FACULTY GENDER AND STUDENT-CENTERED PEDAGOGICAL APPROACHES IN THE USE OF A COURSE MANAGEMENT SYSTEM

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The use of technology for instruction continues to increase and is playing a more significant role in higher education (DeAngelo et al., 2009). As instructional technology has become a more integral part of college and university teaching, researchers have noted gender-related differences in regard to faculty approach, perception, and implementation of technology (Campbell & Varnhagen, 2002). While research investigating traditional classroom settings has suggested that female faculty have historically shown a stronger preference for student-centered pedagogy as compared to male faculty (e.g., Lammers & Murphy, 2002; Statham-Macke, 1980), fewer studies have focused on how potential gendered pedagogical preferences translate into use of and approach to instructional technology in higher education. Consequently, it is important to investigate faculty gender and pedagogical preference in the application of instructional technology in order to inform practice within institutions of higher education.

This dissertation investigates what happens when male and female faculty use a course management system (CMS) to present all or part of their instructional program online through the use of qualitative methods. A comparative case study grounded in a theoretical framework based on Women's Ways of Knowing and feminist pedagogy guided analysis of data collected from faculty interviews, course observations, and content analysis of syllabi.

After considering the narratives of the eight faculty participants in this study as well as course observation and document analysis, several speculative results emerged, including the

notion that female faculty participants may be more likely to invite student feedback on their course. I believe that engaging students in the construction of the online component of the course may suggest that female faculty are more critically reflective of their instructional program online. In addition, females may be more likely to encourage the formation of an online community. The encouragement of student interaction in the course is considered to be more student-centered because it encourages a more democratic construction of knowledge. While there were differences based on the context of each course, female faculty respondents were more likely to use multiple ways to interact with students and offer their feedback and support. The integration of student experiences with course content and use of technologic functions resulted in intentional personalization of the course for students.

Type of presentation (online versus hybrid) and level of instruction (graduate versus undergraduate) also were related to student-centered instructional approaches to the Blackboard CMS, as I observed in this study. The online faculty used the technology more heavily than did the faculty teaching face-to-face, most likely a function of the goals of the respective types of instructional programs. The graduate courses, in general, were more likely to include student discussion leading to a more democratic construction of knowledge, a testament to the specific aims of that type of course. Findings are discussed with respect to their implications for understanding gendered patterns of the use of instructional technology.

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I'm on my way to the future she said & I said, but you're just sitting there listening & she smiled & said, it's harder than you'd think with all the noise everyone else is making- Brian Andreas

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1.0 INTRODUCTION

Advancements of computer technology in recent years have resulted in a dramatic increase in faculty use of electronic courseware for the development of instructional programs in higher education. The growth of the field of educational technology, due to an increased reliance on computers, has been attributed to the ascendancy of course management systems (CMSs) in academia. CMS is the formal name given to comprehensive software packages that include integrated tools for both database and web functions. These packages are designed to support certain aspects of course preparation, delivery, communication and participation.

The utilization of CMSs by institutions of higher education began in the late 1990s in response to a lack of easy-to-understand instructional tools to support faculty usage of technology for teaching (Collis & De Boer, 2004). Several CMSs now exist and are referred to by "brand names" including *Blackboard, WebCT, ANGEL, Desire2Learn, Moodle,* and *Sakai*. It should be noted that both WebCT and ANGEL are owned by Blackboard. CMSs have become critical tools for faculty as a means to create an effective online learning environment. With the proliferation of these tools, the utilization of CMSs has dramatically increased over the past two decades. Recent data from the 2009 Campus Computing Project – the largest national survey of the use of information technology in higher education since 1990 – estimated that 92% of participating institutions adopted a single CMS product for the entire campus. Further, the study reported that as of fall 2009, 55% of classes make some use of a CMS as compared to 50% in

2007 and 34% in 2003 (Green, 2009). Of the CMSs available on the market, Blackboard is the leading CMS in terms of institutional adoption in higher education (Green, 2009).

In order to effectively facilitate the process of faculty use of instructional technology in higher education, it is important to consider differences in the way that individual college and university faculty members adopt and make use of such technology. More specifically, knowledge of the varied manner in which men and women utilize CMSs holds potential for optimal implementation of these burgeoning instructional tools. Gender-related differences in the priorities of faculty have been reported whereby female faculty spend more time on their teaching and service duties and less time in research, as opposed to their male counterparts (DeAngelo et al., 2009). In terms of differences in instructional programs, women are more likely to apply student-centered learning to instruction than male faculty members (Zhou & Xu, 2007). Therefore, female faculty associate curricular and instructional decisions in their students' personal experience, a hallmark of democratic education which is inclusive of "often excluded racial and gender groups" (Colin & Heaney, 2001, p. 30). The purpose of this dissertation is to uncover gender differences in the use of instructional technology in regard to integration of student-centered pedagogy through an investigation of the manner in which CMSs are utilized on a university campus.

This dissertation captures my transition from a positivistic to interpretivistic research tradition. My work represents movement to interpretivism, rather than complete immersion, a direct reflection of where I am in my development as a researcher. I was drawn to shift to this type of inquiry because of its ability to "understand and explain human and social reality," which I believed to be critical to the study of gendered differences in student-centered pedagogical approaches to instructional technology (Crotty, 1998, p. 66-67). The purpose of my study was to

seek insight into how men and women use instructional technology, in this case Blackboard, to convey their instructional programs to their students which could not be considered appropriately in a positivistic tradition. More deeply, the transition to interpretivism was a result of an innate shift in my understanding of what it means to understand. I moved from accepting the notion that an objective reality can be known to being more open to a deeper understanding of human reality in relation to unique situational contexts. This transition has been informed by my background as well as reflection on my worldview which are considered to follow.

My education and professional endeavors thus far have been primarily focused in biology, a discipline in the natural sciences. I continue to teach biology at the collegiate level both in person and online, an important aspect of situating myself in the study, a point that was addressed in chapter 4. I have been deeply grounded in a scientific tradition through learning and teaching in the natural sciences. The consideration of transition to a qualitative mode of inquiry for use in my dissertation came after having been introduced to this type of research during doctoral course work. An introduction and study of interpretive inquiry as part of my dissertation journey has fundamentally changed what I think and do and therefore, how I approach teaching. For example, I now begin my lecture courses in science with an introduction that relays to students that science, as we learn in my course, is just one way of knowing and understanding phenomena, a notion that I had previously not considered, let alone incorporated into my instructional program. My background and training is also reflected in my dissertation in regards to the language used throughout.

In terms of a consideration of worldview, Piantanida & Garman (2009) define this term as comprised "for research purposes the most relevant beliefs" of epistemology (what is true), ontology (what is real), and axiology (what is valuable) (p.46). One possible qualitative

epistemology is feminist epistemology, which I have included as part of the theoretical frame of my study and to which I identify. Crotty (1998) explains that the definition of feminist epistemology can be problematic, but may be thought of as arising from a shared belief and valuing of equality for woman that then translates into a way of conducting research that incorporates this perspective. I believe that women and men have the tendency to do things differently as a result of the way they have been socialized. There have been several events in my own life that have drawn me to feminism as scholarly work and school of thought. Early events drawing me to this perspective took place as an undergraduate student enrolled in an elective in Women's Studies, which introduced me to the theory that seemed to explain what I was experiencing. This theory-enlightened experience was further cultivated by personal narratives of female students joining together as a group of "survivors" in the Women's Center at our university. Ontologically, in terms of this study, I believe that the experience of each faculty member with an instructional media in the form of a course management system is based on their representation in course observation, syllabus content and narrative communication. Axiologically, their experiences are dependent upon the differences in contextual factors, which were defined in this study as type of presentation (online or hybrid) and level of instruction (graduate or undergraduate).

A challenging, yet significant part of this process was identifying and defining myself as an instrument of inquiry which at first, I could not concede because I lacked the confidence to do so. This echoes the process through which I selected the theoretical framework for this dissertation, that of coming to recognize myself as someone capable of sharing and contributing to the field of education through interpreting meaning and conveying that meaning through writing. This is a theme that is echoed in Women's Ways of Knowing as the knower moves

among five perspectives from silence (knower is voiceless and subject to external authority) to constructed knowing (knower decides how to construct knowledge based on contexts) (Belenky, Clinchy, Goldberger, & Tarule, 1997). In reflection, I had to accept that I was capable of making a contribution through my research before I was able to complete the analysis of data. In order to come to this new definition of myself as an instrument of inquiry, I drew upon the stories of my colleagues professionally and as part of my doctoral program. These conversations can be perfunctorily captured as one peer told me: "if they can do it, then why not me?"

1.1 STATEMENT OF THE PROBLEM

The use of technology-enhanced instruction may perpetuate the "socio-cultural complexity" in regard to gendered differences that exist as a result of the interplay of social, political and economic forces, at the base of which is "inferior levels of access and technology literacy and dominant male behavior" (Gunn, 2003, p. 14). Some research supports the notion that technology is gendered as the primary designers of hardware and software have been male (Bromley, 1998; Cockburn & Ormond, 1993, Spender, 1995). If technology is gendered, then there is a socially-constructed relationship between the use of technology and gender such that "the politics of technology could continue to disenfranchise individuals on the basis of gender" (Bryson & deCastell, 1998). As compared to women faculty, male faculty members are more likely to express confidence in their ability to organize and execute courses of Internet actions (Thompson & Lynch, 2003). Moreover, male instructors at the university level have reported greater expertise and confidence in their ability to use computers than females (Zhou & Xu,

2007). Despite differences and apparent disadvantages, women have been found to be more likely to use technology as part of their instructional programs, specifically in regard to the communicative functions of the technology (such as electronic mail) (DeAngelo et. al., 2009). Therefore, gender-related differences may exist in pedagogical approach to the incorporation of technology as part of instructional programs.

In terms of differences in their approach to instruction, female faculty are more likely to incorporate an ethos of caring in terms of a sound linkage to classroom relevance as part of their instructional programs as opposed to men (Crooks, Yang & Duemer, 2003). Furthermore, female faculty members were found to be more likely than their male colleagues to consider students' learning needs in their decision to use technology for instruction. Specifically, females embed instructional technology in their pedagogy, while male faculty are more likely to consider the technology first and pedagogy later (Peluchette & Rust, 2005). Student-centered practices such as engaging students in discussion and questioning students before the presentation of new concepts were found to be more frequently used by females as compared to males (Zhou & Xu, 2007). The problem therein is whether "female faculty, who as learners may have been affected by consistently reported gender-related barriers have been socialized to technology in ways that might have an impact today on their instructional decisions related to educational technologies" (Cambell & Varnhagen, 2002, pp. 35-36).

1.2 THE RESEARCH QUESTION AND ITS SIGNIFICANCE

In light of the specific purpose of the proposed study, to explore gender differences in pedagogical preference in the implementation of instructional technology through use of a course

management system, the research question for this dissertation was constructed so as to "investigate the topic in all its complexity and context" (Bogdan & Biklen, 2007, p. 2). The research question is intentionally broad so as to allow for the discovery of emerging themes in the process of data collection. The research question of the proposed dissertation is:

> *What happens when male and female faculty use a course management system to present all or part of their instructional programs to students?*

It is important to investigate gendered differences in pedagogical preference in the application of instructional technology in order to inform practice and better integrate the differences within institutions of higher education. The research question will provide insight into how faculty are using a technology that is heavily used in institutions of higher education.

2.0 REVIEW OF LITERATURE

The current use of technology as part of instructional programs in institutions of higher education has been informed by centuries of theoretical and technological developments. In order to critically analyze the integration of technology in education, antecedents are considered with specific emphasis on current evidence of their lasting contribution to the field. The analysis begins with an investigation of the definition of educational technology as informed by various constructs, including paradigmatic shifts as well as a discussion of the influence of professional associations such as the Association for Educational Communications and Technology (AECT) Definition and Terminology Committee. Ultimately, a description of educational technology is identified for use in this work.

The review of literature continues with a chronological account of historical events, beginning with events occurring prior to 1800 and continuing through the present day in regard to an overview of emerging technologies. To follow, course management systems (CMSs) are discussed with emphasis on current use. The chapter goes on with an overview of templates in course management systems, specific to the University of Pittsburgh, an early adopter of the technology. This discussion is important to this study as design of online courses within Blackboard was an important aspect of data analysis. The issues in CMS design that have led to the development of both syllabus and course templates within the Blackboard CMS at Pitt are also considered. The issues in design are recounted in consideration of student, faculty and

administrator perspectives. Gender-related differences in the instructional programs of faculty are reviewed next with examination of differences in the context of the three areas of faculty responsibility: research, service and teaching. Finally, the review of literature concludes with a study of gender-related differences in the use of technology for instruction and epistemological assumptions closing with epistemological models that are important to this dissertation.

2.1 TOWARD A DEFINITION OF EDUCATIONAL TECHNOLOGY

The use of technology as part of course curriculum has evolved over time, as has the lexicon used in the field. In this regard, the Association for Educational Communications and Technology (AECT) has made efforts to define key terminology and distinguish between critical concepts. While the terms “educational technology” and “instructional technology” are at times used interchangeably, there are important distinctions between the two. As Januszewski and Molenda (2008) explain, educational technology is broader in scope and includes all processes that develop human capability, while instructional technology focuses specifically on the processes of teaching and learning. As well, the field and profession of educational technology are distinct from the concepts of each. Januszewski and Molenda (2008) point out that “the validity of each [concept versus field of educational technology] can be judged separately from the other and can be judged by different criteria” (p.13). Instructional technology experts address the field or profession aspect, explaining that “professionals in the field of instructional design and technology often use systematic instructional design procedures and employ a variety of instructional media to accomplish their goals” (Reiser, 2001, p.53). The concept of educational

technology will be examined here as it is most appropriate in the account of its historical conceptions because educational technology is the broad, overarching construct through which the concept and field of instructional technology arose.

The definition of educational technology has been shaped by a multitude of factors, and principally so by historical origin. Paul Saettler (2004), the historian of educational technology (Ely, 1996, Januszewski, 1999), who has been attributed with seminal pieces in regard to the history of educational technology, captures this relationship as he states: “inevitably, the meaning of educational technology is intertwined with certain historical conceptions and practices or bound to specific philosophical and psychological theory as well as with particular scientific orientations” (p.5). Moreover, paradigmatic shifts have influenced changes in educational technology. Saettler (2004) defines four major paradigm shifts of the past century: “(a) physical science or media view; (b) communications and systems concept; (c) behavioral science-based view; and (d) cognitive science perspective (p. 7).” Paradigm shifts inherently elicit “a distinct set of assumptions, values, and general tendencies” that inform practice (Saettler, 2004, p.7).

