use of a combination of classroom formats, books, and handouts to a blend of face-to-face instruction and technologically-mediated approaches (American Society for Training & Development, 2001). It is also referred to as the "third generation of distance education systems" (So & Brush, 2007, n.p.) combining the first generation of one-way models of instruction (e.g., television) and the second generation of single technology learning (e.g., web-based). The main objective of blended learning is to optimize learning outcomes and minimize

the cost of the program through "any combination of learning delivery methods, including most often face-to-face instruction with asynchronous and/or synchronous computer technologies" (So & Brush, 2007, n.p.). Hofmann & Miner (2008) suggest that the "key to the entire blend [is] that each piece [is] dependent on another. Asynchronous and synchronous work [is] integrated to such a degree that a participant [cannot] successfully pass the class without completing each component" (n.p.). Synchronous face-to-face formats include but are not limited to instructor-led classrooms and lectures, hands-on workshops and labs, and field trips. Synchronous online formats include virtual classrooms, web seminars, and tutoring, among other approaches. Asynchronous, or self-paced, formats include documents, web sites, web-based training, surveys, simulations, and online learning communities. For this study, blended learning was defined as the combination of traditional and nontraditional "face-to-face teaching methods with authentic online learning activities … [to potentially] transform student-learning experiences and outcomes" (Davis & Fill, 2007, p. 817).

The recent convergence of new student-centered pedagogies, computer- and World Wide Web-based technologies, and social theories of learning enable the development of transformative teaching and learning models/paradigms linked to the online environment (Dziuban, Hartman, & Moskal, 2004). Even though some educational institutions consider learning to be blended if more than a certain percentage of the course is online, "blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than a ratio of delivery modalities" (p. 2). Dzuiban and colleagues (2004) explain that the instructional model of the entire course is to be reconceptualized and redesigned, retaining the face-to-face component, yet shifting "from lecture to student-centered instruction in which students become active and interactive learners" (p. 3). Interaction should increase between students, the instructor, the content, and outside resources (Holley & Dobson, 2008; So & Brush, 2007). Initially, online components may be effectively and slowly introduced into predominantly face-to-face courses (e.g., via discussion groups, chat rooms, or email), depending on the instructor's and students' level of expertise with blended instruction and online technologies. The shift also integrates new student and instructor assessment methods (e.g., rubrics that incorporate active learning components). The transformational potential of blended learning for all participants relies on the interplay between multiple formats, complex interactions, and learning how to teach and learn differently (Dzuiban, Hartman, & Moskal, 2004). Thus, it is proposed that blended teaching and learning approaches that increase critically reflective interactions may support the development of Third Space theory in a content-area reading education course requiring field experiences with marginalized students.

Third Space Theory

Third Space theory provides a framework for rethinking how to teach at-risk students who have been marginalized. Third Space "merges the 'first space' of people's home, community, and peer networks with the 'second space' of the Discourses they encounter in more formalized institutions such as…school…" (Moje et al., 2004, p. 41). First space is equivalent to primary Discourses and second space to secondary Discourses. Gee's (1992, 1996, 2000) theory of discourse and literacy (i.e., sociocultural studies in reading) explains that Discourse with a capital D is like having an identity kit with instructions on what to wear, how to act, and how to talk in particular roles in order to be recognized as a member of a particular community of learners. Gee's theory ideologically implies that exclusion results from not being accepted in a particular group due to the way one speaks and acts. It implicates marginalization from power and hierarchical structures in society (i.e., control of the dominant discourse of the society makes it easier to succeed).

The concept of first, second, and third spaces invites the reconceptualization of binary spaces (Lefebvre, 1991), either-or ways of thinking about literacy learning and success in school (Moje, 2004). Third spaces are in-between, or hybrid spaces (Muth, 2005; Wilson, 2003). Seemingly oppositional first and second spaces work together to generate new third space knowledges, Discourses, and literacy forms. Third Space is generated when people socialize together in and through language, blending everyday and academic knowledge. Third Space is used to explore literacy learning as a bridge or scaffold to move students through dynamic (GutiÉrrez, 2002, 2008; Lave & Wenger, 1991) zones of proximal development

(ZPD) from marginalized (e.g., everyday) to privileged (e.g., dominant) content academic knowledge and Discourses. Third Space is a navigational tool for guiding students across the boundaries of various privileged content texts through their everyday funds of knowledge and Discourse. Third Space is also a space where everyday knowledge and Discourses are used in ways to "challenge, destabilize, and expand literacy practices that are typically valued in school" (Moje et al., 2004, p. 44).

Outside of Third Space thinking, first space of students' out-of-school everyday knowledge and second space of in-school, academic knowledge are separate categories, read as everyday *versus* academic knowledge, implying one way to be literate (Lankshear & Knobel, 2006; Moje, 2004). No Third Space is available for marginalized non-dominant students who are presumed to be illiterate or low-ability; they are labeled as failures. Third Space thinking challenges fixed notions and dominant views of culture and language (EngestrÖm, 1987; GutiÉrrez, 2002, 2008). By creating Third Space, teachers can fruitfully merge competing knowledge and Discourses if students are not defined according to dominant Discourse (hooks, 1994). Third Space was proposed in this study as an additional connection between critically reflective thinking, discourse theory, sociocultural theory, and literacy learning opportunities for marginalized students. Studies that reconceptualize literacy learning opportunities typically takes place in community-based literacy research, occurring less often in urban schools, and, minimally, in alternative schools (GutiÉrrez, Baquedano-LÓpez, & Tejeda, 2003; Tusting & Barton, 2005). The field of adolescent content literacy has begun to focus on marginalized youths' out-of-school literacy practices, but seldom addresses Third Space opportunities (Lee, 2005; Lee & Ball, 2005; Moje, 2004; Strickland & Alvermann, 2004; Wilson, 2003) in school.

Problem

The problem of this study was determining how to tap into the transformative potential of blended learning and Third Space to increase the interplay between multiple formats, complex interactions, and learning how to teach and learn differently so that teachers and future teachers felt competent and desired to teach at-risk and marginalized students. The significance of interaction and activity for successful teaching and learning (literacy) outcomes has been documented in situated learning theory and activity theory (EngestrÖm, 1987; Lave & Wenger, 1991; Vygotsky, 1978; Wells, 2000) and classroom discourse studies (Cazden, 1988). Successful literacy learning outcomes for marginalized students involve social and/or academic transformation as a result of critically reflective teaching and learning (Freire, 1970, 1998). Transformation often arises out of conflictual situations during the process of creating and providing Third Space literacy learning opportunities (GutiÉrrez, 2002, 2008). The collaborative and active nature of face-to-face and online activities has also been shown to increase interaction, and thus learning, among students (Dziuban, Hartman, & Moskal, 2004; Gerber, Grundt, & Grote, 2007). Much like Third Space, blended learning is used to challenge and reconceptualize traditional teaching and learning, but its processes and benefits are difficult to communicate (Falconer & Littlejohn, 2007). Similar to the development of Third Space within hybrid contexts, blended (or hybrid) learning is a tool for navigating students through unfamiliar learning contexts and/or theories while building on their everyday knowledge and Discourse (Abrahmov & Ronen, 2008). However, most "institutional practices are geared toward traditional approaches" (Davis & Fill, 2007, p. 817) which means instructors may be on their own when offering Third Space and blended teaching and learning opportunities (Hofmann & Miner, 2008). Exploring how the blend of required online and face-to-face teaching and learning approaches supports the development of Third Space theory may potentially increase understanding of how to teach and provide transformative literacy learning opportunities for marginalized students, but has not been explored.

Purpose

The overarching purpose of this study was to explore how a blend of required online and face-to-face teaching and learning approaches might support the development of a transformative literacy framework, a Third Space, based upon the understanding that an effective literacy educator is one who is able to be critically reflective. A critically reflective teacher is one who works in communities of inquiry (Rogoff, 1990) with no predetermined script (and is therefore not deskilled) to identify contradictions, and considers ways

of providing Third Space in literacy education, especially for non-mainstream (i.e., marginalized) students who do not benefit from mainstream schooling.

Research Questions

This critical ethnographic study addressed the following central research question: How does a blend of face-to-face and online instruction support the development of Third Space in a content-area reading education course requiring field experiences with marginalized students? Subsidiary questions included: How did critically reflective interactions inform Third Space literacy learning opportunities provided for marginalized students in the field? What evidence of transformations in student learning experiences and outcomes was provided in final critical reflections?

Methods

This critical ethnographic study incorporated critical approaches to literacy research that actively acknowledge and critique the inequalities of power related to the historical, sociological, and political contexts of literacy learning (Barton & Hamilton, 2000; Tusting & Barton, 2005), especially for at-risk, marginalized students in our schools and society. Critical ethnography is qualitative social research framed within critical social theory (Carspecken, 1996). Qualitative social research is used to attempt to "understand, interpret, and explain complex … social phenomena such as classroom cultures" (Kamberelis & Dimitriadis, 2005, p. 17) by focusing on the meanings and practices of how people experience themselves in their worlds. Critical social theory describes social life and works to improve social theory by collecting "evidence" (often tacitly illuminated in critical reflections and/or as a result of critically reflective interactions) that illustrates the meanings and practices of how people experience themselves in their worlds (Freire, 1970/2000). Critical social researchers are 'criticalists' (Carspecken, 1996, p. 3), who view contemporary society as unfair, unjust, and often oppressive for many people. Criticalists look at how unequal power relations can corrupt knowledge and inform fundamental value orientations such as democracy, equality, and human empowerment. Criticalists want to transform the status quo through research that supports positive social and cultural change. The researcher, participants, procedures, data collection, and data analysis are discussed in this section.

Researcher

Prior to beginning her doctoral studies, the researcher's views of literacy had been inextricably shaped by years of teaching and life experiences at The Academy. The Academy is one of the educational alternative outreach programs (EAOP) in a large public school district in the Southeastern United States. Students are referred to EAOP based on adjustment problems in school, substance abuse, being a runaway, adjudication of delinquency by the juvenile court, placement in detention while awaiting adjudication, or expulsion. Sixty-four percent of EAOP, including The Academy, are second/ last chance alternative schools for disruptive students and teenage parents who lacked achievement in the district alternative schools. Youth enrolled in second/last chance sites are 5% White, 41% Hispanic, and 50 % African-American. The Academy students are predominantly African-American youth, involved in or at risk of being involved in the juvenile justice system (Kincheloe, 2005; Reed-Danahay, 1997). Years of experience at The Academy encouraged the researcher (a White female from the Southern United States) and, subsequently, her students to critically reflect, problematize, and feel empowered to develop transformative literacy learning opportunities in school (Giroux, 1988; Freire, 1970/ 2000). They became compelled as a classroom community of inquiry (Lave & Wenger, 1991) to make education work for them by creating Third Space together, although the terminology was unknown to the researcher at the time.

All teaching and learning done after almost 10 years at The Academy originated in the problematizing of students' real-life situations and ultimately benefited some part of the students' lives. For example, the students developed monthly school newspapers that were circulated in their community as well as annual yearbooks and cookbooks. These real-life literacy projects evolved into *The Drama Club*, a space for students to develop their literacy practices through the arts (Lee & Ball, 2005; Moje & Lewis, 2007; Moll,

1992). *The Drama Club* experience was a daily, year-long process, "shaped by culture, influenced by language, impacted by beliefs, affected by values, and moderated" (Eisner, 2002, p. 1) by each person's individuality, or Discourses (Gee, 1996). It provided a Third Space for students to learn from, communicate with, and trust others even amid conflicts that arose—something they had not experienced in previous learning environments. Dramatic performances ranged in depth, from short skits to each other about how to learn a certain concept in class to full-length dramatic performances cutting across several content areas. For example, some performances were self-initiated, blatant challenges to their own lives, such as when students developed scripts about the reality of HIV-AIDS from their own experiences. One full-length play in particular depicted some of the little-known African-American history in the youths' own community. The play was presented in several venues across the city where the students lived (e.g., the county juvenile courthouse Black History Month presentation, elementary schools, and homeless shelters).

The researcher subsequently learned during two years of a doctoral teaching assistantship that most pre-service teachers who took the required content-area reading course were well-versed in their subject areas and in writing standard journal reflections, but not in the art of critical reflection. Moreover, most of the pre-service teachers also took this course during their last semester of college and entered it skeptical of the connection between teaching reading and their content area. They also held traditional (or dominant) views about teaching and learning to read in general and had rarely worked with at-risk students (Pane, 2006), a field experience requirement for this course. With these contrasts in mind upon becoming instructor of record for the course, the researcher proceeded to act on the presumption that all students and teachers deserve (but rarely get) the chance to experience, critically reflect upon those experiences, and create a praxis of Third Space in the classroom in order to feel empowered against the dominant model of literacy and schooling that chokes many people in educational settings today (Beach & Kalnin, 2005).

Participants

Pre-service teacher participants were from The University, a public research university located in an urbanized area of the Southeastern United States (U. S. Census Bureau, 2000). The University's total undergraduate enrollment is majority minority of which 59% are Latina/o and 12% are Black. Pre-service teacher participants included approximately 50, mostly Latina/o, students between the ages of 21 and 55 who attended the required content-area reading course for subject-area education majors. Content-area teams included pre-service teachers who were majoring in such areas as the Arts, Science, Math, Special Education, Social Studies, English, and Counseling, and were required to take this reading education course. Ninety-five percent of the pre-service teacher participants lacked previous experience or contact with the population of at-risk, marginalized student participants scheduled for the field experience portion of the course. The pre-service teachers were successful at the dominant education paradigm of teacher-led classes and individually hand-delivered assignments. On the other hand, they actively collaborated and communicated with others outside of school via the Internet which was widely available to them in their everyday lives. Student participants in the field attended The Academy and included approximately 50, primarily African-American students with low academic achievement in school who were either involved in or at risk of being involved in the juvenile justice system. Ninety-five percent of these students had not participated in any type of field experiences with university per-service teacher education programs before. In contrast to the pre-service teachers, they were disproportionately unsuccessful in the dominant education paradigm. Although they also actively collaborated and communicated with others in their everyday lives outside of school, the Internet was rarely accessible to them in or outside of school. Informed consent was achieved from all participants. Pseudonyms are used throughout this article to retain their anonymity.

Procedures

Due to the stark differences between the educational and social experiences of the pre-service teachers and field students, setting up the course and field experiences meant more than just reproducing an existing course and expecting successful outcomes from the standard syllabus (module), content-area

textbook, efolio uploads, journal reflections, and test requirements. Previous field experiences had been set up in various local schools and conducted individually by each pre-service teacher with at-risk students to practice teaching the content-area strategies. Journal reflections typically summarized the success or lack of success of each field experience (Pane, 2006). Opportunities for pre-service teachers to critically reflect, merge practice and action to achieve praxis, and create opportunities for successful literacy learning in communities of inquiry were not provided. In contrast, required field experience for this course would be offered as an "after-school literacy camp" at the alternative school where the researcher/instructor of this study/course had formerly taught for nine years.

Since the alternative school context and student population were both unfamiliar to the pre-service teachers, critically reflective opportunities to develop praxis and Third Space teacher dispositions and critical views of literacy throughout the course were deemed necessary. Therefore, in order to prepare the pre-service teachers to work with marginalized students in the field, the course was redesigned to challenge dominant views of teaching and learning, yet provide a bridge from traditional models toward nontraditional literacy learning and participatory paradigms for creating Third Space in the university classroom prior to entering the field. To accomplish the existing standard content-area course requirements as well as the Third Space goals, the researcher/ instructor pursued a blend of critically reflective online and face-to-face teaching and learning approaches that would merge familiar and unfamiliar concepts brought to the course by the pre-service teachers.

The entire blend of the course was developed so that the pre-service teachers could not pass the course without completing each component successfully. Required time online was set up to augment and/or replace, not necessarily reduce, face-to-face seat time traditionally used for teacher-led lecture related to content-area reading strategies and hand-delivered "formative and summative assessment mechanisms for students and instructor" (Dziuban, Hartman, & Moskal, 2004, p. 3). The required time online was also set up as communities of inquiry or practice that would critically reflect on and merge the traditional ideals and theories most pre-service teachers possessed upon entrance into the class with the required shift to participatory, Third Space, experiences in the classroom and field (Abrahmov & Ronen, 2008). The online objectives also allowed for exploration of the qualitative nature of the activities, which has been overlooked in the research (Gerber, Grundt, & Grote, 2007), to answer the questions of this study.

Face-to-face seat time in the university classroom and in the field experiences was set up to increase the pre-service teachers' time to experience and reflect on the shift to student-centered instruction, both online and face-to-face. Face-to-face student-centered teaching and learning in this study also involved planned pedagogical activities with increased interaction between the instructor and pre-service teachers in the university setting and among pre-service teachers and at-risk students in the field settings. Additionally, the researcher/instructor would accompany the pre-service teachers to all field experiences for support and guidance.

Blended teaching and learning was provided to increase and overlap the nontraditional "interaction[s] between student-instructor, student-student, student-content, and student-outside resources" (Dziuban, Hartman, & Moskal, 2004, p. 3). In this study, face-to-face and online interactions built on one another in multifaceted degrees, never standing alone in a binary fashion. Though counterintuitive to describe the hybridity of overlapping interactions and resources in a traditional binary chart, it is useful for discussion purposes here. Figure 1 summarizes the required online and face-to-face critically reflective teaching and learning interactions and approaches used during the course.