The physical science or media paradigm is focused on the use of hardware (e.g., television, projectors, computers) in the presentation of instructional programs, but deemphasizes the effects of such devices on learning. This movement was initially supported by commercial producers of filmstrips and slides and persists today in the electronic computing era. The second paradigm, the communications and systems concept, focused on complete instructional systems – communication from the source (teacher or medium) to the receiver (learner). The conceptual basis was instructional design that linked instructional objectives to goals with all elements of the system. A systems concept was applied in the 1970s, that described a methodical approach to the

design and evaluation of complete systems of instruction. The model did not address implementation and as a result, it was ultimately overshadowed by the behavioral science-based approach during the 1960s and 1970s.

The behavioral science-based view integrated the fields of psychology, anthropology, and sociology to educational technology with specific focus on learning, group dynamics, communication, and awareness. This theoretical orientation became problematic as behavioral science and educational technology each have their own terminology, theory and research methodology. The fourth and final paradigm shift in educational technology is the cognitive concept of educational technology. In this view, the learner is not passive, but an active proponent of their own learning, constructing their experience. In this construct, an analysis of knowledge acquisition or learning strategies, employed by the learner is considered in the development of the instructional program. As Saettler (2004) states, "the cognitive approach to educational technology, unlike behaviorism, attempts to understand the internal processes of behavior and emphasize knowing rather than responding" (p. 14). The cognitive approach began to replace the behavioral science-based approach to instructional design in the 1980s. In the cognitive view as opposed to the behaviorist view, educational technology should cultivate knowing rather than behavioral responses. While the cognitive approach continues to influence instructional design, Saettler (2004) predicts that new paradigms will emerge in the coming years.

The Definition and Terminology Committee of the AECT present their most recent definition of educational technology as "educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (Januszewski & Molenda, 2008, p.1). This definition

arose after several iterations published previously, (1963, 1972, 1977), the last written by Seels and Richey in 1994. The principle modifications made since the previous published definition in 1994 were a result of postmodern and constructivist influence. Specifically, the focus shifted from teacher to learner-centered educational technology. This resulted in a worldview that learners are responsible for their knowledge through meaningful construction based on previous experiences, which is reflected in the cognitive paradigm discussed previously.

In the 2008 AECT definition, the term "study" is meant to be "the theoretical understanding of, as well as the practice of, educational technology, requires continual knowledge construction and refinement through research and reflective practice" (Januszewski & Molenda, 2008, p. 1). The term, "technological" in the definition is based on Galbraith's (1967) definition of technology as "the systemic application of scientific or other organized knowledge to practical tasks" (p. 12). Galbraith's (1967) definition used in this regard provides a clear difference between educational technology and other processes applied for the purpose of education. Another similar definition of technology was written by Gendron (1977) as "any systematized practical knowledge, based on experimentation and/or scientific theory, that enhances the capacity of society to produce good and services, and which is embodied in productive skills, organization, or machinery" (p.23). Implied in this discussion is a distinction between "hard and soft technologies." Hard technologies in this vein refer to hardware (machinery) as in computer hardware and software (programs, procedures) as in computer software used for education. Soft technologies refers to the intellectual processes, including curriculum development and instructional design, this term collectively references ways of thinking about teaching and learning.

2.1.1 Definition of Educational Technology Referenced for the Current Study

The definition of educational technology that will be referenced for this dissertation is an adaptation of the 2008 AECT definition, integrated with a definition of instructional media by Reiser (2001). Specifically, where the AECT definition refers to "appropriate technological processes and resources" those processes are specifically defined here through the use of Reiser's instructional media definition as: "the physical means, other than the teacher, chalkboard, and textbook, via which instruction is presented to learners" (Reiser, 2001, p. 55). A thorough examination of the evolution of educational technology will require not only definition, but consideration of theories influencing technology as well as precursors to instructional media as described above.

> Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources, defined as the physical means, other than the teacher, chalkboard, and textbook, via which instruction is presented to learners. (Januszewski & Molenda, 2008, p.1; Reiser, 2001, p. 55)

2.2 THE HISTORY OF EDUCATIONAL TECHNOLOGY

The definition of educational technology as written above identified the precursors to educational technology included in the following account of the evolution of the use of technology as part of instructional programs in institutions of higher education. Specifically, the definition will guide the inclusion of technologies improving performance in education as well as technological

processes and resources (from teacher, chalkboard and textbook to hardware and software as it is known today). The account will focus on events in the United States, with some reference where appropriate, of international events shaping the evolution of educational technology in this country in particular in the years prior to the origin of American education. The account also reflects the broad criteria used by Saettler (2004) in his text, *The Evolution of American Educational Technology* as:

> 1. only the theories and methods of professional teachers were included, thus automatically eliminating the work of religious figures known as "great teachers" and nonteaching philosophers…..2. to define the most distinctive instructional techniques that were key precursors of a modern science and technology of instruction. (p.24)

The influence of psychological and philosophical theorists will also be included where appropriate to more accurately detail the events discussed with specific emphasis on contributions to educational technology. A study of the history of the evolution of educational technology is critical in understanding how it is used today in institutions of higher education as history informs current practice. As well, a historical examination of educational technology deepens our understanding of key influences on the current use of technology in education and provides a foundation for dissertation study in the field.

2.2.1 Events Shaping Educational Technology Prior to 1800

Prior to 1800, several theorists and publications are considered precursors of the rise of educational technology in the United States as they relate to the above definition. Preceding the advent of American Schools, Pierre Abelard (1079-1142) credited with the scholastic method, paved the way for a systematic approach to problems. While teaching at the Notre Dame

Cathedral School, (later the University of Paris), he presented students with opposing views of a given issue and would then invite them to systematically approach the question and come to a conclusion (Saettler, 2004, p.28). This system of instruction would later become a key component of the rise of the European University as well as the development of scientific inquiry. The scholastic method would ultimately influence educational technology as it was the beginning of a methodical approach to the facilitation of learning. Moreover, this technique became a model for European universities that would later influence American universities (Saettler, 2004).

Johann Comenius (1592-1670) wrote *Orbis Pictus*, published in 1658. The illustrated textbook was used to teach sciences and language. The book become very popular and was purchased in the United States in 1810 (Saettler, 2004, p.31). This illustrative text, although not the only in existence at the time, is an example of an early antecedent of instructional media as the physical means that instruction is presented to the learner. Comenius also wrote the *Great Didactic*, a speculative text that discussed his views on education. Of significance, he wrote on an educational system based on equality, where individuals had access to education regardless of social status. He proposed an open educational system.

This theme will recur later in the discussion of gender-related differences in the instructional programs of college faculty as democratic education can occur only within a context that allows for the inclusion of multiple perspectives and invites a diversity of opinion (Colin & Heaney, 2001). This program can only be fostered in a student-centered classroom, that has been recently documented to be a more frequent incorporation in female, versus male instructor's pedagogy (Zhou & Xu, 2007).

2.2.2 1800-1900: American Schools

Prior to 1800, American education looked much differently than it does today. For example, lesson plans included students reciting passages to their teacher. The academic year lasted from approximately 1-6 months as compared to the traditional nine months that we know today. Teachers were inadequately trained resulting in poor student learning outcomes, with students only acquiring cursory reading and writing skills after several years of attendance to the school programs. The physical conditions of the schoolhouses at that time were equally meager. The average one-room schoolhouse was a log cabin with a window and fireplace. Desks were made of sticks inserted into the logs of the cabin, seats were split logs. As conditions in the schools failed to improve, there was a growing need for free public schools as illiteracy and crime rates increased (Saettler, 2004, p.33).

Lancasterian instruction provided an answer to the need to offer mass education at a low cost. The method was introduced by Joseph Lancaster of England (1778-1838) and was adopted in the United States as early as 1806, in New York City. Lancasterian schools were characterized by large school buildings. An example of the student-teacher ratio in a Lancasterian school in Philadelphia, Pennsylvania in 1819 was 284 students to 1 teacher (Saettler, 2004, p.33). In order to accommodate the large number of students, textbooks were enlarged and hung on the wall, so as to eliminate the need for multiple copies of a single text. Sand was also used as part of lessons to save on the cost of instructional materials such as pen and paper (Saettler, 2004).

As a result of this type of instruction, new and innovative uses of media were introduced into the classroom. Moreover, instruction improved as there was a recognized need for teacher training programs. The Lancasterian monitorial system is an antecedent to educational technology because of its use of instructional media (such as the projection of information here,

enlarged textbooks) and systematic approach to instruction. Despite the improvement of this system over the previous state of education in America, several problems persisted, including the large student-teacher ratio. This method was eventually replaced by Johann Heinrich Pestalozzi's psychology of instruction method that gained popularity in the United States after it was first adopted in 1809 (Saettler, 2004).

The Pestalozzian method emphasized the importance of the connection of instruction with individual development (Saettler, 2004, p.36). According to this method, which emphasized the learner's initial reaction to their environment, instruction must become progressively more advanced. The influence of Pestalozzianism was greatest in Germany although it did gain wide acceptance in the United States as well (Monroe, 1969). The system was first introduced in American schools in 1809, but variants of the method persisted well into the 1860s. Saettler (2004) cites one such example as the use of objects in teaching to emphasize the importance of sensation in learning. Philip von Fellenberg (1771-1844) first used object-teaching in New York City for the purpose of manual labor instruction.

Later, Edward Sheldon (1823-1897) incorporated object teaching into the curriculum in the school system at Oswego, New York. By 1860, the method became known as the Oswego system. Eventually, the method was criticized because of the lack of a link between objects used and learning goals and subsequent lessons (Saettler, 2004, p.40). Francis Parker (1837-1902) developed a variation of the Oswego method in Quincy, Massachusetts in 1875. Object-teaching at Quincy included more resources including more and varied natural materials to study the sciences. (Saettler, 2004). The influence of the use of nature in a study of the sciences may have also come in part from the use of such objects as part of the nature study movement taking place

at the university level. Louis Agassiz (1807-1873), naturalist and professor, is attributed as father of the nature study movement (Agassiz, 1885, Saettler, 2004).

2.2.3 1900-1950: Visual Instruction Movement

At the beginning of the 20th century, theoretical developments were made toward a "modern science and technology of instruction" which informed the use of advancements in technology for the purpose of teaching and learning (Saettler, 2004, p.53). The two most prominent theorists in this regard were Edward Thorndike (1874-1949) and John Dewey (1859-1952). Edward Thorndike was an educational psychologist who used copious empirical investigation (usually gathered at public schools) to contribute to a theory of learning. John Dewey was a pragmatist and educational reformer and is attributed to be the father of the Progressive Education movement.

Thorndike developed the theory of connectionism that included a consideration of the experience of environmental cues in terms of the type of response elicited by the learner. Thorndike's theory of instruction, based on his theory of connectionism, focused on rewarding mastery of educational objectives and discouraging other behavior in this regard. Therefore he advised that instructional media should be used in a way that would include the idiosyncratic diversity of learners (Saettler, 2004, p.54). Thorndike's work had lasting effect in today's use of educational technology in that he addressed a need to thoughtfully integrate technology for instruction with a consideration of individual learning styles among other significant contributions. His theory was ultimately overshadowed by John Dewey's work.

John Dewey's work has had a lasting influence on educational technology. In terms of significance to the current discussion on educational technology, one primary difference between

Dewey's psychology of learning and Thorndike's theory of connectionism is that Dewey's work highlighted the learner in the process of learning, as engaged rather than as mere reactor. Dewey's principal contribution to educational technology was the reflective method of instruction (Saettler, 2004, p.57). The term reflective is used to describe "study" in the 2008 AECT definition of educational technology that was introduced previously is clear evidence of the influence of John Dewey's work in the field.

Several other theorists during this time period influenced the evolution of educational technology according to Saettler, 2004, including Maria Montessori (1870-1952), Frederic Burk (1862-1924), Carleton Washburne (1890-1968), Helen Parkhurst (1887-1973), Henry Clinton Morrison (1871-1945), Kurt Lewin (1890-1947), B.F. Skinner (1904-1990), and Jean Piaget (1896-1980). Maria Montessori stressed "learner individuality and freedom, and the specific technique of sensory training" (Saettler, 2004, p. 63). Until the Lancasterian method was introduced, instruction in American schools was highly individualized as noted previously. In the 1880s, there was a pronounced shift back to individualized instruction. The theorists contributing to this movement, according to Saettler, 2004, included Burk, Washburne, Parkhurst and Morrison. The individualization of instruction had a lasting impact and influence on the development of educational technology as we know it today in its focus on self-guided mastery of concepts to accomplish a learning goal. This notion can still be observed in distance education courses as students typically individually work through assignments in learning modules (which may sometimes be based on the consecutive weeks of a course).

Kurt Lewin was notably attributed with action research. Of particular importance to its contribution to educational technology, Lewin's "cognitive field theory of learning" described how a learner relates to his or her surroundings (Saettler, 2004, p.68). As part of this theory, the

teacher's role is to organize content in a way that encourages students to come to know their environments more deeply. This emphasis on the role of the teacher is evident in the uses of instructional technology today, and can be translated to the importance of the instructors' consideration of how the medium will be used in the most effective way in their own course.

B.F. Skinner was another theorist to have significant influence on the evolution of educational technology. Skinner introduced the concept of operant conditioning, repetition by the learner to reinforce concepts. In operant conditioning, technical devices were employed to produce effectual reinforcement of concepts (Skinner, 1968; Saettler, 2004). Jean Piaget, a developmental psychologist, studied intelligence and its acquisition in children and epistemology. Of importance to a discussion of the evolution of educational technology, Piaget related models of cognition that described four developmental phases (from infancy to adolescent): 1) "sensory-motor" (infancy to two years of age), 2) "preoperational" (two to six years of age), 3) "concrete operations" (six to eleven years of age) and 4) "formal operations" (eleven to fifteen years of age) (Saettler, 2004, p. 74). Each phase is characterized by specific intellectual capabilities. The lasting effect that Piaget's cognitive models had on educational technology is that they provided the instructor or instructional designer with a better understanding of individualizing instruction based on age and intellectual abilities (Piaget, 1950; Saettler, 2004).

2.2.4 Educational Film

At the beginning of the 20th century, there was an emphasis on visual instructional media, a clear technical antecedent of educational technology. Reiser (2001) accounts: "besides magic lanterns (lantern slide projectors) and stereopticons (stereograph viewers) which were used in some

schools in the later part of the 19th century, the motion picture projector was one of the first media devices used in schools" (p. 55). Although the first motion picture made its debut on April 23, 1896, many of the early films were theatrical in nature; a clear distinction was made in 1910 with the advent of educational films. Early educational films consisted of news stories and animal and nature documentaries. After 1910, many organizations developed films for various purposes (Saettler, 2004, p.96).