Interaction	Face-to-Face	Online
Student-Instructor-Content-Outside Resources	Instructor-facilitated Participatory University Classroom Experiences	Critically Reflective Assignments, Lesson Resources, Assessments
	Instructor-facilitated Field Experience Preparation	Critically Reflective Assignments, Lesson Resources, Assessments
Student-Student-Content-Outside Resources-(Instructor)	Student-facilitated Participatory University Classroom Experiences	Critically Reflective Lesson Planning, Lesson Resources
	Student-facilitated Participatory Field Experiences	Critically Reflective Lesson Planning, Lesson Resources

Figure 1: Required online and face-to-face interactions and approaches

As noted in Figure 1, all student-instructor and student-student interactions overlapped content and outside resource interactions. Content included Third Space Theory, literacy learning, critical reflections, and content-area strategies. Outside resources included textbooks, web readings, video clips, and efolio artifacts. Instructor guidance and support in the shift toward Third Space occurred during all interactions. Face-to-face student-instructor interactions included instructor-facilitated participatory university classroom and field experiences. The instructor emailed the standard module of content-area strategy instruction and PowerPoint slides to all students prior to use in class, as well as weekly updates and critical reflections to support and guide all blended teaching and learning approaches throughout the course. Online student-instructor interactions included a required individual and content-area team assignment submission process via email, consisting of summative assessments of submissions, revisions, and resubmissions, and formative assessments recorded on ongoing interactive point sheets throughout the course. Individual assignments submitted to the instructor via email included critical reflections of each class and field experience; texts produced during each Collaborative Textbook Study (CTS); field experience clearance and log information; and efolio artifacts to be uploaded in the university system. Increased online and face-to-face interactions between students and instructor provided additional opportunities for the instructor to mentor Third Space teacher dispositions.

Face-to-face student-student interactions also included a participatory CTS (planned online) conducted by each content-area team for the other teams in the class. Each team conducted their CTS for one pre-selected chapter from the textbook, facilitated by PowerPoint slides and including online video clips and other resources. Blending online and face-to-face interactions with the familiarity of a textbook chapter presentation in class provided familiar ground for teamwork to begin before heading into the unfamiliar territory of working with marginalized students. Each content-area team also conducted twelve field experience literacy lessons (planned together online), submitted to the instructor via email as a proposal, and conducted with small student groups at the alternative school. Each field experience proposal (after the first one) relied on the blend of conducting and critically reflecting on the previous field experience, thereby providing opportunities for developing praxis. Finally, each team produced a final PowerPoint slideshow critically reflecting on their understanding of Third Space that was viewed by the whole class on the last day. Final reflections implicitly relied on critical reflections of all previous interactions during the course, thus providing generous, yet succinct evidence of praxis, teacher dispositions, and views of literacy. The instructor's final reflection, also shown as a PowerPoint slideshow on the last day of class, provided evidence of the instructor's observations of development of Third Space teacher dispositions during the course. Online student-student interactions included CTS lesson planning by each team and CTS outlines emailed by the content-area team to all other students. Each student printed the outline, filled in predictions where applicable, and brought them to class to use and produce texts during the CTS.

Data Collection

Data were collected through ethnographic (observations, informal interviews, documents, artifacts) methods. Observational and informal interview data were documented with photographs and videotapes.

Documents and artifact data consisted of critical reflections of in-class, out-of-class, and field experiences; drawings, pictures, collages and other texts (e.g., efolio artifacts) produced; presentations, lesson plan proposals, lesson plans, and materials including online resources (e.g., YouTube video clips, downloaded lyrics and biographies). All interactions were documented and submitted online via email to the researcher/instructor as data. All data required the pre-service teachers to critically reflect on the interplay of online (mostly email) and face-to-face formats, interactions, and learning how to teach and learn differently.

Data Analysis

Qualitative data were triangulated (collected from a variety of sources) in order to "increase the accuracy and credibility of findings" (Patton, 2005, p. 93) and thematically analyzed to answer the questions of the study. Thematic analysis involves searching for themes that emerge from the data that describe the phenomenon being studied (Fereday & Muir-Cochrane, 2006; Ryan & Bernard, 2003). In this study, the phenomenon is how blended teaching and learning that increases critically reflective interactions might support the development of Third Space in a content-area reading education course requiring field experiences with at-risk, marginalized students. A "hybrid approach of qualitative methods of thematic analysis" (Fereday & Muir-Cochrane, 2006, p. 4) was used incorporating inductive thematic analysis with deductive analysis using a priori codes. The researcher identified themes inductively by carefully rereading the data until patterns were recognized. Analyzing text, artifacts, and images involved discovering themes and subthemes, "winnowing themes to a manageable few … deciding which themes are important in any project" (Ryan & Bernard, 2003, p. 85), building hierarchies of themes, and connecting themes to theoretical models. A priori codes (teacher dispositions, praxis, views of literacy) in this study were derived from the theoretical framework. Six stages of coding (Boyatzis, 1998; Crabtree & Miller, 1999) were recursively utilized: developing the a priori codes, testing code reliability, summarizing data and identifying initial themes, applying a priori codes, connecting codes and identifying themes, and confirming coded themes.

Findings

Findings indicated that blended online and face-to-face teaching and learning approaches that increased critically reflective interactions supported the development of Third Space teacher dispositions, praxis, and critical views of literacy. Findings are presented by subsidiary research question.

How did critically reflective interactions inform Third Space literacy learning opportunities provided for marginalized students in the field?

The researcher/instructor began providing Third Space content-area literacy learning opportunities for the pre-service teachers through blended instruction that increased critically reflective interactions in the classroom on the first day of class and continued throughout the course.

Providing Third Space opportunities in the classroom. The instructor contextualized the course and upcoming field experience requirements for the pre-service teachers as a blend of online and face-to-face teaching and learning approaches within Third Space theory. PowerPoint slides used as a backdrop for collaborative discussions among pre-service teacher content-area teams set the stage for a participatory style course that modeled Third Space experiences for the pre-service teachers.

The elaborate and required email assignment and assessment point sheet system was introduced and reviewed for portions of several class periods since it would take the place of more the more familiar hand-delivered and graded documents.

Figure 2 is a sample of the point sheet that kept an ongoing record of all emailed submissions and assessments throughout the course. The instructor interacted regularly with her students about their progress through this email communication system. For example, check marks denoted that an item was

received and complete; red font denoted an item needed revising and so on. After reviewing the required email point sheet system, the blend of other required email and face-to-face approaches of the three main course components were introduced, discussed, and organized among content-area teams: explicit generic strategy instruction from modules, CTS, and field experience preparation.

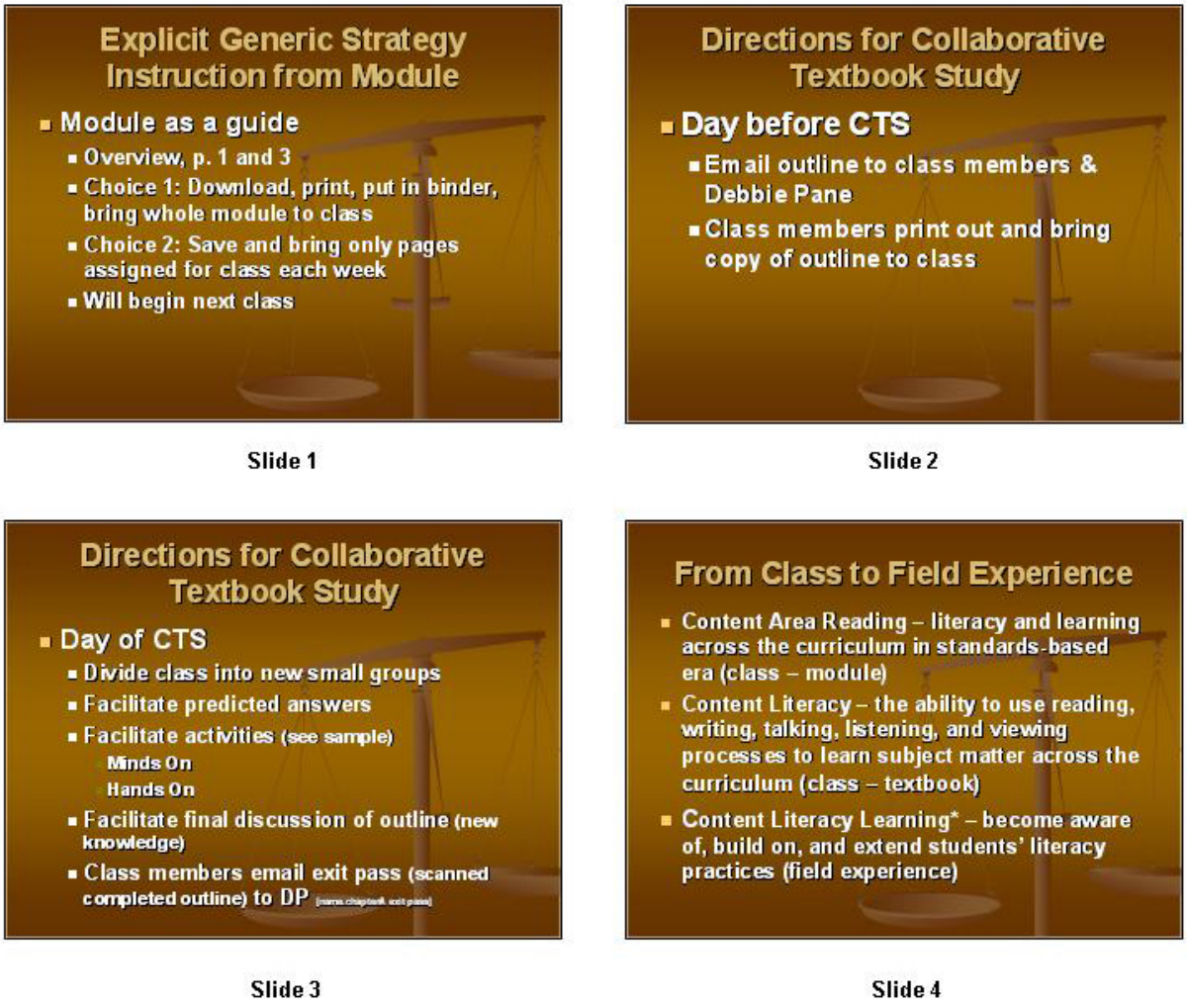
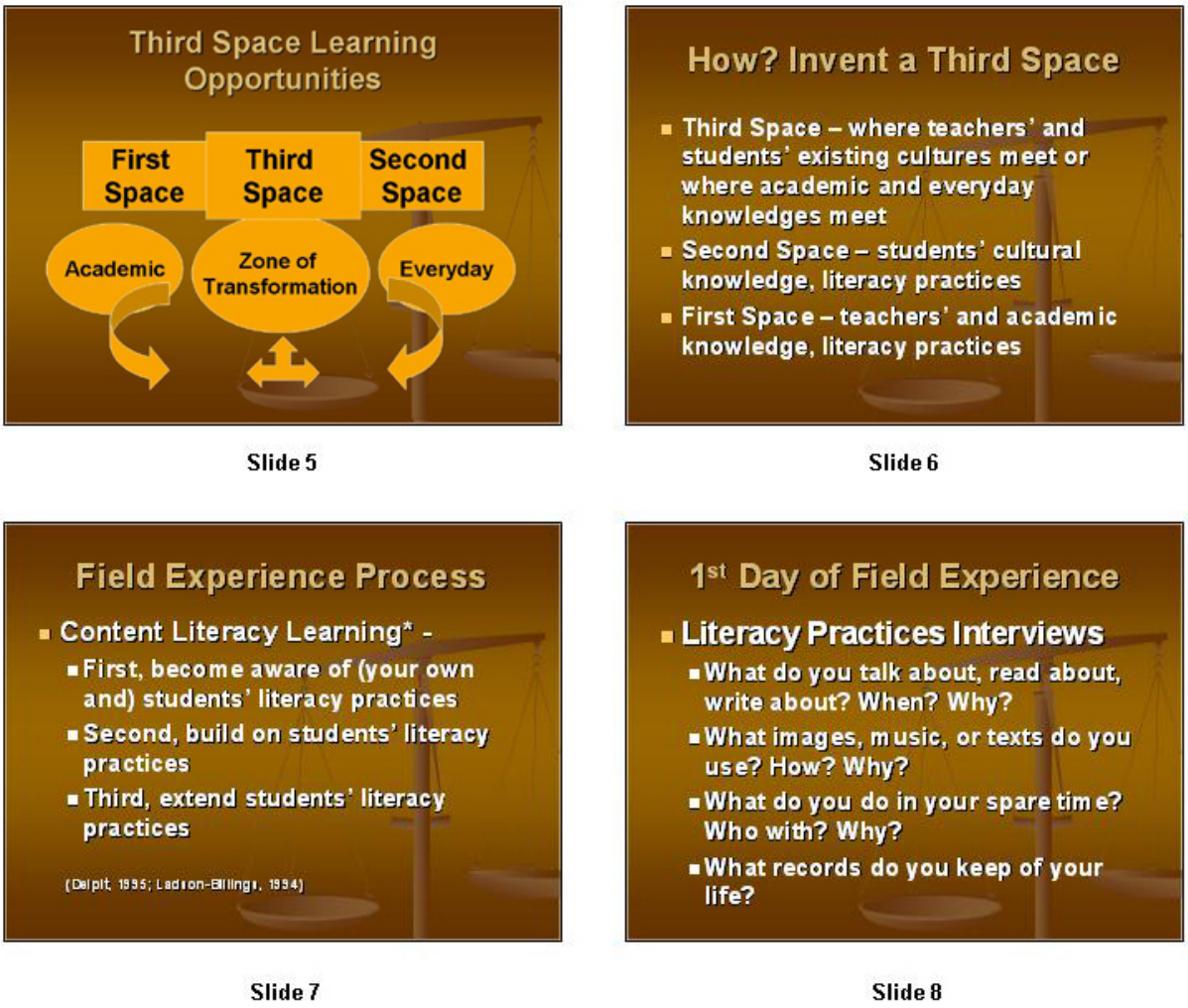


Figure 3: Introducing required blend of email and face-to-face approaches

In Figure 3, slide 1 lays the groundwork for the required blend of email and face-to-face use of the standard module for content-area strategy instruction. Slides 2 and 3 position email interactions with participatory classroom experiences among participants the day before and the day of the CTS. Then, a segue for introducing Third Space was provided with slide 4, differentiating between content-area reading (module), content literacy (textbook), and content literacy learning (field experience). After the required course components were delineated, Third Space was introduced.

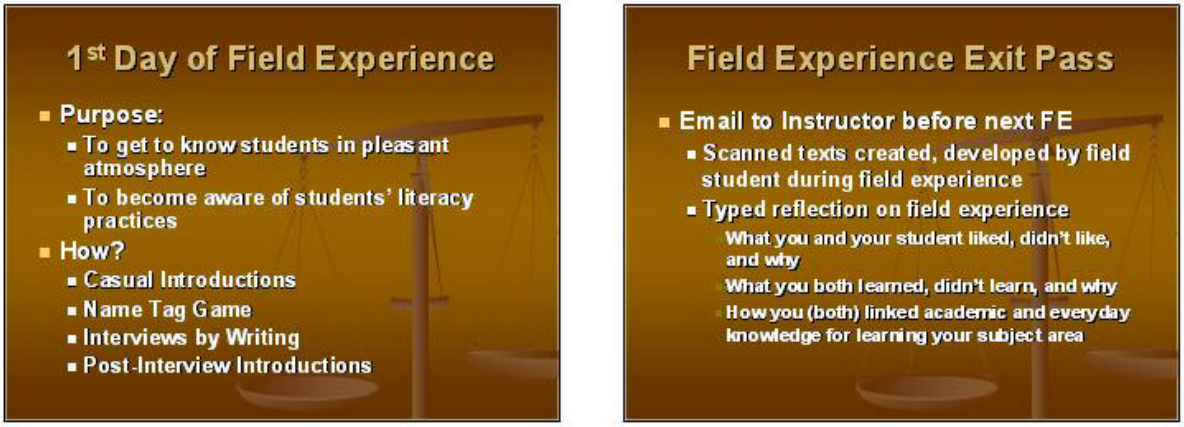


Slide 5 **Slide 6**

Slide 7 **Slide 8**

Figure 4: Introducing Third Space

In Figure 4, slide 5 was used to introduce the concept of Third Space teaching and learning opportunities. Slide 6 covered the meanings of first, second, and third space and how to invent a Third Space. Using slides 7 and 8 (see Figure 4) as a guide, studying their own and ultimately their students' literacy practices in the field experiences was modeled in collaborative pre-service teacher content-area teams. Since the pre-service teachers would be working with marginalized students in the field for the first time, a great deal of time was taken to discuss literacy practices (an unfamiliar concept) and how to invent a Third Space, or zone of transformation (also unfamiliar), before field experience processes were introduced (Figure 5).