Thomas Edison clearly had a vision of the way that film would transform education as he stated:

> I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks. I should say that on the average we get about 2 percent efficiency out of school books as they are written today. The education of the future, as I see it, will be conducted through the medium of the motion picture…where it should be possible to obtain one hundred fifty percent efficiency. (1922)

Edison's vision was obviously never realized, although the lasting impact of the advances in both theory and technology in this period on educational technology can still be seen today. As to the growth in this area, between 1914-1923, five national professional organizations and five professional journals were established. In addition, courses in visual instruction were offered at institutions of teacher training (Reiser, 2001).

School museums were central units that held and distributed visual instructive materials such as slides, films, charts, art objects, study prints and photographs for public school systems. School museums first appeared in the United States in 1905 in St. Louis followed by openings in

Reading, PA (1908) and Cleveland, OH (1909) (Reiser, 2001). Vestiges of such units may still be seen today in school district media centers.

2.2.5 1921-1950: The Audiovisual Movement

The integration of technological progress in radio, recording and motion picture in the early 1920s into education resulted in the expansion of the visual instruction movement, which soon became the audiovisual movement (Reiser, 2001). Despite the Great Depression, significant advances were made during this period in audiovisual instruction. Saettler (2004) accounted that instructional radio was incorporated in public schools in cities including Chicago and Detroit. In addition, the Department of Visual Instruction, a part of the National Education Association formed after the unification of three professional organizations. The organization became known as the AECT (mentioned previously) and has continued to be instrumental in the growth of the field of educational technology (Reiser, 2001).

In addition to the incorporation of audiovisual instruction into schools and the progress of professional organizations in the field, textbooks on audiovisual instruction were first published in this time period as well. According to Reiser (2001), one of the most influential books was "Visualizing the Curriculum" by Hoban, Hoban & Zissman, 1937. The text stressed realism as the basis of the incorporation of audiovisual materials into the classroom. Advancements in this area, although once thought to possess the ability to revolutionize education, began to slow in the later part of this time period. In 1932, J.E. Morgan, an editor of printed materials of the National Education Association made a statement in regard to the impact of audiovisual education that was similar to Thomas Edison's prediction of the impact of the motion picture on education. Morgan wrote: "tomorrow they [audiovisual materials] will be as common as the book and

powerful in their effect on learning and teaching" (Morgan, 1932, ix). As Edison's prediction ten years earlier, the impact that audiovisual instructional materials had were not as sweeping as initially expected. The onset of World War II essentially brought a halt to progress of the audiovisual movement in education.

The World War II era (1939-1945) included use of audiovisual instructional materials for military training. Reiser (2004) speaks to the magnitude of their use for military training: "during the war, the United States Army Air Force produced more than 400 training films and 600 filmstrips, and during a two-year period (mid-1943 to mid-1945) it was estimated that there were more than four million showings of training films to United States military personnel" (p. 56). In addition to use of films for military training, audiovisual materials were used to train civilians in industrial work (Reiser, 2001). The use of training films for military use was effective and therefore became more relevant in educational settings.

2.2.6 1950-1980: Instructional Design and Educational Technology

In the early 1950s, theories of communication were influential on the use of audiovisual materials for the purpose of instruction. In 1963, a significant shift occurred that transformed audiovisual instruction into audiovisual communication with the publication of a new definition of audiovisual communication by Donald Ely. The definition, which brought about a theoretical change, stated that "audiovisual communications is that branch of educational theory and practice concerned primarily with the design and use of messages which control the learning process (p. 18)." Implied in the definition is the idea that learning and communication theory provide the conceptual framework for educational technology. By the mid-1960s, communications theory was overshadowed by behaviorism (Saettler, 2004, p.344).

2.2.7 Development of Instructional Design

In the 1960s, behaviorism made an impact on educational technology with B.F. Skinner's "concepts of reinforcement" (Saettler, 2004, p. 286). Behaviorism, as it influenced educational technology emphasized the performance of the learner and reiteration of learning. Therefore, the function of media became iterative in nature. Programmed instruction required specific objectives through which materials were designed. The Analysis of Behavior, by Skinner and Holland was published in 1961 and was a text on programmed instruction for an introductory psychology course (Holland & Skinner, 1961). Mager (1962) initiated the integration of objectives after the publication of his text that highlighted three elements in regard to the construction of learning objectives including: an account of targeted learner behaviors, an explanation of circumstances for the achievement of learner behaviors, and standards for the assessment of learners. The use of objectives in instructional design has also been greatly influenced by Bloom's (1956) work, commonly referred to as "Bloom's Taxonomy." Essentially, the publication organized learning objectives into a schema of mastery that was hierarchical and classified by type.

The influence of the field of psychology on the process of developing instructional design theory was evident during this period as well. Early contributors included Robert Gagne and Leslie Briggs. Gagne (1985) detailed stages of data processing and events required for five domains, or learning outcomes. Another element of Gagne's work that is evident today is his work on hierarchical analysis. Specifically, learners must first master basic kills before mastering advanced skills (Gagne, 1962).

Gagne would go on to develop instructional design models, or processes for the systematic development of instructional programs. For example, Gagne and Briggs (1979)

developed one such model referred to as the Gagne-Briggs Theory of Instruction. Three major features of this model were: 1) instructional design is based on pre-determined learning aims 2) instructional design implements a variety of materials and 3) instructional design requires evaluation throughout the process (i.e. testing of materials) (Saettler, 2004, p.347). In terms of evaluation, two forms were introduced: formative and summative, whereby formative evaluation was the testing of educational materials during the process of the development and summative evaluation was the testing of materials after the completion. These two terms were initially coined by Scriven (1967). The amount of instructional models increased during the 1970s (Reiser, 2001).

Another early contributor to the development of theories of instructional design was Robert Glaser, who significantly contributed to the field in multiple ways. He compiled work in until that time into volumes of texts. He also developed individually prescribed instruction (IPI), whereby the instructor prepared a unit for the learner through the identification of particular behavioral goals and educational progression. Students were given both a pre and post-test. (Saettler, 2004).

In the 1980s, instructional design practices did not have a significant impact at the collegiate level with the exception of the advent of the use of microcomputers for instruction (Reiser, 2001). At that time, professionals in the field began to turn their attention to computer-based instructional processes. However, in other sectors such as business and industry, the growth of instructional design that began in the 1970's continued. In regard to higher education, the 1990s was a period of marked growth in the field with the advent of distance education 1995 (Reiser, 2001).

2.2.8 Educational Television

The 1950s was a period of increased interest and growth in the incorporation of television for instructional purposes although instances of the educational use of television were documented prior to 1950 (Reiser, 2001). This growth was a result of Ford Foundation funding and the allotment of educational channels by the Federal Communications Commission (FCC). The Ford Foundation and its agencies spent an estimated $170 million in educational programming between 1960 and 1970. Sponsored project examples include a closed-circuit television system in Hagerstown, MD that delivered instruction in multiple subject areas to every grade level in the public school, and a research program at Pennsylvania State University that assessed the effectiveness of college courses taught via television (Reiser, 2001).

By the end of the decade, the interest in educational television had drastically diminished. It is speculated that many instructional programs failed because of poor quality, high cost and little support. In addition, the Ford Foundation poured more of its resources into public television; so its use in schools fell by the wayside. The Carnegie Commission on Educational Television (1967) issued these poignant remarks:

> The role played in formal education by instructional television has been on the whole a small one…nothing which approached the true potential of instructional television has been realized in practice…with minor exceptions, the total disappearance of instructional television would leave the educational system fundamentally unchanged (p. 80-81).

2.2.9 Computer Assisted Instruction

Computer-assisted instruction (CAI) originated in the 1950s, although widespread interest in the incorporation of computers for instruction did not occur until the 1980s, after the microcomputer was ready for home use (Reiser, 2001). During the 1950s, CAI was developed by researchers at IBM, who designed the initial CAI programs that were used in the school system. Sudden and dramatic growth in the area occurred in the mid-1960s as a consequence of government funding for the expansion of CAI in various settings. In 1971, the National Science Foundation disseminated a $10 million grant to the Control Data Corporation and Mitre Corporation for the overarching purpose to develop a national CAI system (Saettler, 2004). The competing projects, that expressed practice tutorial modes of CAI were known as PLATO ("Programmed Logic for Automatic Teaching Operation") and TICCIT ("Time-Shared, Interactive, Computer-Controlled Information Television") (Saettler, 2004, p.309). Neither project was successful in developing effective software.

Beginning in 1970, federal funding in the area of CAI began to decline as little impact had been made (Pagliaro, 1983). Many issues can be attributed with its demise such as technical issues, curricular incompatibilities, underdeveloped software, undertrained instructors and high cost (Saettler, 2004). There was also a failure in the sense that CAI was applied and introduced with the conventional class in mind. Interestingly, one faculty participant of this study echoes this sentiment with his discussion of the Blackboard CMS and its' restriction of students as learners. By 1980, there was a shift and new attention given to the integration of computers for instruction after the microcomputer became available to the public. While its incorporation into instructional programs was at first slow, emerging technologies have increased the use of computers in instruction.

2.2.10 1980-Present: The Internet to Emerging Technologies

The initial use of the microcomputer in the 1980s for instruction was meager, despite the fact that many thought it would immediately revolutionize education. Papert (1984) predicted that the microcomputer would be "a catalyst of very deep and radical change in the educational system" (p. 422). However, as has been noted regarding other forms of instructional media over time, the use of the microcomputer for instruction was not immediately integrated into instructional practice. For example, by the mid-1990s, the availability and prevalence of computers had increased in schools, but teachers reported that there were used little if at all for instruction and rather were used merely for review of concepts (Anderson & Ronnkvist, 1999; Becker, 1998; Office of Technology Assessment, 1995).

2.2.10.1 The Internet

Januszewski & Molenda (2008) stated that "perhaps the most significant added functionality of the computer was access to the Internet in the 1990s" (p. 229). The first documented account of the concept of the Internet is a cadre of memos by J.C.R. Licklander (1962) of the Massachusetts Institution of Technology (MIT) describing a galactic network whereby all people were connected via computers. It was this initial networking notion that would generate work on what is today, the Internet. The Internet was originally developed as a United States Defense Department Research Project by the Defense Advanced Research Projects Agency (DARPA) (Kahn, 1995).

In the year 1966-1967, several key developments took place, of particular significance was the creation of the ARPANET (Advanced Research Projects Agency Network). Robert Kahn and Vincent Cerf were responsible for the overall system design (Leiner et al., 1997).

ARPANET was introduced in 1969 to four locations, all associated with an institution of higher education, including the Stanford Research Institute (currently, SRI, no longer associated with Stanford), the University of Utah and two University of California campuses.

In October of 1972, the first public exhibition of the ARPANET took place at the International Conference on Computers in Washington, DC. Also in 1972, electronic mail (e-mail) was launched (Leiner et al., 1997). The ARPANET would continue to over the next decade. In 1974, Cerf & Kahn described a protocol known as Transmission Control Protocol (TCP)/ Internet Protocol (IP) that detailed forwarding and transport services. As this technology developed, the ARPANET became known as "the Internet," (Leiner et al., 1997). In 1995, commercial Internet providers purchased the Internet backbone and the Internet grew exponentially eventually becoming what it is today.

In 1991, the World Wide Web (WWW) was released as an Internet protocol by Tim Berners-Lee of the European Organization for Nuclear Research (Berners-Lee, Fischetti, & Dertouzos, 2000). Prior to the release of the WWW, the Internet was text-based and required the use of UNIX code. The WWW introduced graphics, audio and video into the Internet. In 1993, users could access information on the Internet by clicking imagery as a result of the creation of the browser. Recent versions of this browser include Mozilla Firefox, Microsoft Internet Explorer, Apple Safari, and Netscape Navigator (Januszewski & Molenda, 2008). A web page is a document on the WWW that is retrieved via a unique URL or Uniform Resource Locator. The number of websites on the WWW continues to grow at a rapid pace, revolutionizing access to information and people worldwide.

2.2.10.2 Distance Education

Distance education has existed since 1840, when Sir Issac Pitman was attributed with the concept of presenting education through correspondence (Phillips, 1998). The concept flourished with the appearance of distance education, then correspondence courses, throughout countries including: the United Kingdom, the United States, Germany and Japan (Curran, 1997). In 1969, the founding of the United Kingdom's Open University was a critical step in the development of distance education. Students were mailed instructional materials and were assigned a tutor whom they could work with over the telephone (Curran, 1997). After the founding of the Open University, four more such institutions opened in the United Kingdom alone and up to 20 more in other countries (Matthews, 1999). The popularization of such institutions was the result of a need to extend the opportunity of higher education beyond the traditional setting in order to reach more people from diverse backgrounds and situations (Matthews, 1999).

As the Internet expanded, so too did distance education. Januszewski & Molenda (2008) account that:

> During the late 1990s- early 2000s, hundreds of universities and businesses adopted the Web platform for their distance education and training, reaching millions of students, and Web-based distance education became the major growth area for educational technology. By 2006, the great majority of all U.S. higher education institutions were offering distance education courses via Web delivery. (p. 230-231)

Web-based distance education serve a cadre of instructional purposes such as delivery of course materials (i.e. course syllabus, assignments, etc.), communication with instructor and classmates and distribution of learning assessments (Matthews, 1999).

2.2.10.3 Emerging Applications

Emerging applications for instruction include new Internet and Web applications such as weblogs, wikis, and podcasts. Weblogs are web-based journals that provide an opportunity for communication between people, of particular interest here is its potential for use in instructional technology whereby collaboration occurs between the teacher and student and student with other students. For example, teachers could post a “blog” online focused on a specific course concept, and students could add to it as they wanted. In this type of media, both student and teacher can add graphics, audio and video (Januszewski & Molenda 2008). Similarly, a wiki encourages interaction between student and teacher as both can collaborate on the creation of a web site whereby all who have access to the site have the ability to modify it. A popular example of a wiki is Wikipedia, an online encyclopedia that anyone can contribute or edit information. Finally, the podcast is a compilation of audio and video files that is easily downloadable to a personal, portable, media device such as the Apple iPod. The clear advantage of the podcast is its convenience, students can access or study materials in a given course at anytime, anywhere. The use of such technologies undoubtedly promotes a high level of collaboration and learning as not only instructor, but the students are able to contribute to the shared space. Many fields have adopted the above emergent technologies including but not limited to medical education (Boulos, Maramba, & Wheeler, 2006).

2.3 COURSE MANAGEMENT SYSTEMS

Course Management System (CMS) is the formal name given to inclusive software packages that contain integrated tools for both database and web functions. The utilization of CMSs by

postsecondary institutions began in the late 1990s in response to a lack of instructional tools to support faculty usage of technology for teaching (Collis & De Boer, 2004). Several CMSs now exist, and are commonly identified by their "brand names" such as Blackboard, WebCT, ANGEL, Desire2Learn, Moodle, and Sakai. CMSs have become critical tools for faculty as a means to create an proficient learning environment online. As a result of these tools, the utilization of CMSs has drastically increased over the past decade as they rest at the nexus of instruction and technology. On the corporate side the term Learning Management System (LMS) is used instead of CMS (Januszewski & Molenda, 2008).

CourseInfo LLC, based out of Cornell University created the Interactive Learning Network in 1997 and released it in 1998 commercially. It merged with Blackboard Incorporated in 1999 and the product was renamed CourseInfo. The name CourseInfo was eventually replaced by Blackboard. Blackboard Inc. also supports another option for faculty course developers that is known as Blackboard.com. It is currently a free service (Laudato, personal communication, August 9, 2011). By 2006, Blackboard acquired its largest rival, WebCT. In 2009, Blackboard acquired ANGEL and has dominated the field of college and university CMSs. In July, 2011 Blackboard announced that it is being acquired by Providence Equity Partners (Blackboard, 2011).

The growth of the field of educational technology as well as increased reliance on computers and specifically, the proliferation of the CMS for use in the instructional programs of college and university faculty, require research into the technology's use and efficacy. A historical account of the many antecedents of technologies as used today, demonstrate that CMSs have the necessary theoretical basis and consideration to have a lasting impact. Specifically, the CMS provides a user-friendly compilation of tools for course programs, a key feature that

promotes its use by faculty. Unlike technological developments of previous decades, the CMS is well- integrated with instructional design and learning theory. While CMSs have offered user-friendly options for faculty to convert course content from a more traditional presentation to an online program, many issues still abound in terms of its wide-spread adoption. These issues will be reviewed in the following section.

2.3.1 Course Management System Utilization and Design

Course management systems have dramatically affected the field of higher education. In this account, current CMS utilization and design is reviewed with specific emphasis on the Blackboard CMS, followed by a review of issues in current CMS design with consideration of the perspectives of the student, faculty member, and administrator in an institution of higher education. This review of specific issues in CMS design demonstrates the need for templates in CMSs, a recommended course structure first designed for use at the University of Pittsburgh by instructional designers and technologists within the Center for Instructional Development and Distance Education (CIDDE). Templates are then further defined by their components in two categories: syllabus and course.

The utilization of CMSs by institutions of higher education began in the late 1990s as a result of the lack of instructional tools to support faculty usage of technology for teaching (Collis & De Boer, 2004). Most CMSs are designed with pre-set file folders such as “Course Documents” with options for instructors to label the folders themselves with unique identifiers as they see fit (Caplow, 2006). Instructors then determine where they will place their course materials either under the pre-set labels, or under their own, self-created labels or some combination (Caplow, 2006). The pre-set labels within the Blackboard CMS are:

Announcements, Course and Staff Information, Course Documents, Assignments, Books Communication, Discussion Board, External Links, and Tools (Caplow, 2006).

2.3.2 Issues in Current Course Management System Design

The literature presents many issues in current CMS design. One concern is that of "limiting pedagogy" because of the standardized format of the integrated commercial systems (Lane, 2008). Specifically, the easy-to-use format has been criticized for its' focus on the traditional lecture, review, test pedagogy that prohibits the inclusion of the learner, as in constructivist pedagogy. The focus on structure and organization in addition to discussion threads may discourage faculty creativity. This sentiment is echoed by Weigal (2005) in that by trying to duplicate the face-to-face classroom with e-learning technologies results in educators becoming "locked into" a "model of e-learning that is more preoccupied with the categories of accessibility and convenience than pedagogical effectiveness" (Weigal, 2005, p. 55). It should be noted that the most recent version of Blackboard, Bbd 9.1, is considered to have addressed the issues noted here and has increased capacity and flexibility to offer more options for faculty-student interaction.

Another issue in CMS course design that is cited in the literature is that of disjointed learning, a possible result of automated course design and confined presentation of material. This may discourage the student's ability to relate concepts to specific contexts, or to "conditionalize knowledge" (Bransford, Brown & Cocking, 1999, p.31; Weigal, 2005, p.63). Another aspect of CMS course design resulting in segmented learning is that students may be unable to relate course concepts from different modules based on instructional design in a sequence of file folders. The design may falsely lead students to the notion that modules are unrelated based on

their order online in what may appear to be unrelated folders. A segmentation of learning may also be the result of the overall organization and placement of course materials. Placement of materials is an important component of student satisfaction (Moore et al., 2002). Therefore, conceptual differences between user (student) and designer (instructor) in terms of appropriate places for course materials may lead to unproductive classroom environments (Boshier, 1997). A specific example to that effect is a study done by Moore, Downing and York (2002) in which instructor and student satisfaction were compared to how instructor course materials were organized in a CMS. The study demonstrated that there was a discrepancy between instructor's notions of the appropriate sections of the CMS for materials and student's expectations. Moore et al. (2002) concluded that instructors organize materials based on their own organizational schemas, implicitly assuming that students operate under the same organizational style. Boshiers et al. 1997, Moore et al. 2002, Caplow, 2006 emphasize the usefulness of a classification system for the placement of course materials as a tool for instructors delivering courses on CMSs as a result of the above reported issues.

Issues in current CMS design may also be discussed in reference to the perspectives of the stakeholders in a higher education setting; faculty, students, and administrators. Jafari, McGee, and Carmean (2006) identify three major areas of which the above mentioned stakeholders are concerned in terms of CMS design: compatibility/interoperability, usability, and smartness/dumbness. The compatibility/ interoperability category focuses on integration with other systems. The usability category focuses on user friendliness. Smartness/dumbness refers to the system's ability to save previous settings.

2.3.2.1 Faculty Perspective

The term, “faculty” as used in this discussion includes not only teaching professionals at the institution, but researchers and librarians as well. As a result of interviews at select institutions of higher education, Jafari, McGee, and Carmean (2006) found that in terms of the compatibility/ interoperability category, faculty were concerned with CMS integration and compatibility with other institutional services such as e-mail. In addition, faculty were interested in multiple services available under one log-in, instead of multiple log-ins as is typically the case at institutions of higher education whereby access to the CMS being used requires faculty and students to log on to a separate space.

In regard to the usability category, faculty were more interested in easier to use functions. While preference would certainly vary from person to person, the large majority might disengage and opt not to incorporate the use of a CMS if they perceived the use of the technology as too complicated, whereby it would take too much time to learn the technology. Finally, in the smartness/dumbness category as defined by McGee and Carmean (2006), faculty preferred that the CMS save user choices, just as Amazon.com does in terms of frequency of the type of material searched for in the past.

2.3.2.2 Student Perspective

In the compatibility/ interoperability area, students perceived that it was frustrating to have to use many user names and or passwords to access various resources. The notion that a single log-in to access all institutional services would be more efficient was echoed in the faculty group (Jafari, McGee, and Carmean 2006). The data received after interpretation of student interviews in the usability category also seemed to echo faculty concerns. Specifically, students preferred easier to use functions over a more diverse tool set.

Finally, in relation to the smartness/dumbness category, students preferred that the CMS save settings at each log-in as was stated in the faculty responses above. Interestingly, students reported that CMSs do not improve instructional presentations, and that courses typically look the same when using a CMS. This sentiment is also reflected in multiple studies that demonstrated that there was a discrepancy between instructor's notions of the appropriate sections of the CMS for materials and student's expectations (Boshiers et al. 1997, Moore et al. 2002, Caplow, 2006).

2.3.2.3 Administrator Perspective

Administrators interviewed at institutions of higher education as reported in the Jafari, McGee, and Carmean (2006) study included administrative personnel who oversee instructional technology departments or offices at institutions of higher education. In terms of compatibility/interoperability, administrators report that integration into existing technological systems at the institution is considered when deciding upon the adoption of a CMS. Administrators were also concerned with integration of the CMS with other campus services.

Administrators reported that usability was critical in faculty adoption of CMS technology. The study showed that administrators preferred overall user friendliness over more complicated packages (Jafari, McGee, and Carmean 2006). In regard to the smartness/ dumbness category, administrators were less concerned than faculty and students in the system's ability to save settings and preferences. However, administrators, similar to students, were concerned with the possibility of courses looking too similar to one another when using a CMS (Jafari, McGee, and Carmean 2006).

2.3.3 Course Management System Templates

The experiences of the above mentioned groups, faculty, students and administrators frames the need for an innovative course design option in CMSs, that address the concerns mentioned previously, such as that developed at the University of Pittsburgh. Of particular importance was the experience of faculty who preferred easier to use functions. Another concern that is addressed in the template design is that of students, who appeared to have a different sense of where certain materials should go. The syllabus and course template design serves to avoid the confusion of learners. Finally, administrators and students were concerned with the repetitive nature of course design in a CMS, the templates developed at the University of Pittsburgh address this concern through a logically organized design that promotes creativity through each attribute, for example faculty have the option of personalizing their webpage with graphics.

The University of Pittsburgh was one of the first institutions of higher education to acquire the Blackboard CMS in May 1998 for faculty course developers. In response to criticisms in current CMS design, instructional technologists and designers at the University of Pittsburgh CIDDE created a recommended course structure (syllabus and course templates). The templates are based on the Process Model for the Individualization of Curricula (PIC) Model (Gow & Yeager, 1975). The addition of the templates is a unique feature, as the Blackboard CMS did not contain any instructional design templates. The CIDDE template is a Blackboard course shell that has been pre-populated with items that are organized according to the PIC instructional design model. Specific components are presented in Table 1.

The syllabus and course templates were created to organize instructional materials and provide consistency among web-enhanced courses such that students would be more likely to benefit from use of a CMS as part of the curriculum (Nicoll & Laudato, 1999). The syllabus and

course templates each consist of several components that have been deemed important by the team of instructional designers and technologists at the University of Pittsburgh CIDDE (Table 1).

Table 1. Syllabus and Course Templates

Syllabus Template	Course Template
Introduction	Introduction
Class Meeting Times	Learning Objectives
Course Description	Lecture Notes
Course Rationale	Handouts
Course Goals	Exercises
Course Outline	Sample Tests
Course Materials	Related Readings
Course Requirements and Grading	
Course Policies	
Course Schedule	
G-Grade Policy	
Copyright Notice	
Accessibility	

The syllabus and course template components as listed in Table 1 are viewed as items (documents) on the Blackboard system, each item allows faculty to insert information appropriate for each component. Nicoll & Laudato (1999) found that if given a well-supported tool, such as a template enhanced Blackboard course structure, faculty are more likely to implement sound instructional design practices into their courses. In addition, use of the templates provides a well-organized course that is easy for students to navigate. The templates were discussed in this review because the study participants presented all or part of their instructional program at the University of Pittsburgh and so a consideration of the unique nature of this technology at Pitt is relevant.

2.4 STUDENT-CENTERED PEDAGOGY

Student-centered pedagogy involves the active engagement of students in the construction of knowledge in the classroom. Knowlton (2000) provides a relevant description and comparison of student-centered versus professor-centered classrooms along four dimensions: “pedagogical orientation, things, people and process” (p.7). In his comparison, the pedagogical orientation of teacher-centered environments is positivistic and student-centered is constructivist. Along the “things” dimension, professor-centered is defined by the presentation of concepts by the teacher of the course whereas in the student-centered environment, the professor and students work together to pose concepts and subsequently come to an understanding of those concepts. In the “people” dimension, teacher-centered classroom environments are characterized by a hierarchical power structure, where professor is all-knowing. In the student-centered environment, professor and student are equal and roles are “dynamic: the professor and students are a community of learners” (Knowlton, 2000, p.7). Finally, along the processes dimension the teacher-centered classroom employs lecture as the predominant pedagogical strategy while in the student-centered classroom, the teacher works with students on assignments (Knowlton, 2000).

Student-centered pedagogy involves the integration of student experience such that learning is genuine and important (Comb et al., 1971). In addition to its collaborative nature and focus on democracy in the classroom, it includes the recognition of multiple perspectives and diversity. Student-centered classrooms are characterized by a constant dialogue among students and students with the instructor. Professors offer guidance rather than lecturing students on the information (Axelrod, 1991). This type of environment also typically includes a community of learners whereby the entire class works together to come to an understanding of concepts through communication with each other and the professor.

2.4.1 Student-Centered Approach to Online Learning: Translation to Practice

The online classroom takes on the pedagogical orientation of the instructor of the course as a result of the need to have materials prepared and uploaded before students are present in the course. Therefore, a student-centered approach to online education is possible and is characterized by interactive elements implemented by the instructor of the course. Gillani (2000) proposes practical guidelines for implementing student-centered design in the online classroom. He outlines a process for the "development of a student-centered web-site" (Gillani, 2000, p. 179). In this process, he states that the first step is preparation for the development of the course; this step involves a definition of the purpose of the course followed by an analysis of the students in the course. This "students' needs analysis" can be completed through a survey administered by the instructor that asks students to provide information about themselves, such as their learning needs (Gillani, 2000, p. 171). The next step in the creation of a student-centered online course according to Gillani (2000), is the translation of the students' needs analysis to a consideration of "interface design (website design including graphics and color schemes), content presentation (presentation of didactic materials), and site architecture (connection between areas or pages of the site)" (p. 172). The development of the site involves student feedback and collaboration and requires revision where necessary. Finally, a student-centered approach to online learning might include the continued evaluation and reflection on the site and its effectiveness.

The student-centered approach to the online classroom is "dynamic" (Knowlton, 2000, p. 13). It requires that the student's needs be at the center of the curriculum with continued discussion and review of classroom design. This approach involves the incorporation of student experiences as well as the inclusion of learning activities that encourage the development of

authentic learning which requires the students to find information rather than act as passive receivers of information. Finally, it encourages interaction between students and students with the instructor.

2.5 GENDER-RELATED DIFFERENCES IN INSTRUCTIONAL PROGRAMS OF FACULTY

Despite increased numbers of women serving as faculty within institutions of higher education in the last two decades, female faculty still face challenges in academe. Among specific challenges are unequal salaries, lower rank, and promotion delays (Samble, 2008). Many reasons are cited in the literature for the disparities, among them, female faculty dedicate more resources in terms of time to service and teaching and less in research, as opposed to their male counterparts, whereby scholarly productivity is often more heavily weighted in the tenure process (Collins, 1998). In terms of differences in instructional programs, women are more likely to apply student-centered learning to instruction than male faculty members (Zhou & Xu, 2007). Moreover, based on the female faculty member's emphasis on student-centered practice, women are more likely to incorporate a democratic approach to education.