Slide 9 Slide 10

Figure 5: Introducing literacy practices

With slide 9 (and others), the instructor walked the pre-service teachers through the concept of literacy practices in face-to-face activities to prepare for their first field experience of this course. Slide 10 covered required email directions of critical reflections after each field experience. All documents produced during classroom collaborations and field experiences were scanned and emailed to the instructor as part of the coursework and data for this study. For example, the document in Figure 6 is a representative sample of pre-service teachers' literacy practices from the written interview (practiced in class in preparation for the first field experience), scanned or typed and emailed to the instructor after class. Typical for most pre-service teachers, few mentioned the Internet or any mobile device as part of their literacy practices, indicative of the presumed gap between everyday (outside of school) and school knowledge.

Following the literacy practices interview, the instructor pursued an interactive discussion of the results. Many of the everyday literacy practices that students had omitted on paper (e.g., mobile and Internet technologies) were unearthed in the discussion, providing a bridge for embracing the concept of literacy practices in preparation for their first field experience when they were to conduct the same interview with marginalized students. For example, marginalized students in the field may omit spoken word and graffiti in their literacy practices interviews. As predicted, the marginalized students' interviews omitted everyday outside of school literacy practices (Figure 7).

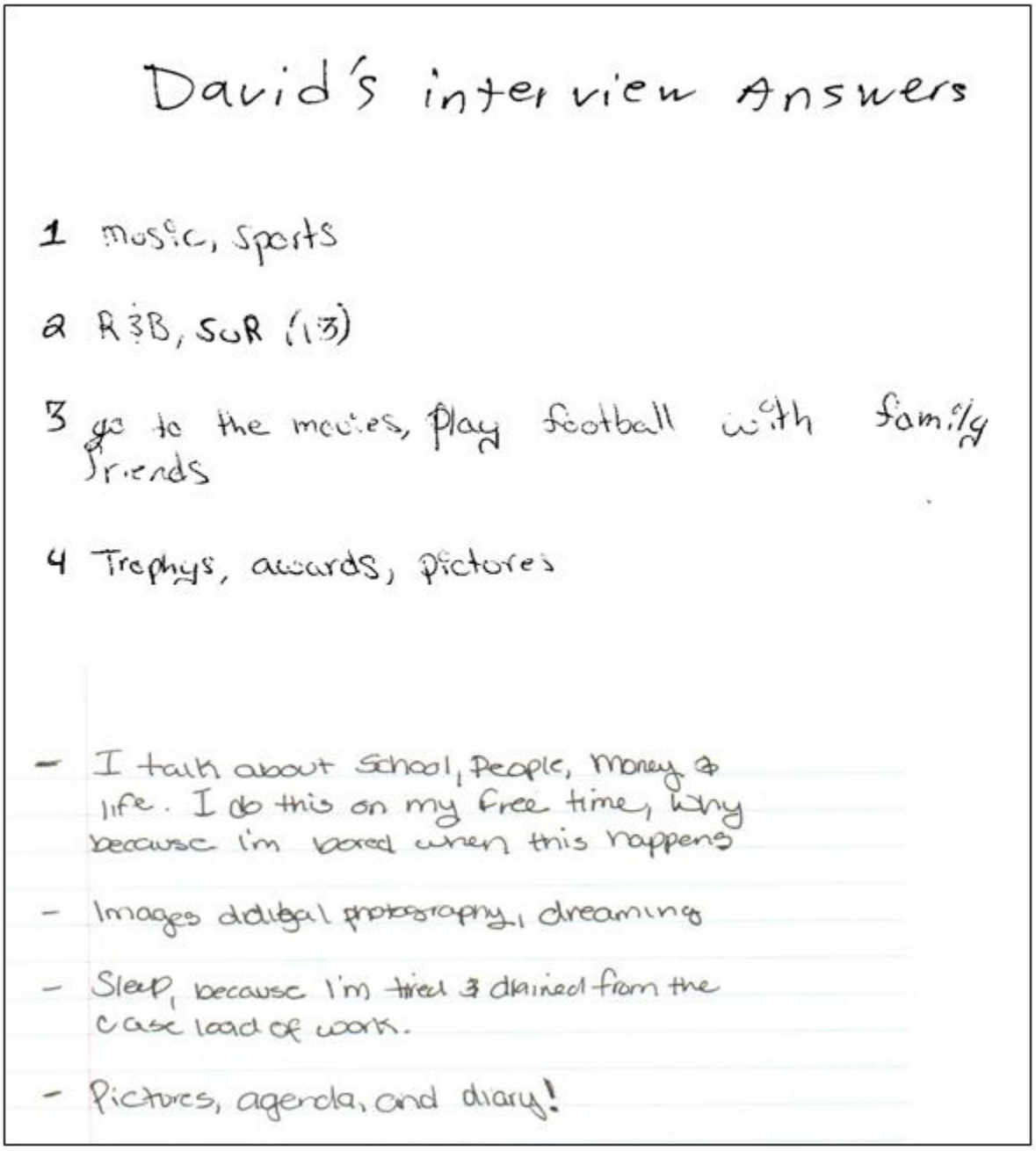


Figure 7: Student interviews

Providing Third Space opportunities in field experiences. After the first field experience, directions were reviewed and a collaborative discussion for the upcoming 12 field experiences was held with the content-area teams. Directions such as those on PowerPoint slide 11 were provided (Figure 8). The collaborative discussion pertained to what and how content-area teams were expected to complete face-to-face and email requirements before (preparation), during (documentation), and after (critical reflection) each field experience.

Figure 8: Sample directions for field experiences

As summarized on slide 11, for part of their coursework and data for this study, content-area pre-service teacher teams were asked to create and propose Third Space literacy learning lesson plans for each field experience after the introductory first day in the field. They were to collaborate online outside of class to prepare the lessons and determine how they would document each field experience. In preparation for each field experience, team lesson plan proposals were emailed to the instructor for approval, revised if necessary, and assessed on the point sheet (see Figure 2) prior to each field experience. Following each field experience, pre-service teachers individually and critically reflected on the Third Space literacy teaching and learning opportunities that were provided for their at-risk students during the field experience. Critical reflections addressed the three questions provided on slide 11 (Figure 8). The instructor suggested "teacher of at-risk student" films during the course to make up for absences and to further integrate course components and critical reflections with popular cultural media.

All field experience proposals (except the first one) were expected to rely on critical reflections of the previous field experience, thereby providing opportunities for pre-service teachers to develop Third Space praxis, teacher dispositions, and views of literacy. Representative samples of critically reflective data from several content-area teams document the process of how pre-service teacher teams critically reflected on, developed, and provided Third Space literacy learning opportunities in the field (Figure 8). The first two are representative of teams who worked with students at-risk of being involved in the juvenile justice system; the third is representative of teams who worked with marginalized students already involved in the juvenile justice system.

Community relationships. The "connective capacity" and "relationship" between teachers and students, each other, and the learning activities, an important concept in Third Space theory, was a common theme in the data, as exemplified in the Special Education teams' proposals and critical reflections (Figure 9). The team quickly responded to the opportunity of building on their at-risk students' likes and dislikes with progressively increasing success in subsequent field experience praxis. First, they came up with a name for the group that suited their students' personalities (Figure 10). Then, as noted in the ice cream-making proposal (Figure 11), "teamwork," also a priority in Third Space, was encouraged throughout the semester. Noted in subsequent reflections, the team more competently and confidently integrated literacy learning opportunities that met the students' interests in each field experience (Figure 12). The sample pictures (Figure 13) submitted as data reflect an outcome of successful Third Space literacy learning experiences—realization that one has connected with others in a community of learners and (co)constructed something meaningful.

Figure 13: Sample learning experiences

Opportunity to transform. The Math team proposed an "Imagination Station" to portray their Third Space teaching and learning goals (see Figure 14). A representative sample of pre-service teachers' first impressions is well stated in the exit passes (i.e., critical reflections) as most held certain prejudices about alternative education contexts and marginalized students until they were faced with the situation head on and given the opportunity to transform it.