2.5.1 Current Distinctions: Male and Female Faculty

Challenges faced by female faculty have long been documented in the literature (Barbezat & Hughes, 2006; Morley 2005; West & Curtis, 2006). Superficially, the recent increase in the number of females serving in faculty roles in higher education may indicate a shift toward

gender equality in academe among faculty ranks. However, projections of an increase in tenured female professors has not been realized indicating that this increase is largely the result of higher numbers of adjunct female faculty members (Samble, 2008). Many scholars cite an increase in the total proportion of these types of appointments and more lucrative opportunities outside academe as reasons for the decreased proportion of full-time appointments (Barbezat &Hughes, 2006, West and Curtis, 2006, and Bentley & Blackburn, 1993). However, still many other scholars indicate that women have been marginalized in the professoriate as a result of the continued emphasis on male normative paths; a focus on research productivity and de-emphasis on teaching and service responsibilities whereby faculty are more greatly rewarded for their scholarly productivity (with the exception of faculty at two-year institutions of higher education) (Drago et al., 2005; Haag, 2005; Williams, 2006). In order to examine current distinctions between male and female faculty, the three major facets of the faculty position will be studied: research, service, and teaching, with specific emphasis on teaching and the instructional programs of male versus female faculty.

2.5.1.1 Research

Research productivity and publication in academe are more heavily weighted in the tenure process at most four-year institutions and in particular, at large research institutions. Over time, it has been widely documented that women publish less than men (Astin, 1969; Hamovitch & Moregenstern, 1977; Creamer, 1998, Bellas & Toutkoushian, 1999; and Sax et al., 1999). In the Higher Education Research Institute Faculty Survey 2007-2008, it was reported that women were less likely to dedicated significant periods of time to scholarship than were men (DeAngelo et. al., 2009). The persistent decreased scholarly publications of female as compared to male faculty “reflects women’s depressed rank and status, and partially accounts for it” (Fox, 2005, p.

131). Overall, the literature reveals a complex account of this difference, indicating multifaceted social and political influences that extend far beyond the often perceived rationale as increased time spent in family obligations. In this section, an exploration of family obligations in light of context will be considered followed by a discussion of the notion of devalued research.

It may be a misnomer that family-related responsibilities are the primary reason for differences in male and female faculty productivity, citing that having family responsibilities is the only reason for the differences between male and female faculty members may be false (Creamer, 1995, 1998). A review of some work in this area reveals that reasons for the differences in rank and salaries actually may be much more convoluted. For example, Sax et al. (2002) found that family-related factors had no impact on research productivity, further explaining that women with dependent children relinquished free time and focused exclusively on career and family. Moreover, women publish less than men because they may have less of a desire for accolades, and more a desire for "an opportunity to influence social change" (Sax et. al, 2002, p.436). Therefore, women faculty who spend less time publishing may be allotting more time for participation in activities that they perceive to have a more immediate societal impact.

In addition, recent trends reveal that female faculty may actually delay starting their families in regards to getting married and having children (Drago et al., 2005; Gappa, Austin, & Trice, 2007). Furthermore, it has been found that female faculty with young families do not take advantage of family leave opportunities such as maternity leave, because they fear an effect on their attainment of tenure (Drago et al., 2005). Furthermore, female faculty may be wary of taking time off such as maternity leave for fear that they may garner disrespect from their male colleagues (Williams, 2006). Drago et al. (2005) have coined the term, "bias against caregiving"

that collectively refers to the notion that there may be ill will towards women deciding to do both. Colebeck & Drago (2005) further examined this phenomenon as three distinct categories of faculty: those that accept, avoid, and resist these type of partiality. Those that accept this bias are agree to delays in the tenure process or opt out of the tenure-track all together. Faculty that avoid this type of treatment may hide their family obligations in the presence of colleagues. Finally, faculty who resist the prejudice are those that strive for a balance between the academic career and their families (Colebeck & Drago, 2005). In the 2007-2008 survey of national norms for the Higher Education Research Institute Faculty Survey, female faculty were twice as likely as male faculty to report discrimination as a principal cause of stress (DeAngelo et al., 2009).

Female researchers are more inclined to conduct studies on women and gender issues and racial and ethnic minorities as well as participate in collaboration with local community members (DeAngelo et al., 2009). In addition to challenges faced by female faculty in regard to scholarship, women in academe have encountered an underrating of the type of research conducted as in feminist and minority research that is perceived to be nonessential (Samble, 2008). This may potentially have an effect on promotion and tenure. In addition, by devaluing feminist and minority research, it has been argued that the work of females and minorities in academe is considered marginal (Aguirre, 2000). A failure to give proper credit and respect for this type of research also has repercussions for women and minority faculty's ability to meaningfully contribute to scholarship.

2.5.1.2 Service

The number of female faculty participating in committee and service appointments has increased with evidence of women reporting its increased importance as compared to research activities previously described (DeAngelo et. al., 2009; Aguirre, 2000). However, increased time in these

types of activities may lead to stress on the faculty member's time. Women faculty may find that they are the only women in their department (s) and so may be asked to advise all of the female or minority students (Aguirre, 2000). Therefore, women may be marginalized because they experience pressure to dedicate more of their time to activities, such as service that do not hold as much weight in the tenure process. Tokenism then, becomes an issue for female faculty members in this situation. This pressure, which may result in an inability to focus on aspects of the professoriate that result in tenure and promotion causes the decreased numbers of females as associate and full professors (Greene, 1991).

2.5.1.3 Teaching

A wide range of teaching methodologies are used by instructor professors of college courses including but not limited to exclusive lecture, group projects, extensive writing, peer evaluation, and student presentations. Historically, lecturing has been the dominant teaching method used by college faculty. Two previously completed large studies provide evidence in this regard. Blackburn et al. (1980) surveyed faculty at 24 institutions finding that 78% of the total faculty surveyed used lecture as their primary teaching strategy. Thielens (1987) similarly surveyed over 800 faculty at 80 institutions reporting that 80% of class time was used in lecture. Interestingly, Thielens (1987) also reported that male instructors reported higher incidence of using lecture as their primary teaching modality as compared to their female counterparts.

2.5.2 Female Faculty and Student-Centered Learning

Recent trends indicate a pedagogical shift toward student-centered learning for all faculty. Comparing 2009 and 2006, faculty are 8.8% less likely to use extensive lecturing in the

classroom, and 11.3% more likely to use group learning startegies (DeAngelo et.al., 2009). While recent data supports the notion that all faculty are moving toward student-centered teaching methods, female instructors have historically possessed a stronger preference for student-centered pedagogy as compared to male faculty (Lammers & Murphy, 2002, Statham-Macke, 1980). Specifically, Statham-Macke (1980) cited that female instructors viewed students as equals in the act of learning in the classroom more so than did male faculty. More recently, and Zhou and Xu (2007) found that female instructors used student-centered teaching approaches such as student presentations, group work, and class discussion. In addition, female faculty have been attributed to be more concerned with learner-centered teaching and sharing authority as opposed to male faculty (Lacey, Saleh, & Gorman, 1998). Therefore, female faculty have been found to incorporate student experiences in their instructional programs, a testament to the relationship between female pedagogy and democratic education.

The female faculty member's proclivity to include or embed the experiences of their students in their pedagogy provides a natural correlation to democratic education. Colin & Heaney (2001) state that "democracy in education can occur only within a teaching-learning environment that provides opportunities for the articulation and analysis of multiple sociocultural experiences" (p.30). The integration of student-centered practice entails the absence of class structure or hierarchy and focus on a student-driven instructional program where students take an active role in making meaning of course concepts. An instructor's pedagogy has an obvious effect on how they will incorporate the use of instructional technology.

2.6 GENDER-RELATED DIFFERENCES IN THE USE OF TECHNOLOGY FOR INSTRUCTION

Past studies have found differences in how males and females use computers in educational settings including primary, secondary, and post-secondary schools (Chen, 1986; Collis, 1985; Shashaani, 1994). The historic disparity provides a foundation for a discussion of how male and female faculty incorporate technology into their instructional programs. While gendered disparity in the use of computers has decreased over time, gender differences in the perception and approach to faculty integration of educational technology into instructional programs persist. Today, female faculty have reported a higher incidence of the use of technology for teaching purposes although female as opposed to male faculty are more likely to report insufficient support (DeAngelo et. al., 2009). As well, female faculty's incorporation of technology in the classroom may be more likely to be based on student-centered learning in terms of a strong linkage to student's needs as compared to male faculty. A review of speculative results from this study seems to support this idea.

Historically, previous data has shown that male students demonstrated an increased incidence of reported confidence in computer usage as a result of increased access (Collis, 1985, Chen, 1986, Shashaani, 1994). Past studies also indicate a gender disparity in computer usage as early as pre-school aged students whereby male students logged more hours in technologic activities than female students (Nelson & Watson, 1995). Chen (1986) similarly found that male adolescents were more involved in and had a more positive attitude toward computers than females in the adolescent age group as a result of more experience with computers in varied settings. For the secondary-school setting, males had more experience with computers and were more confident in a study of over 1700 students at the secondary school level (Shashaani 1994).

Recent studies have shown overall, a decreased disparity in gender and use of computers as compared to earlier studies. Gender differences in both primary and secondary schools were found to be insignificant in one study (Volman, Van Eck, Heemskerk, & Kuiper, 2005). Another recent study analyzed data from a large sample of primary and secondary school students between 2000-2005. The results of the study showed that boys and girls began first grade with essentially no disparity in their perception of computers. In grades 4 and 5, girls reported a more positive attitudes in their use of computers as compared to boys and by grade 6, girls' outlook towards computers became less favorable than boys', dropping significantly lower in the 8th grade (Christensen, Knezek, and Overall, 2005). The study also shows that by eleventh grade, females reported a superior proficiency in their use of electronic mail and use of the Internet (Christensen, Knezek, and Overall, 2005). This later finding reflects the results of a recent study of higher education faculty in that female professors reported dedicating more time per week using e-mail than their male counterparts (DeAngelo et. al., 2009). Ultimately, the way that teachers were taught influences the way they will teach meaning that previous experiences shape pedagogy. The higher incidences of use of technology for communicative purposes such as e-mail, may reflect a more student-centered, inclusive learning community.

At the post-secondary level, early studies suggest gendered disparity whereas more recent studies show decreased differences in the use of computers. Williams et. al. (1993) found that males reported an increased use of and familiarity with computers in their day to day activities and had self-reported higher competency in the use of computers as compared to females. More recently, Zhang (2005) demonstrated that sex was not related to reported college students' interest and use of distance learning. Davis and Davis (2007) found no variation in their perceived technological proficiency between males and females. Further, Blum et al. (2007) note

that any differences in the way that men and women use technology is more likely the result of the influence of environmental and cultural factors as opposed to their gender.

In terms of faculty use of technology for instruction, the literature reports historically contradictory data. Several earlier studies have suggested no observed difference between genders in terms of technology usage (Ruth, 1996; Baker, 1994; Milet, 1991). Similarly, a study of full-time faculty at a large Midwest university found no significant connection between faculty gender and use of instructional technology (Gueldenzoph et al., 1999). Conversely, other previous studies report gender differences in the use of instructional technology. Specifically, technological language can be considered male-focused because of the use of terms that evoke power relations that enforce "dominance of male ideology" (Wilson, 1992, p. 883). This notion was supported by Cockburn and Ormond (1993) in that they claimed that technology is gendered because males are predominantly responsible for its development and creation. Therefore, there may be a disconnect between the technology and how women come to know and understand it-and subsequently use it. One final study that found a difference in how male and female faculty use technology was a study by Spotts, Bowman & Mertz (1997). In their findings, they reported that male faculty were more likely to feel more conversant than their female counterparts in the use of technology.

The contradictory findings found in past studies were noted again in more recent research. Two studies of particular note in terms of no reported difference in gender use of technology were Gerlich (2005) and Anduwa-Ogiegbaen and Isah (2005). In the first study, Gerlich (2005) found no difference between male and female faculty in their discernment of online teaching. In the second study, no difference was reported between genders in the use of the Internet (Anduwa-Ogiegbaen and Isah, 2005). Other recent studies report a difference in

regard to gender use of technology. Specifically, Campbell & Varnhagen (2002) determined that, based on the premise that women learn differently than men, they may not benefit from features within instructional technology modules. Gunn (2003) found that the use of technology-enhanced instruction perpetuates the "socio-cultural complexity or gender imbalance" that exists as a result of "unequal access to technology between men and women" (p.14).

Additional research in this area presents evidence for the conception that female faculty may be more willing to incorporate an ethos of caring in terms of a sound linkage to classroom relevance as part of their instructional programs as opposed to men (Crooks, Yang & Duemer, 2003). Thompson & Lynch (2003) found that male faculty reported higher "self-efficacy" in use of the Internet that indicates that males "were significantly more likely to express confidence in their ability to organize and execute courses of Internet actions" (p.375). Peluchette & Rust (2005) suggest that female management faculty members had an increased likelihood to consider student learning styles as part of their decision to incorporate instructional technology as compared to their male colleagues. Finally, Zhou & Xu (2007) found that male instructors at the university level "have greater expertise and feel more confident in the use of computers than females" and female faculty "are more likely to have a student-centered overall concept of teaching" (p.151). This may have repercussions for the manner that instructional technology training might be approached in higher education settings based on differences in gender.

2.7 CONCEPTUAL FRAMEWORK

The conceptual frame of my dissertation consisted of a pedagogical dilemma (incorporation of student-centered pedagogy in the use of instructional technology, in this case, Blackboard), within an educational context (defined as online or hybrid courses at the graduate versus undergraduate levels) influencing an audience (faculty who may consider teaching all or some of their course presentation online and/or instructional designers who assist faculty in this process) (Piantanida & Garman, 2009). The conceptual frame was informed by the theoretical framework which is defined for my dissertation as Women's Ways of Knowing and feminist pedagogy.

3.0 THEORETICAL FRAMEWORK

The theoretical foundation through which the current research will be based is Women's Ways of Knowing (Belenky et. al., 1997), an epistemological model, and feminist pedagogy (Chow et al., 2003; Campbell, 2002; Stake & Hoffman, 2000). Epistemology, the study of the relationship between the "knower and would- be known," (Mertens, 2005, p.9) influences how individuals understand information (Hofer, 2001). Feminist epistemology, such as Women's Ways of Knowing "examines different perspectives from which women view reality and draw conclusions about truth, knowledge, and authority" (Belenky et. al., 1997, p. 3). Feminist pedagogy is a theory based on a student-centered, collaborative approach to teaching and is democratic in its incorporation in the classroom. Feminist pedagogues believe that students have a primary role in the construction of the learning experience. Women's Ways of Knowing and feminist pedagogy will serve as the theoretical lens through which data will be collected and analyzed; the analytical framework is derived from relevant aspects of both of these theories.

3.1 WOMEN'S WAYS OF KNOWING

The Perry Scheme is the antecedent to Women's Ways of Knowing and will be discussed briefly because of its significance in the development of one of the primary theories of this framework. The Perry Scheme was developed based on yearly interviews with male Harvard students in the

1950s and early 1960s that became the basis to a schema of intellectual development during the college years. Perry (1970) concluded from this work that nine positions of development that followed a directional pattern could be identified. The nine positions were subsequently classified into four primary categories that are briefly summarized here: *dualism* (positions 1-2): knowledge is classified as right or wrong and comes from an external authority, *multiplicity* (positions 3-4): knowledge includes a consideration of multiple perspectives, *contextual relativism* (position 5): knowledge is contextually constructed and the identification of the self as an active participant in the process, and *commitment within relativism* (positions 6-9): knowledge is contextually constructed and the self must make a decision based on the context (Moore, 2003; Perry, 1970).

Perry's scheme as described above served as the framework through which Belenky et al. (1997) collected data toward the development of feminist epistemology, Women's Ways of Knowing. The authors purposefully sampled women from more varied backgrounds as compared to the sample in the Perry study. The women participants in the study were female students from nine various educational institutions. Comparatively, Perry's sample was composed of predominantly white males from an elite institution. Women's Ways of Knowing focuses on the self as she experiences the world, and details a directional pattern across five perspectives that do not lend themselves to a sequential, linear pattern of development, that was the pattern described in Perry's work. The five perspectives introduced in Belenky et al. (1997) are: *silence*- women are voiceless and resign to external authority (p.23), *received knowledge*- women are capable of receiving and reproducing knowledge (p.35), *subjective knowledge*- women believe knowledge can be known and self is an active participant in this process (p.54), *procedural knowledge*- women apply objective procedures to knowledge (p.100), and *constructed knowledge*- women

believe knowledge is contextually created (p.131). This research also detailed two positions within procedural knowledge: *connected knowing* (a compassionate approach to knowing) and *separate knowing* (a distant approach to knowing). In relation to teaching, educators can facilitate women's development of their own "authentic" voice if they "emphasize connection over separation," through collaboration, understanding, and acceptance in light of multiple perspectives and experiences (Belenky et al., 1997, p. 229). The work of Belenky et al., was informed by Chodorow (1978) and Gilligan (1979, 1982), specifically in its "focus on connection" (Severiens & Dam, 1998, p. 330).

The implications of the Belenky et al. study completed in 1986 were revisited more recently by Hogsett (1993) and Gallos (1995). Hogsett (1993) used Women's Ways of Knowing as a lens through which to critique Bloom's taxonomy, a widely accepted and influential work in the field of education. She claims that "tendencies [in the Bloom schema] lead not only to practices disadvantageous to girls but also to procedures potentially hurtful to all learners" (p.27). In her article on college teaching and how gender plays a role, she states that women today are not so different than the women participants in the Belenky et. al. (1986) study. She claims that steps can be taken to develop a classroom environment that is more supportive of women, examples include: designing assignments that include student experience, and providing encouragement in the classroom.

It is also important to note here that there is controversy in terms of the question of whether or not there is actually a difference in the way that men and women think. Anderson (1995) proposes that there is little evidence to suggest that this is the case and offers an alternative model "which does not suppose that women theorists bring some shared feminine difference to all subjects of knowledge" (p.62). Kane (1995) similarly states that "education

tends to have a greater positive impact on recognition of gender inequality that on endorsement of group-based remedies for such inequality" (p. 74). Hofer (1997) critiqued the work of Belenky et al. (1986) as they stated that "although they acknowledged that similar categories could be found in men's thinking, their study provided no means to assess the gender-related nature of the findings" (p.96). She also criticizes the ordering of the interview protocol in the Belenky et al. study, suggesting that their conclusions may have been skewed as a result of the interviewees being "primed by the interviewers in earlier questions" (p.96).

3.2 FEMINIST PEDAGOGY

Feminist pedagogy is embedded in critical theory and is informed by the work of Freire (1970). It engages the historically oppressed in thoughtful dialogue and examination of their experience and in this case, through the use of a gendered lens, (Chow et. al., 2003). Feminist pedagogy emphasizes a classroom environment that is "relational (emphasizing relationships between teacher and students and among students themselves), experiential (focused on personal experience rather than abstract knowledge), and non-hierarchical (centered on students rather than the teacher)" (Campbell, 2002, p.30). Feminist pedagogues incorporate participatory learning, personal experience, contextual relationships, and multiple perspectives (Stake & Hoffman, 2000). Among the commonalities shared by feminist pedagogues in the development of their instructional programs are: cooperation, collaboration, interaction, emancipation, empowerment, connectedness, equality, and relationships (Campbell, 2002). These common dimensions are essential attributes of their teaching. Specific correlates of these dimensions in the college classroom would be increased emphasis on group-work, discussion, and participatory

learning. In feminist pedagogy, the student is an active and central part of knowledge construction.

The studies included below discuss the implementation of feminist pedagogy in the classroom. In one study, Gallagher (2000) describes a way in which feminist pedagogy is used in a tenth grade drama classroom. The study is included here because it argues that it is important to include "new classroom practices and a view of curriculum which address girls' experiences in necessary ways" (p. 71). It also calls practitioners to be more aware of their classroom and reflect on "social relations that construct our classroom realities" (p. 80). A more recent article by Crabtree and Sapp (2003) discusses the use of feminist pedagogy in higher education today. It explores the challenges that feminist pedagogues may face in light of institutional culture and climate and included a review of the barriers that exist in terms of feminist practice at the university level. Crabtree & Sapp (2003) site three primary barriers: "conservative opposition," "fear of teaching outside institutional norms," and "reservations among feminists" (p. 133). The authors go on to share personal stories of their application of feminist pedagogy in practice.

In one specific example, one author relays her struggle with how she should identify herself to students and specifically whether to impose the use of a formal title in the classroom (Crabtree & Sapp, 2003). In contrast to the ideals of feminist pedagogy, the use of a formal title may serve to separate the teacher from the students and unintentionally impose a power relationship. She describes that when she opted to use a more familiar title (first name), she was met with opposition among colleagues who believed a more traditional and formal naming convention should be used in the classroom. The author later discusses grading as challenging for feminist pedagogues as most institutions value a rigorous normal curve-style grading scale where as the goal for feminist pedagogues is socially constructed learning. The author

additionally mentions that for her, the consideration of age and physical attributes played a role in the power relationships within her classroom. This notion was similarly echoed in an earlier article by Wallace (1999) as she writes, “brings the issue of authority to the forefront in a way that has become less pressing as I have aged and gained institutional respectability” (p. 184). Therefore, while the ideals of feminist pedagogy are clearly articulated, the movement to practice in the classroom may be more complicated.

In terms of the application of feminist pedagogy to the online classroom, Chick and Hassel (2009) demonstrate confidence in the ability of the technology to support its integration. They even argue that this medium may be more amendable to the use of feminist pedagogical approaches to teaching than the traditional face-to-face classroom, specifically in its ability to reach previously marginalized student groups. In their article, they cite specific examples of strategies that can be used to implement feminist pedagogy in the online classroom; among them are the use of discussion boards, group wikis, and home pages (Chick & Hassel, 2009).

3.3 SIGNIFICANCE OF THE STUDY

The significance of this study is its capacity to provide insight into the ways in which faculty use a course management system in higher education and more specifically, its exploration of the role of faculty gender in online teaching. This dissertation will serve to contribute to the knowledge base in this subject area by examining gender differences in the pedagogical approach to instructional technology such as CMSs, a highly used teaching tool in higher education. As use of technology for instruction continues to increase, it is important for institutions of higher education to understand how faculty are using technology. Possible gender

differences in the approach to such technology for instruction may inform practice in higher education in terms of integration and adoption of CMSs, specifically in the development of faculty support and training programs.

4.0 RESEARCH DESIGN

This dissertation employs qualitative methods and utilizes a multiple case study strategy as its research design. Qualitative research is appropriate for studies that seek to provide an in-depth description of "topics in all their complexity, in context" (Bogdan & Biklen, 2007, p. 2). The basis for selection of qualitative research was determined by the nature of the research question and the researcher's view of the world (Mertens, 2005). Further, the use of qualitative methods is appropriate as the focus of the research question is diversity among individuals (Patton, 2002). In this study, that diversity is the potential difference in the pedagogical approach of male and female faculty in the implementation of instructional technology in higher education. Secondly, the use of a qualitative methodology suits the researcher's view of the world- a feminist perspective embedded in the transformative paradigm. Mertens (2005) describes basic principles underlying this view as: focused on reversing gender inequities, where values are "culturally, socially, and temporally contingent" and there is an existence of multiple ways of knowing (p.18).

4.1 RESEARCH STRATEGY: COMPARITIVE CASE STUDIES

Case study is the chosen qualitative strategy because it provides a "detailed examination" of a setting or subject (Bogdan & Biklen, 2007, p. 59). Within the case study approach, a multiple-case study design is fitting because it allows for the study of two or more subjects (which in this study would be direct comparison of male and female faculty within each context). A multiple case study strategy also increases the analytical benefit of the study whereby data obtained from studies employing this design are considered more compelling (Yin, 2003). A multiple case study design with embedded units of analysis allows for consideration of each individual unit in relation to "contextual conditions." In this dissertation, the individual (embedded) unit is the faculty instructor of a specific course (the case) and contextual elements are identified as: online course presentation (defined as either strictly online or hybrid course whereby a course management system is used to supplement face to face instruction) and level of instruction (defined as either graduate or undergraduate courses) (Table 2).

Table 2. Case descriptions

	Context	Case	Embedded Units
Case Study #1	Hybrid presentation	Graduate course	Female, Male faculty member
Case Study #2	Hybrid presentation	Undergraduate course	Female, Male faculty member
Case Study #3	Online presentation	Graduate course	Female, Male faculty member
Case Study #4	Online presentation	Undergraduate course	Female, Male faculty member

The multiple case study design is detailed graphically in Figure 1. The units of analysis are the courses selected to meet specified criteria. The smaller boxes inside each dashed line represent each embedded unit of analysis, one male and one female faculty member for each

case. The dashed line represents the boundaries between unit and case, which are inter-related and are unlikely to be "sharp" (Yin, 2003, p. 39). The box surrounding the individual unit, enclosed by a dashed line represents the level of instruction, graduate or undergraduate level courses. Finally, the largest box surrounding each represents the presentation of instructional technology, online or hybrid. In this way, data collection can proceed in light of the multiple layers of complexity present in each case and may accurately capture pedagogical approaches in relation to multi-faceted contexts.

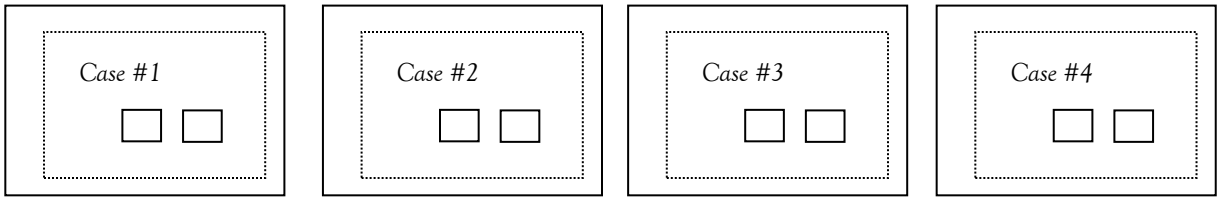


Figure 1. Multiple Case Study Design.

4.2 SETTING

The setting of this study is the University of Pittsburgh, a state-related public research university located in Pittsburgh, Pennsylvania. The University of Pittsburgh was founded in 1787 and offers graduate, undergraduate, professional and continuing education courses on the main campus (Oakland, PA) as well as four regional campuses (Titusville, Bradford, Johnstown, and Greensburg, PA). The University of Pittsburgh has evolved into "an internationally recognized center of learning and research" (University of Pittsburgh. 2009). The University serves 32,936 full-time equivalent students and employs approximately 4,807 full and part-time faculty (University of Pittsburgh, 2011a).

The University of Pittsburgh was chosen as the setting for the current study for several reasons. First, the University was an early adopter of the Blackboard CMS, that continues to be the leading CMS in higher education today (Green, 2009). The institution adopted the Blackboard CMS in May, 1998 for faculty course developers. Since its inception, faculty adoption of the CMS has increased 30% per year at the university (Laudato, personal communication, December 13, 2009). This history and rate of growth of faculty adoption provides a rich context for this dissertation. Secondly, the University of Pittsburgh, as a large research-institution, holds its faculty to excellence in teaching, research, and scholarship; considered the hallmarks of the tenure process. In this regard, a more accurate picture of the teaching role may be examined as one of multiple demands on the faculty at such an institution. Finally, a single setting will provide a more accurate account of the potential pedagogical differences in the implementation of a course management system as situational factors that may interfere with determination of differences will be primarily avoided. For example, the primary focus of faculty at a community college is teaching, therefore online course components of community college faculty may be structured quite differently than the online course components of courses taught at research institutions.

4.3 SAMPLE SELECTION

Purposeful sampling was used to select participants on the basis of established criteria. Mertens (2005) defines this strategy more specifically as “criterion sampling,” (p. 320) whereby the researcher develops criteria for the study then selects cases to meet each. In terms of sampling strategy, a list of courses offered on Blackboard during the spring term of 20xx at the University

of Pittsburgh was obtained for both hybrid and online types of presentation. From this list, only courses that had enrollment and have one instructor were retained (thereby eliminating courses that have 0 enrollment and course that were team taught). After courses were initially examined to meet the two broad criteria (enrollment and single instructor), faculty teaching courses were selected according to the parameters of the contextual factors of the multiple case study design outlined in Table 2: Case Study #1: Hybrid course (course components presented in the Blackboard as a supplement to face to face instruction), Graduate level, female and male faculty member. Case Study #2: Hybrid course, Undergraduate level, female and male faculty member. Case Study #3: Online course, Graduate level, female and male faculty member. Case Study #4: Online course, Undergraduate level, female and male faculty member. Further description of cases is included in Appendix A as well as diagram in Appendix B and summary illustration in Appendix C.

4.4 DATA COLLECTION

Data was collected from three sources: in-depth interviews (of faculty meeting specified criteria for each case study), course observations, and content analyses of syllabi. The use of multiple sources of data will "lead to a fuller understanding of the phenomena" (Bogdan & Biklen, 2007, p.115-116). Subjects meeting specified criteria were first contacted and asked to participate in the study. An initial e-mail was sent out to faculty meeting specified criteria, a copy of that e-mail is included as Appendix F. Once faculty agreed to participate, an interview was scheduled

and permission was obtained to observe courses. Specifically, the researcher asked to be added to the course as a "guest," that allowed for observation of course material and discussions without access to student grades and other private information. The interview as the "dominant strategy," was used to "gather descriptive data in the subjects' own words so that the researcher can develop insights on how subjects interpret some piece of the world" (Bogdan & Biklen, 2007, p.103). In the event that a selected faculty member did not respond to the initial e-mail, a second message was send before choosing another faculty member for participation in the study.