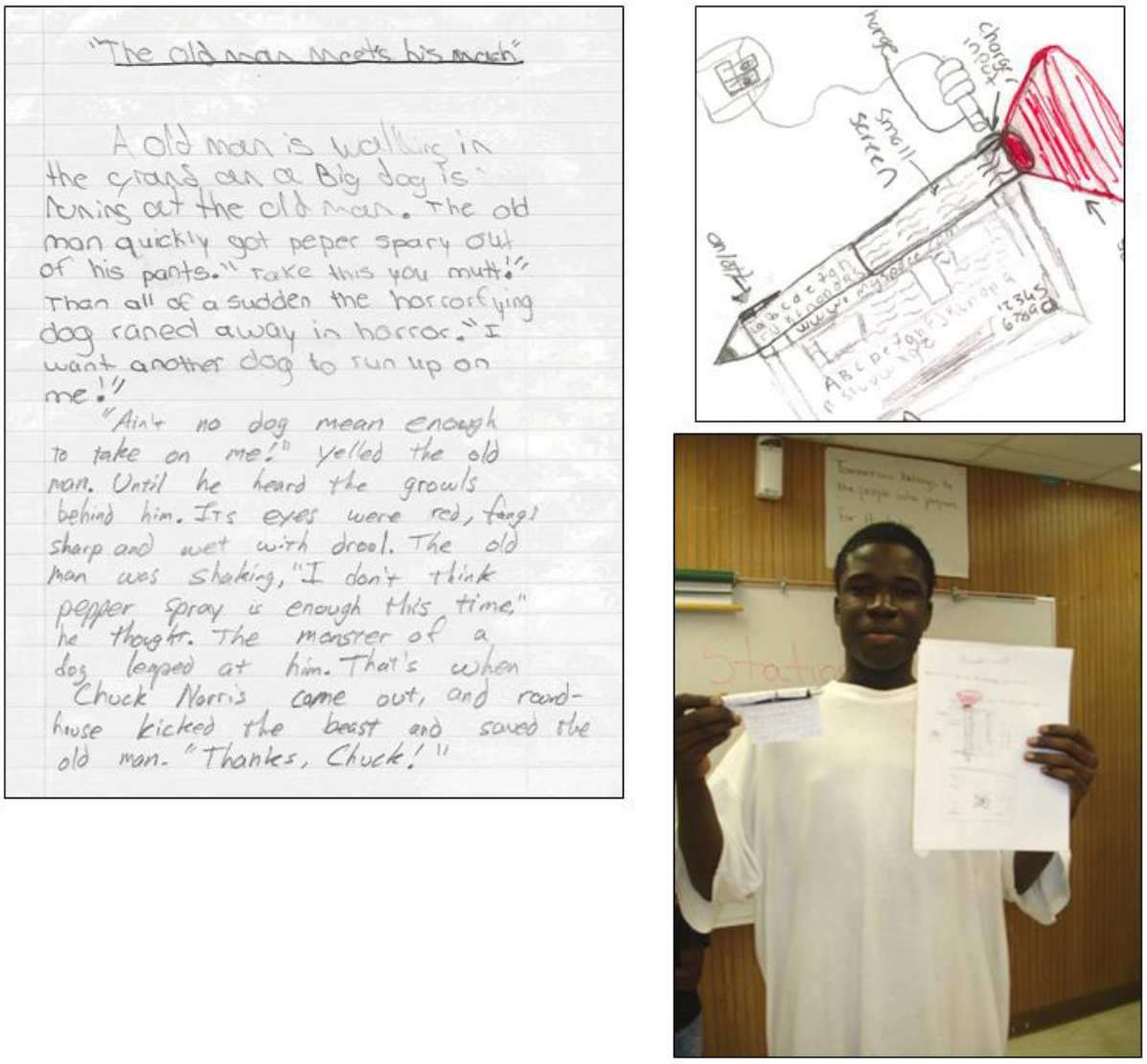


Figure 17: Data representative of Third Space provided for at-risk students: transformation

As noted in the first exit pass, field experiences were greeted with initial reluctance (Figure 14). However, initial reluctance quickly moved into a Third Space goal setting and proposal mode for subsequent field experience lessons (Figure 15). After the first field experience, the Math team began critically reflecting via their emerging Third Space teacher dispositions on the Third Space opportunities they were providing with much success (Figure 16). The pictures and texts produced during field experiences and documented as data (Figure 17) represent what they wrote in their critical reflections (Figure 16) of the team's successes in providing Third Space literacy learning opportunities.

From conflict to community. Experiences of the content-area teams that worked with marginalized students who were already involved in the juvenile justice system brought different responses from participants. Pre-service teachers discussed among themselves and individually and critically reflected about the differences in working with at-risk versus marginalized students (Figure 18).

First, the everyday experiences of the students in the field reflected time spent in jail. Second, the data from field experiences with the marginalized students exemplified initial success (Figure 19) but growing

conflict and frustration during attempts to provide Third Space literacy learning opportunities (Figure 20). This document is a critical reflection of what happened mid-way through the semester; conflicts and frustrations had gotten to the point that the instructor intervened to provide guidance in a way not necessary for the groups working with students who were at-risk and of a wider age range but not already involved in the juvenile justice system. This pre-service teacher named what happened—reconstruction.

As noted in several another critical reflections (Figure 21), the teams were initially successful but soon were not congealing and the students in the field were not interested. From years of experience with conflicts that occur among teachers with this population and context, the instructor proposed the "reconstruction" of field experiences in an email to get the teams started off on a new foot for the next field experience. This explicit guidance within Third Space was accepted by the teams and used as a springboard to develop more successful Third Space approaches (Figure 22). They proposed to divide up into three teams based on the "reconstruction" intervention: the trust, historical, and anger management groups. From there, a community bond among participants was accomplished, even amidst conflict, (Figure 23) in their renewed critically reflective Third Space praxis.

Figure 24: Representative sample of Third Space process with marginalized students

Based upon their emerging critical views of literacy, the Trust group built upon the concept of trust in each field experience as depicted in picture data of a trust activity they conducted (Figure 24). This Third Space activity, which provided a successively smaller square of material on the ground for students to crowd onto, signified a move toward Third Space teacher dispositions that simultaneously led to transformed student learning outcomes. Seeing youth who are labeled delinquent smiling and crowding onto a very small square of material on the ground illuminated the concept of community for the pre-service teachers and their students in the field.

Also based on emerging critical views of literacy, another breakthrough in the process of developing a community of learners among people who were previously at odds with each other was heartily welcomed and built upon among the historical group.

One team member began his critical reflection:

This week's historical lesson was derived from a question that stood out from our previous visit to The Academy and diverges from previous historical lessons. The question "Where did white people come from?" (Figure 25) stood out to many of us and we thought it would be interesting to explore this question with them further. Instead of basing our lesson on an individual, as in previous weeks, we have decided to tackle the problem of not only where did white people come from, but where did *you* come from. Through the use of a family tree and a sample supportive text, the goal of our discussion is to use family history or natural history to show that all humans are very similar in terms of the origin of our ancestors with the hope of discrediting any form of racism. (see Figure 26)

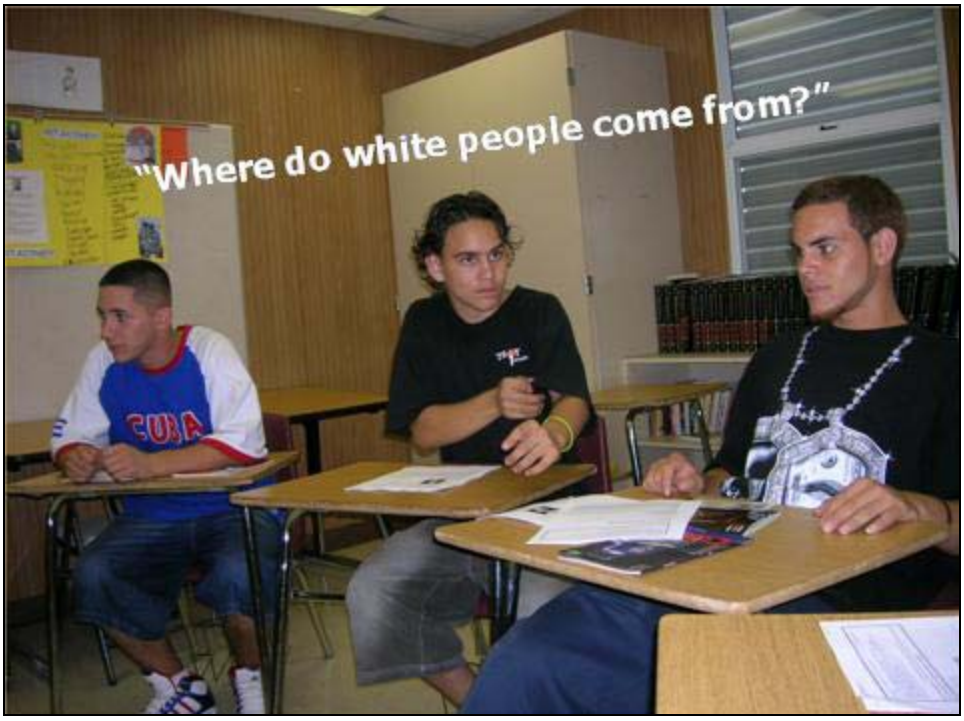


Figure 25: Representative sample of Third Space process with marginalized students

Comments (in red font) made by the instructor on the critical reflection and emailed back to the student who wrote it is representative of how Third Space mentoring was provided for pre-service teachers (Figure 27). The instructor had observed one teams' use of a family tree during part of the field experience lessons. However, as noted in the red font response, the instructor was unaware (before reading the critical reflection) of why the team was using the family tree. After reading the critical reflection, the instructor better understood their thinking process and could, thereby, mentor the students accordingly toward Third Space teacher dispositions.

What evidence of transformations in student learning experiences and outcomes was provided in final critical reflections?

Content-area teams' required final reflections ultimately relied on critical reflections of all previous interactions during the course, thus providing interactive yet succinct evidence of Third Space praxis, teacher dispositions, and views of literacy. Overall, Third Space literacy learning opportunities were viewed as an essential, empowering, and transformative experience for pre-service teachers to learn how to work with marginalized students and for marginalized students to be given a chance to succeed in school. The evidence provided in this section represents pre-service teachers' final reflections of Third Space.

In their final reflection, the History/English content-area team defined the concept of Third Space for literacy learning opportunities as a "3rd space of interaction" between teachers and students gained through motivation (to play chess). Embellishing on this concept, they combined literacy with interactive learning to introduce each field experience. They accomplished Third Space by integrating historical, cultural, and social aspects (i.e., critical views of literacy) of chess, framing it as a mind game for the students (see this video, and Figure 28) When given the choice, students of all ages would wait in line for and play overtime at this "center."

In their PowerPoint slideshow, the Special Education team critically reflected on how they accomplished Third Space by developing the group or community mentality among each other and literacy learning. For example, one field experience began with students reading the recipe for homemade ice cream as they followed the directions. The interactive literacy lesson concluded with students getting to eat their final product, the ice cream. Through emerging Third Space teacher dispositions, these pre-service teachers encouraged "new ways of looking at things" to develop their concept of Third Space.

The PowerPoint slideshow of the Social Studies content-area "History and Community" team depicts the concept of Third Space: gaining unity, community, strength, and synchronized bonding as a result of working with students different from themselves. They summarized "our third space" through an emerging critical literacy lens. They developed their Third Space by concentrating on students' involvement in understanding their place in the world and creating a space in which everyone is valued. In this space, literacy was developed by using images and texts from outside resources, evidenced in lesson planning emails (Figure 29). For example, making collages (see Figure 30) provided a base for building on communication to learn about students' interests. From there, lyrics and biographies of persons from students' backgrounds were brought in and used during the field experiences to accomplish their Third Space.

Figure 30: Third Space of history and community

The (post-reconstruction) Trust team, composed of various content-area members, developed their Third Space through the concept of trust after listening to students' goals for their lives. They also incorporated

literacy, positive communication, and motivation into their discussions, building Third Space through trust-building activities. By merging action with critical reflection, Third Space praxis developed (through conflictual feelings and situations) over the course of the field experiences (see Figure 31).

This slideshow shows how the content-area team used challenges to drive imagination and creativity for what can happen in the future. The Third Space thinking of the content-area math team who created the "Imagination Station" is illustrated in how their changing view of literacy was integrated into their students' artistic interests. Additionally, they referred to their "Imagination Station" as the vehicle for creating the Third Space between themselves and the students. They reflected on the importance of communication in the process of building Third Space literacy learning opportunities. They put it this way:

The Imagination Station created the "third space" between us. We all had our literacy skills but when we got together we all communicated in the same way (using our imagination), and this is exactly why we were able to see their literacy skills.

Overall, the teams realized that Third Space is developed through the empathy of the teacher. Understanding where students "are coming from", thereby developing healthy interactions, group development, reconciliation with history and community, trusting bonds, and respectful relationships between teachers and students through imagination into the future stood out as Third Spaces to build on for productive classrooms.

The instructor's final reflection provides the story of critically reflective interactions (increased through blended teaching and learning approaches) with exemplars of observed evidence of the development of Third Space teacher dispositions (which necessarily precede views of praxis and critical literacy) during the course. A collage of Third Space possibilities across content areas are illustrated through the emerging Third Space dispositions of pre-service teachers, critically reflected on and submitted as data to document their experiences. From the analysis of data and the instructor's point of view, the quality and quantity of critically reflective interactions tapped the transformative potential of blending online and face-to-face teaching and learning approaches.

Unexpected Findings

In addition, two unexpected findings occurred as a result of this study. First, the film critique assignment (viewed in the format of choice) was initially a spontaneous make-up assignment for absences in order to stress participation and to increase exposure to critically reflective interactions about teacher/at-risk or marginalized students in general in as many ways as possible throughout the course. However, upon analysis of the data, an unforeseen extensiveness of Third Space critically reflective connections had been made in the film critiques (see Figure 32 and Figure 33)

The Third Space critically reflective connections reached into their everyday lives as noted when one pre-service teacher realized his friends' harbored societal prejudices (see Figure 32). Connections extended into their professional lives as well (see Figure 33). As a result of the unforeseen value of critiquing films, required online viewing and critically reflecting in online communities of inquiry (rather than only for make-up work and in format of an individual's choice) as part of blended teaching and learning approaches is proposed for future inclusion in course components to more fully tap the potential transformative opportunities of blended instruction on Third Space dispositions, praxis, and critical views of literacy.

Second, on the whole, individual pre-service teachers submitted unsolicited Third Space connections in their teacher dispositions pertaining to recommendations for teachers and working with marginalized students in the future. The pre-service teachers had found a Third Space in which they could problem solve, interject their reflections, and look into the future with hope. Unsolicited comments augment the findings that blended online and face-to-face instruction that increases critically reflective interactions support the development of Third Space praxis, teacher dispositions, critical views of literacy, and competence/desire to work with marginalized students in the future.

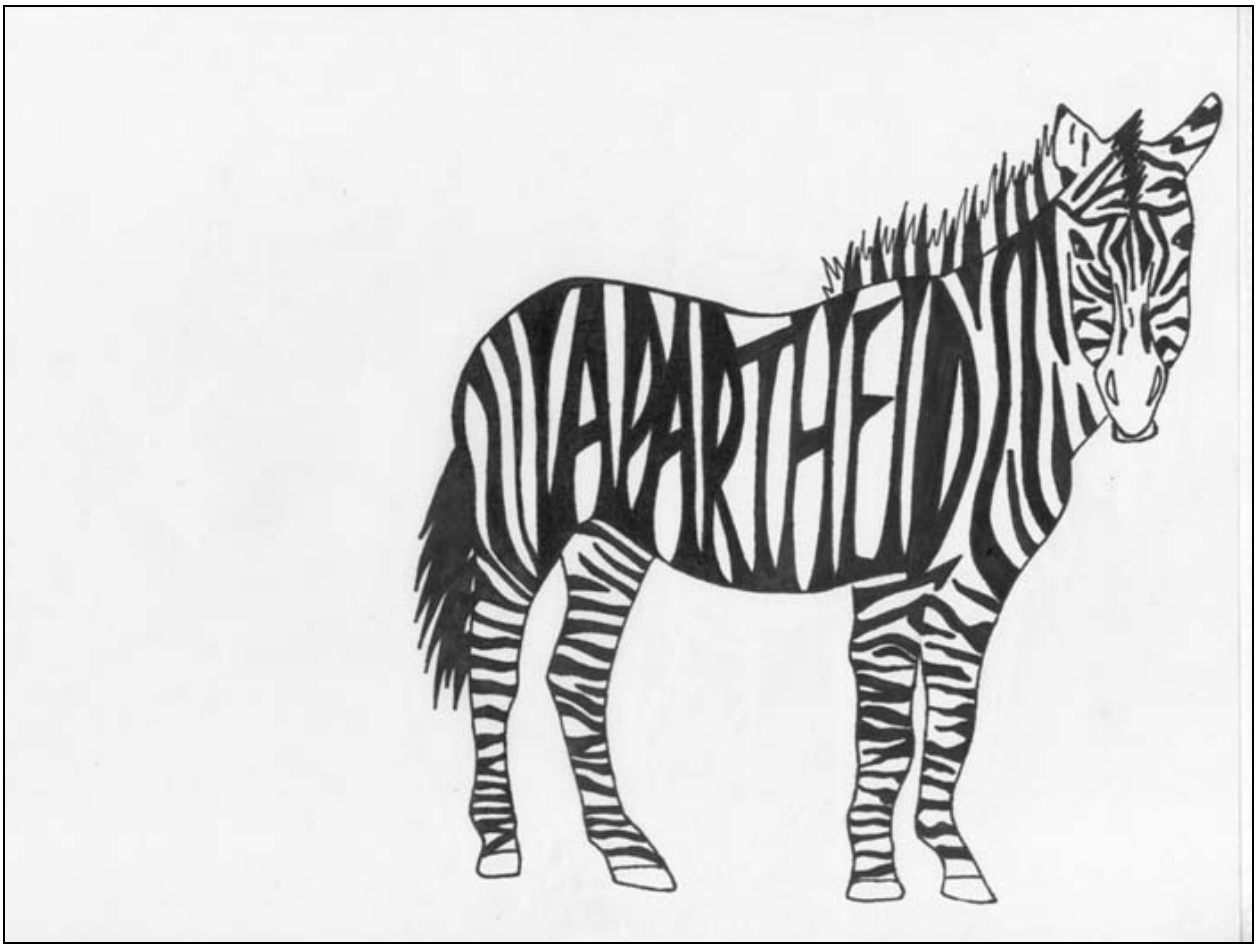


Figure 34: Final Third Space connections in teacher dispositions

A large part of one class period (when pre-service teachers were sharing their efolio artifacts with the whole class) was used to discuss “apartheid” in context with the marginalized students in the field. The discussion was based on one of the pre-service teachers’ efolio submissions that visually represented what most of the pre-service teachers desired to overcome with Third Space—apartheid (Figure 34). In order to collect exemplars of the co-construction of praxis, teacher dispositions, and critical views of literacy in Third Space communities of inquiry in future courses and studies, video capture of all classroom discussions is recommended..