4.4.1 Interviews

The interviews were conducted on-site or over the phone. A semi-structured, probing protocol including open-ended questions was used to guide the conversations (Appendix E). Each question in the interview protocol is linked to the analytical framework based on the theoretical underpinnings of the study (Table 3). The semi-structured interview as written provides "comparable data across subjects," that is a critical element of the current design- a multiple case study (Bogdan & Biklen, 2007, p. 104). The interviews were recorded and subsequently transcribed. The interview protocol was tested prior to the data collection process. A thorough description of the pre- and post-test protocols is outlined in the section below.

4.4.1.1 Interview Protocol Pre-test

Prior to data collection, the protocol was tested by presenting the questions to faculty who have taught or are currently teaching online, as they would be presented to faculty participants as part of the study (Appendix D). As part of the test, faculty provided feedback on the questions so as to ensure construct validity of the instrument. As a result of this test, questions were changed

from the original, proposed protocol. The recommendations that were made are summarized here:

Question 1.

Change "how" to "what" are your instructional goals and added sub question "how do you convey your instructional goals to your students"

Question 2.

No changes were recommended.

Question 3.

Replace "what do you believe about students" with a multiple part question as follows: " 3. Describe the type of student who takes your course. What is his/her career focus, level of technology skills, age, status in the program, learning style, and any other characteristics that may impact learning? 3a. To what extent do you incorporate student's experiences into your online teaching? How do you do so? 3ai. To what extent does this play a role in the development of assignments as part of your course? 3aii. Which tools in Blackboard do you use to collaborate with your students? 3aiii. Do you use any non-Blackboard tools and technologies as part of your course? If so, why?

Question 4.

Based on revision of question 3, question 4 was restructured as: "To what extent do students participate in your course? 4a. How do you construct your course to support student-student interaction, student-instructor interaction and student- content interaction participation?

Question 5.

As the pre-test question was added in part to question 4 in the post-test, question 5 was eliminated and became pre-test question #6 "What do you believe about student involvement in the construction of course content? 5a. How do you include students in the construction of course content?"

Question 6.

Pre-test question #7 became post-test question #6 with no change as follow: Describe how you incorporate multiple perspectives in your online classroom? 6a. To what extent do you support integration of various opinions (diversity) in your course content?

Question 7.

Pre-test question #8 became post-test question #7 with no change as follows: To what extent do contextual factors (consideration of social, political, and economic factor) influence learning in your online classroom?

4.4.2 Course Observations

Course observations took place over eight consecutive weeks of spring semester 20xx (February 1, 2010-March 28, 20xx). The researcher was a “complete observer,” in the sense that she did not participate in the course, but rather observed and took field notes (Bogdan & Biklen, 2007, p. 91). The field, in this dissertation is the online classroom, a shift that was noted in Bogdan & Biklen, 2007 as: “a more significant difference in the definition of the field concerns the shift from spacial to virtual and discourse communities in fieldwork practice.” (p. 83). Field work in

this dissertation included observation of overall course structure including assignments and discussion boards. Observations of each course took place once a week. Course observations were rotated by day of the week such that the same course was not observed on the same day each week.

4.4.3 Content-Analysis of Syllabi

Document analysis of course syllabi is an additional source of data for this dissertation. Within the syllabus, overall course design and assignments were studied. Document analyses were used in this dissertation to gain "insights into the dynamics of everyday functioning" (Mertens, 2005, p. 389). Content analysis of syllabi was important because the researcher cannot observe the classroom at all times. In this vein, documents give the researcher "access to information that would otherwise be unavailable" (Mertens, 2005, p. 389).

4.5 DATA ANALYSIS

Data analysis and interpretation for the proposed study was conducted with specific focus on the contextual relationships within each case and across all cases. According to Bogdan and Biklen (2007), analysis refers to "working with data" while interpretation refers to "explaining and framing your ideas in relation to theory" (p. 159). Therefore, data was examined using an analytical framework derived from relevant aspects of Women's Ways of Knowing and feminist pedagogy (Table 2). Yin (2003) suggests that an analytic framework developed from theories informing the work is "the most preferred strategy" (p. 111) for analysis of case study data.

Three relevant dimensions emerged from the two theories – (a) connection, (b) collaboration, and (c) diversity – and will serve to address the study's research question. Each dimension and its relation to the research question are discussed below. The research question, "What happens when male and female faculty use a course management system to present all or part of their instructional programs to students? proposes two primary elements to be addressed: student-centered pedagogy and gendered differences in the use of instructional technology. First, student-centered pedagogy is an approach to instruction whereby the focus of learning is the student, inherent therein is the notion that "the interests, experiences, and knowledge of the students are legitimized and incorporated into the teaching and learning process" (Chow et. al., 2003, p. 262). For this dissertation an important aspect of student-centered pedagogy will include the premise that "students of diverse backgrounds, in partnership with the teacher, are encouraged to share their knowledge and insights, to shape classroom activities and assignments, and to assume leadership roles" (Chow et. al., 2003, p. 262). In order to uncover gender differences in terms of the student-centered pedagogical approaches to instructional technology, three dimensions based on relevant aspects of Women's Ways of Knowing and feminist pedagogy, in relation to the above aspects of student-centered pedagogy will be discussed.

4.5.1 Connection

The first dimension, connection, refers to the relationship between the personal experiences of the students and teacher with the construction of knowledge within a course. Women's Ways of Knowing describes connected teaching, where "educators can help women to develop their own authentic voices if they emphasize connection over separation" (Belenky et al., 1997, p. 229). In a "connected class" students and teacher reflect upon personal experiences in the process of

shaping the content of the course that is based on dialogue (Belenky et al., 1997, p. 219). Feminist pedagogy emphasizes relationships between teachers and students and students with other students (Campbell, 2002). As well, within feminist pedagogy, students are encouraged to "consider connections between their subjective realities and formal course content within an atmosphere of respect and support" (Stake & Hoffman, 2000, p. 30). Further, assignments and class discussion support and equally value the integration of personal experience and academic inquiry. This emphasis on the integration of experience and academics will ultimately allow students to overcome prescribed gender stereotypes (Stake & Hoffman, 2000). In relation to the research question, *connection* as described here through theoretical underpinnings legitimizes "the interests, experiences, and knowledge of the students" (Chow et. al., 2003, p. 262).

4.5.2 Collaboration

The second dimension of the analytical framework is collaboration, that refers to the democratic construction of knowledge within the classroom, whereby both student and teacher equally contribute to the development of the course. This dimension is described in Women's Ways of Knowing as "sharing the process," (Belenky et. al., 1997, p. 214) where knowledge belongs to everyone participating in the course, and is not the sole possession of the instructor. It follows that women need models of thinking that invite participation rather than the presentation of knowledge as a polished product or truth. In feminist pedagogy, the dimension of collaboration is emphasized in "students' involvement in and contribution to the learning process" (Stake & Hoffman, 2000, p. 30). Again, hallmarks of the democratic classroom are seen by non-hierarchal structure, "joint decision-making and collective learning" (Chow et. al., 2003, p. 262). Collaboration as supported by the theoretical framework is linked to the research question in that

students “in partnership with the teacher, are encouraged to share their knowledge and insights, to shape classroom activities and assignments, and to assume leadership roles” (Chow et. al., 2003, p. 262).

4.5.3 Diversity

The final dimension of the analytical framework for this dissertation is diversity - the inclusion of multiple perspectives in the construction of knowledge. In Women’s Ways of Knowing, “connected teachers welcome diversity of opinion” (Belenky, et. al., 1997, p. 223). In this regard, the instructor welcomes all perspectives, and avoids “inflicting” their own opinion in class discussion (Belenky et. al., 1997, p. 223). Elements of feminist pedagogy echo this theme as the incorporation of multiple perspectives is critical. Specifically, integration of diverse perspectives as part of knowledge construction requires an understanding of social, political, and economic factors (Stake & Hoffman, 2000). This dimension is intricately tied to the research question in that “students of diverse backgrounds, in partnership with the teacher, are encouraged to share their knowledge and insights, to shape classroom activities and assignments, and to assume leadership roles” (Chow et. al., 2003, p. 262).

4.5.4 Analytical Framework

The analytical framework developed for this dissertation is based on three dimensions, connection, collaboration, and diversity, that came out of relevant aspects of the theoretical framework. Table 3 details the analytical framework. Each dimension is shown in Table 3 as it was derived and supported by Women’s Ways of Knowing and feminist pedagogy. The

interview protocol question number is also shown as supported by each dimension. Finally, each dimension is related to additional sources of evidence including syllabus review and various aspects of the online course such as the discussion boards.

Table 3. Analytical framework based on the theoretical underpinnings of the study.

	Women's Ways of Knowing	*Feminist Pedagogy*	*Interview Protocol Question*	*Additional Sources of Evidence*
Connection	-Personal experiences of the students and teacher with course content -Dialogue between students and with teacher is emphasized	-Relationships between students and teacher and students with other students -Integration of personal experience and academic inquiry	#1,2,3,4	-Syllabus review -Discussion threads
Collaboration	-"Sharing the process[1]" -Knowledge construction through contribution of students and teachers -Participation, knowledge presented as process instead of truth	-Students contribute to the learning process -Democratic construction of knowledge -Equality and power among learners	#1,2,5,6	-Syllabus review -Discussion threads
Diversity	-Inclusion of diversity of opinion -Avoids "inflicting"[2] own opinion	-Emphasis on diversity and justice -Incorporation of multiple sources- with consideration of social, political, economic factors	#1,2,7,8	-Syllabus (assignments) -Discussion threads

[1] Belenky et. al., 1997, p. 214

[2] Belenky et. al., 1997, p. 223

4.5.5 Emergent Themes

Initial analysis and interpretation of the data lead to the development of five emergent themes: 1) structuring of the classroom with intentionality, 2) creating community, 3) student-centeredness, 4) bridging between online and seated class (for hybrid cases only), and 5) limitations of the course management system platform (for online cases only). Each of the five themes is described in the following sections. All streams of data including faculty interviews, course observations and syllabi analyses were coded along the themes.

4.5.5.1 Structuring of the Classroom with Intentionality

Structuring of the classroom with intentionality refers to the faculty member's deliberate and reflective expectation of the course they teach. It broadly addresses the faculty member's goals for their course, constructed through attentive and intentional reflection. Moreover, the theme describes the act of shaping student knowledge construction through course design and structure. Intentionality in this case was predicated by evidence of faculty aspiration for specific student outcomes in their courses, ranging from mastery of course content to attainment of critical thinking skills.

4.5.5.2 Creating Community

Creating community refers to the faculty member's development of an inclusive classroom environment that incorporates multiple perspectives, showing clear evidence of valuing diversity. It is an outgrowth of the first theme entitled "structuring of the classroom with intentionality," in that it is included as an intentional goal for the course and integrated into course design. Creating community in this case, describes trust-building in the classroom between students and students

and the instructor. Finally, it refers to evidence of encouragement in the context of the classroom, where boundaries are inclusive and students are welcomed and supported in engagement of discourse.

4.5.5.3 Student-Centeredness

Student-centeredness for this dissertation refers to evidence of tailoring the context of the course to the student. Further, it refers to giving voice to how students come to understand knowledge, presented as course content. Student-centeredness includes incorporating student interests into the curricula for the course, allowing for feedback from students. In addition, faculty accessibility to students over the term both in and outside of the classroom will be considered part of what is considered to be a student-centered classroom. Specifically, accessibility refers to the faculty member's consideration of student schedules in terms of making themselves available for questions or further discussion about the course. Student-centeredness refers to student participation that is clearly at the center of the course as students are encouraged to engage in content, shaping dialogue around the subject matter.

4.5.5.4 Bridging between Online and Seated Class (For Hybrid Cases Only)

Bridging between online and seated class will be considered for the hybrid cases only; in that it refers to the faculty member's intended blending of their online course component (in Blackboard) and their face to face, in-class meetings. Bridging the two aspects of the course addresses the relationship in the hybrid case, between Blackboard and seated classes. As part of this definition, the faculty member addresses how they incorporate the Blackboard component of their course in the weekly face to face class meetings, if at all. Further, it drives at the faculty

member's tendency to thread both components of their course in its design. An example of this theme would be posting pertinent class documents on Blackboard.

4.5.5.5 Limitations of the Course Management System Platform (For Online Cases Only)

Limitations of the Course Management System (CMS) platform will be used for the online cases only, as it refers to the faculty member's perception of the use of a CMS as the sole source of presentation of course content and specific to this dissertation, the use of the Blackboard CMS in the development and presentation of an online course. It particularly addresses challenges faced while using the system and further drives at the nature of the design of an online course, considering differences between online and seated classroom pedagogy. For example, this theme considers the manner in which instructors must design the entire course before students are enrolled. It also addresses the way that their ability to react to student feedback differs from a face-to-face classroom.

4.6 HIERARCHICAL TREE DIAGRAM ANALYSIS PRESENTATION

In this section, a hierarchical tree diagram is presented that illustrates the relationships between theoretical constructs, emerging themes, and collected data. Figure 2 shows at the far right, the research question of the study that is summarized here as: gendered differences in student-centered pedagogical approaches to instructional technology. From right, the second column includes the dimensions of the analytical framework presented in Table 3 as connection, collaboration and diversity. In addition, Blackboard course structure is included here as it is

introduced along the three dimensions of the analytical framework in analysis of each course. The Blackboard course structure is important as it yielded not only relationships to instructional goals but information on contextual factors such as type of presentation. Each dimension is then connected to relevant emerging themes in column 3 of Figure 2. The themes arose from study of three lines of inquiry including interview (represented in column 4) and course observations and document analyses of syllabi (in column 5) of Figure 2.

Figure 2 as shown here highlights not only data analysis but the multi-faceted nature of the research problem. Creswell (2007) suggests that a tree diagram is one way to “create a visual image of the information” (p.154). He further explains that this type of illustration presents analysis and can relate “raw data consisting of multiple sources of information” to “specific themes” (p.154). In this case, the illustration relates raw data gathered from three sources including faculty interviews, course observations and syllabus analyses to theoretical constructs and emerging themes.