When The Academy students made a trip to The University for their last field experience, final and unexpected connections were made between the two groups who were initially worlds apart (Figure 35). Comments made about the skeptical feelings in the beginning compared to feelings of empowerment in the final moments of working with marginalized students exhibited emerging Third Space teacher dispositions for many of the pre-services teachers.

Finally, unsolicited critically reflective comments were also submitted after the last class to summarize what had been learned during the semester. For example, after the final reflection slideshows, one student emailed a comment that she

was taken aback by my fellow classmates’ inspiring and truthful reflections. I wasn’t able to write much on the table/rubric you provided because I was so engrossed in reading every word on the slides. To be honest, I have never been a fan of writing reflections. I always thought: “I know what I learned…I was just

there, why should I have to write about it". However, yesterday's experience totally changed my mind. I think that reflections are important but it is vital for us as students to see the big picture. There is something wondrous about seeing our writings on a big screen. Being able to share our thoughts and feelings anonymously with our peers and seeing the impact of OUR words on their faces, forces us to see the power in our words. I have always wondered how authors could write such powerful words. Every time I wrote something it always seemed elementary and weak but now I have realized that it is important to reflect. Take time apart from what we write and read it again at a later time. The cohesiveness and unity of our class was so beautiful it was almost magical. Every PowerPoint flowed unto the next as though we had written them as a group. Thank you for that wonderful experience.

This student realized the value of her experience as she read and critically reflected on what the other groups had learned during the semester. These and other comments augment the findings in this paper. Blending online and face-to-face learning approaches to increase critically reflective interactions help support the development of Third Space by allowing each person to bring what he or she knows to the table and to develop in their own way in a community of learners. This finding supports theoretical and practical elements of successful situated teaching and learning as well as transformative literacy teaching and learning. Third Space seeks to deal with conflict and differences to produce critically reflective teachers who strive to produce equal outcomes for their students. Blending required online submissions and assessments that pre-service teachers were familiar with and gave them the time to tackle participatory, face-to-face, and student-led teaching and learning. In the end, they surpassed all "requirements" in both areas, which is to be expected in blended learning and in Third Space theory.

Conclusion

This section is a discussion of the conclusions from this study in light of the central research question: How did a blend of face-to-face and online instruction support the development of Third Space in a content-area reading education course requiring field experiences with at-risk, marginalized students?

A blend of face-to-face and online instruction provided the researcher/instructor the opportunity to potentially transform student-learning experiences and outcomes for pre-service teachers and marginalized students simultaneously. In the non-blended predecessor of this blended course, the instructor was unable to adequately explain how students who are "written off" in schools and society are waiting for teachers who will urge them to learn in creative ways. The instructor was also unable to provide textual materials that were in-depth enough to enlighten pre-service teachers to the transformative qualities of conflict that occur while simultaneously combining familiar (traditional) and unfamiliar (nontraditional) teaching and learning methods and activities for/with their students. Blending instruction allowed the researcher/instructor to challenge pre-service teachers who entered the course fearful of the unknown to collaborate on uncharted pedagogical territory.

Before blending instruction across course and field experiences, the instructor was unable to share the transformative learning opportunities and outcomes she had experienced at The Academy by combining (counterintuitively) socialization opportunities with the high-tech learning possibilities of the Internet. She was unable to successfully encourage pre-service teachers to take risks themselves in their field experiences by combining face-to-face and online instruction. They had had no prior experiences with blended instruction as formatted in this course. Therefore, by providing blended instruction in the course that was expected of pre-service teachers in the field, the instructor was able to provide a space for transformative learning opportunities and outcomes for both future teachers and their students.

The instructor had to redesign the entire course, instructional model, and blend of face-to-face and online components to achieve transformative possibilities. By shifting from lecture expected in the non-blended predecessor to a student-centered blended course, interaction increased among all participants, outside resources, and uncharted school situations. If nothing else, pre-service teachers left the course understanding how a blend of face-to-face and online instruction increases collaboration and thus understanding of others. The instructor also discovered unexpected transformations during the course and field experiences. Beyond this, blended instruction as proposed in this study reminds those who were

involved that all students (and teachers) can learn to reduce their fear of the unknown (e.g., teaching and learning differently) and learn more readily if they are offered the opportunity of combining the familiar with the unfamiliar (depending on the expertise of participants) during the learning experience.

Additionally, a blend of face-to-face and online instruction supported the development of Third Space in the content-area reading education course requiring field experiences with marginalized students. When required to critically reflect on content and pedagogy, pre-service teachers began tearing down boundaries between themselves and the students who were marginalized in school and society. Their concerns developed within the meanings constructed in the social situation of the field experiences. Critically reflective teachers understand that knowledge and experiences are dynamic as exhibited in the themes that emerged in the data. As shown in the theoretical framework of this study, critically reflective teachers understand that socially-situated meanings adapt to the place, time, and across people and artifacts in a community of learners and, thus, are open to transformations from new experiences, an idea that revolutionizes learning and teaching. In the short time spent with their students in the field, transformations occurred in pre-service teachers' thinking about being empowered to provide Third Space literacy learning opportunities. One student summarized: "As educators, it is our responsibility to believe in these kids, provide these opportunities, and never lose sight of their potential."

Couched in their own developing Third Space language, the pre-service teachers left the course exhibiting newly developed understandings of the need to expose students to various Discourses so they can eventually critique taken-for-granted notions whose meanings are socioculturally constructed. Discourse-based, situated, and sociocultural views of literacy demand critically reflective teachers who see multiple literacies and sociocultural and political meanings in practices and in the world of texts (e. g., learners' experiences, written texts). In this case, each content-area major pre-service teacher was asked to see literacy through his or her own subject and incorporate it into the Third Space opportunities provided to the students. They discovered through the required blend of online and face-to-face experiences that socioculturally-, politically-, and historically-constructed literacies and Discourses may lead to conflict, empowerment, and transformation of our world for specific purposes, times, and places among a community of teachers and learners.

Critically reflective teacher dispositions (and developing Third Space thinking) broke through the reductive content-area expertise that the majority of pre-service teachers brought into the class. Critically reflective teaching and learning can begin to reconstruct democratic societies by implicating educators and political leaders to create a new literacy of reflectiveness grounded in educational praxis that does not segregate or exclude others from ourselves, but will: (a) identify objectives of the inherited dominant literacy; (b) analyze how the methods used by dominant schools for literacy instruction function; (c) be informed by radical pedagogy which will use a critical spirit to make creativity, possibilities, and social responsibility visible; (d) prioritize emancipatory ideology; (e) reject mechanical skills approaches and embrace the reading of ideological and historical contexts; (f) reject traditional approaches to reading instruction; (g) be based on emancipatory participation in the transformation of societies; and (h) critically comprehend texts with a goal of reconstruction of schooling.

Critical reading becomes a reading within the social context to which it refers and is grounded in critical reflection on the cultural capital of the oppressed (i.e. both mainstream and non-mainstream students or teachers). Critical literacy becomes the vehicle by which to equip teachers and students with the necessary tools to co-construct their history, culture, language, and pedagogical practices. Critical reading and critical literacy were a Third Space that was initiated by blending face-to-face and online teaching and learning in this study.

In conclusion, blended required face-to-face and online teaching and learning experiences and assignments that increase critically reflective interactions offered a backdrop of choice, open discussion, and encouragement for pre-service teachers, and ultimately their field students, to begin to experience transformative literacy teaching and learning, a Third Space. Blended teaching and learning supported the development of Third Space by offering the pre-service teachers a springboard for intertwining theories and perspectives indicative of critical and reflective educators, researchers, and practices. As a

result of using required blended teaching and learning approaches that increased critically reflective interactions, much more was accomplished toward the development of Third Space in a content-area reading course requiring field experiences with marginalized students than would have been possible with face-to-face or online approaches alone.

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