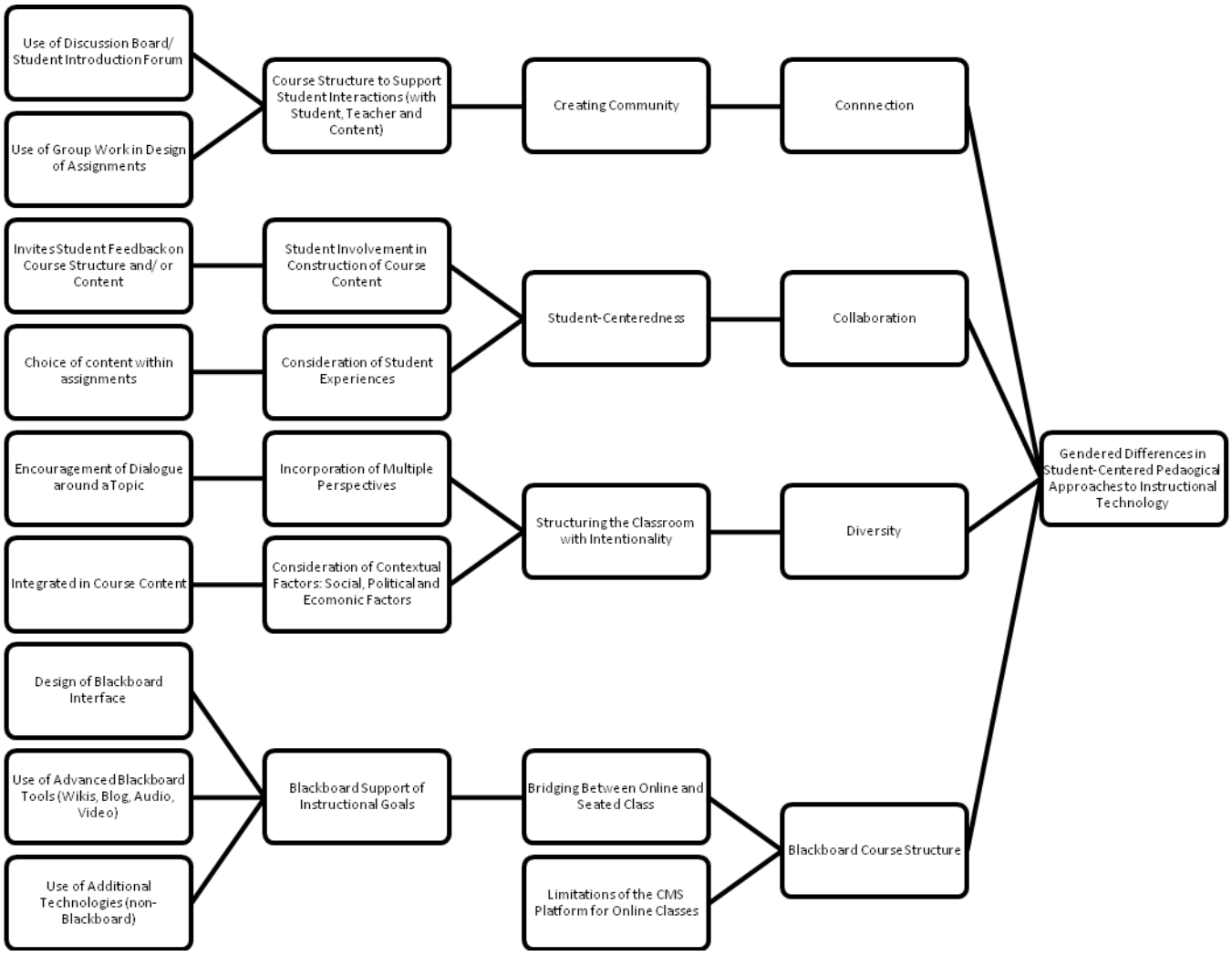


Figure 2. Faculty Gender and Student-Centered Approaches in the Use of a Course Management System

4.7 A RATIONALE FOR RESEARCH DESIGN AND DATA ANALYSIS

The research genre that I chose for my dissertation was case study. The research design that I developed was influenced by Yin (2003). Within the case study approach, a multiple-case study design was chosen because it allows for the study of two or more subjects (which in this study would be direct comparison of male and female faculty within each context). A multiple case study strategy also increases the analytical benefit of the study whereby data obtained from studies employing this design are considered more compelling (Yin, 2003). Three streams of data were collected and analyzed: faculty interviews, document analysis of syllabi and course observations of Blackboard. The analysis occurred through description of online course components in Blackboard, narrative accounts of faculty course developers, and connection to an analytical framework which was derived from the theoretical underpinnings of the study. This process followed an analytical strategy which relied on the "theoretical propositions that led to the study" (Yin, 2003, p. 111). The analytical framework that was used can be found on page 69 as Table 3 in my dissertation. The technique that was used was the "cross- case synthesis," it will be further described in the section to follow (Yin, 2003, p. 133).

4.8 A LOGIC OF JUSTIFICATION

The research genre selected and discussed above is case study, which will serve as the starting point for a logic of justification. Piantanida & Garman (2009) state that: "of critical importance is the extent to which the procedures fit with the knowledge-generating assumptions embedded

in the genre claimed for the study" (p.81). In that vein, Stake (2005) claims the following "conceptual responsibilities" of the case study researcher:

> a)Bounding the case, conceptualizing the object of study b) Selecting phenomena, themes or issues (i.e the research questions to emphasize) c) Seeking patterns of data to develop the issues, d) Triangulating key observations and bases for interpretation e) Selecting alternative interpretations to pursue and f) Developing assertions or generalizations about the case (p.460).

In my study, I carefully addressed each conceptual responsibility as written by Stake (2005) above, and will describe each in sequence here. For (a) above, I bounded the case through definition of contextual factors. This design was guided by Yin (2003). In this dissertation, the individual (embedded) unit is the faculty instructor of a specific course (the case) and contextual elements are identified as: online course presentation (defined as either strictly online or hybrid course whereby a course management system is used to supplement face to face instruction) and level of instruction (defined as either graduate or undergraduate courses). A multiple case study strategy increases the analytical benefit of the study whereby data obtained from studies employing this design are considered more compelling (Yin, 2003).

In terms of selecting themes as in letter (b), I proposed one overarching research question as: "to what extent do gendered differences exist in student-centered pedagogical approaches to instructional technology." The question was left intentionally broad to allow for the exploration of emerging themes. For (c) above, I sought patterns of data to develop issues in my consideration of emergent themes. The themes were defined on pages 70-72 of my dissertation in chapter 4. As well, I have included a visual representation of data analysis as figure 2 on page 74. The illustration serves to present relationships between theoretical constructs, emerging themes and collected data. In regards to letter (d) above, triangulation of data was included as part of the design and analysis of my study. Three streams of data were considered as course

observations, faculty interviews and syllabus analysis. The use of three streams of data, referred in the text of the dissertation as triangulation enables the use of "multiple perceptions to clarify meaning" (Stake, 2005, p. 454). In an interpretive tradition, the use of such technique results in "diverse perspectives to enrich the possible interpretations of an event" (Piantanida & Garman, 2009, p. 82). For (e) above, alternative explanations were explored throughout chapters 5 and 6 for each case. An example is seen in the hybrid graduate male case where the faculty member did not use student-centered approaches in the online component of his course in Blackboard, but did seem to consider aspects of this type of pedagogy in his face-to-face class meetings. Finally, for (f) assertions were developed and presented in chapter 7 of my dissertation. The knowledge claims as presented are the result of an analytic strategy developed prior to data collection. The analytical framework, which was based on the theoretical framework that led to the study followed what Yin (2003) describes as an analytical strategy called "relying on theoretical propositions" (p. 111). The specific analytic technique that was followed was "cross-case synthesis," which Yin (2003) describes as specific to the analysis of multiple cases. A comparative case analysis summary matrix was presented on page 182 as Table 6 of my dissertation. The use of a word table along a "uniform framework" is one way to accomplish the cross-case synthesis (Yin, 2003, p. 134). Although I do recognize that the findings I have presented as knowledge claims are specific to the contexts I have defined, this is echoed as "interpretivist epistemology assumes that knowledge claims are researcher dependent and provisional within particular contexts" (Piantanida & Garman, 2009, p. 58).

4.9 STUDY VALIDATION STRATEGIES

While there is debate in regard to the applicability of reliability and validity in qualitative research, efforts have been made to introduce terms that are more appropriate given the specific aims of the methodology. Creswell (2007) suggests employing validation strategies. The strategies that were used in this dissertation that were described by Creswell (2007) were triangulation of data, thick description, researcher bias, and peer review. Creswell (2007) further suggests the use of at least two validation strategies in qualitative research. Triangulation of data refers to the use of several streams of data to provide confirming evidence. In this dissertation, data was collected from three sources: faculty participant interviews, online course observations and document analysis of syllabi. The use of thick description refers to a detailed account of the research process, contextual conditions and study participants (Creswell, 2007). Thick description was incorporated in both the research design, that includes examination of the context of each case and in the final analysis whereby each case was thoroughly described. Researcher bias was stated at the outset of the work and considered again in each phase of the work. Specifically, the researcher identified biases that she brings to the study prior to the collection of data that include being a female instructor of online courses. Finally, peer review was used in data analysis and writing phases. In these cases, outside sources were consulted to provide an “external check of the research” (Creswell, 2007, p. 208).

Table 4. Validation Strategies and Study Applications

Validation Strategy[3]	Study Application
Triangulation of data	Data collection from faculty participant interview, online course observations and document analysis of syllabi
Thick description	Detailed account of the research process, contextual conditions, and study participants in each of the four cases
Researcher bias	Recognition of researcher's position and worldview at the outset of the work
Peer review	Outside sources consulted to provide an external check of the research in both the data analysis and writing phases

4.10 LIMITATIONS OF THE STUDY

One potential limitation of the study design is choice of setting. In examining just one setting, the study's generalizability to other contexts may be called into question. Setting was intentionally chosen to meet several critical requirements[4] of the current study, specifically to avoid situational factors that may prohibit accurate accounts of gendered differences among faculty in their pedagogical preferences in terms of the integration of online course components. In order to strengthen the ability to repeat this study in other settings, replication logic is employed in the multiple-case study strategy, whereby method is repeated across four cases (Yin, 2003). An additional limitation may be in the integration of data. In this case, the researcher will focus analysis through the use of a theoretical framework as detailed in this document. Additionally, in qualitative research it is important to reflect on the researcher as instrument of data collection and the biases that she may bring to the study (Mertens, 2005). For this study, the researcher is a woman who currently presents instructional programs online.

[3] Validation strategies are adapted from Creswell, 2007.

[4] For review of rationale of setting choice, see Setting section.

5.0 CASE ANALYSES: CONNECTION, COLLABORATION AND DIVERSITY

This chapter will begin with participant demographics that provide additional contextual information for the study, and will continue with a review of each case as previously described: hybrid graduate, hybrid undergraduate, online graduate, and online undergraduate. Each embedded unit of analysis (male and female faculty) will be compared within each case followed by a comparative case analysis across all cases in the following chapter. Data analysis and interpretation was completed through three relevant dimensions derived from the theoretical underpinnings of the study: connection, collaboration and diversity that collectively comprise an analytical framework developed for this dissertation. Findings are reported in chapter 7.

5.1.1 Participant Demographics and Course Enrollment

As part of the interview protocol, five demographic questions were asked of the participants. The demographic questions were gender, ethnicity, highest degree obtained, department affiliation at the University of Pittsburgh, and faculty rank. Each participant was given the option to abstain from answering the questions. All participants answered all of the five. The sample included four male and four female faculty members, all identified as white/Caucasian, all obtained a Ph.D., there were three Associate professors, three Full Professors, one Instructor and one Part-time faculty member that participated in the study. The departments represented include English,

Graduate School of Business, Classics, Psychology, Nursing, Information Sciences and Communications. Course enrollment numbers ranged from 10 to 22 students. The c A summary of participant demographics and course enrollment numbers by course is shown in Table 5.

Table 5. Summary of Participant Demographics.

Course	Gender	Ethnicity	Highest Degree	Department Affiliation	Faculty Rank	Course Enrollment
Hybrid Graduate	M	White/ Caucasian	Ph.D.	Business	Associate Professor	22
Hybrid Graduate	F	White/ Caucasian	Ph.D.	English	Associate Professor	17
Hybrid Undergraduate	M	White/ Caucasian	Ph.D.	Classics	Full Professor	13
Hybrid Undergraduate	F	White/ Caucasian	Ph.D.	Psychology	Full Professor	17
Online Graduate	M	White/ Caucasian	Ph.D.	Information Sciences	Full Professor	22
Online Graduate	F	White/ Caucasian	Ph.D.	Nursing	Associate Professor	10
Online Undergraduate	M	White/ Caucasian	Ph.D.	Communications	Part-time	21
Online Undergraduate	F	White/ Caucasian	Ph.D.	Psychology	Instructor	20

5.2 HYBRID GRADUATE CASE

The first case included two hybrid graduate courses, one taught by a male faculty member (subject selected was a graduate course in Business Management Information Systems), and one taught by a female faculty member (subject selected was a graduate course in Women's Studies). The context of the first case study is a hybrid presentation that for this dissertation is the inclusion of part of the instructional program online in a Blackboard course component in

addition to traditional course meetings that took place face-to-face. The case is graduate-level courses. At the University of Pittsburgh, graduate courses are identified numerically in the following range: 2000-3999, which in this case were 2411 and 2252. The embedded units of analysis were one male and one female faculty member. In the following two sections each will be thoroughly discussed and case analysis presented through the three dimensions of the analytical framework designed for this study (*connection, collaboration and diversity*).

5.2.1 Hybrid Graduate Male

The hybrid graduate male unit of analysis that I selected for this dissertation was Information Systems (BMIS 2411). The course was offered through the University of Pittsburgh Joseph M. KATZ Graduate School of Business and College of Business Administration. The following course description is provided by the University of Pittsburgh:

> This course provides an overview of information technology and its application in a business. By simultaneously examining business cases and the capabilities of relevant technologies, students will develop an understanding of how information technology is the primary enabler for improved business processes. Systems and technologies that are examined from this dual business and technology perspective include relational databases, the Internet and networks, enterprise resource planning, customer relationship management, and supply chain systems (University of Pittsburgh, 2011b).

The course is a requirement in the Masters of Business Administration (MBA) tract. The course was offered in the evening from 6:15-9:15pm once per week. The instructor states early in the interview that his instructional goals for the course are: “the course is about the strategic use of information technology, how can we use IS in a business to align – to support the organizational structure and to support the business strategy.” The instructor for the course is an Associate Professor in the Business Department at the University of Pittsburgh. As part of his response to

the first interview question, he shares that the semester that I observed the course was the first semester that he taught the course. The number of students enrolled in the course was 22.

5.2.1.1 Blackboard Course Component Structure

The Blackboard course structure for the hybrid graduate male case employed the standard format for color and design (light blue background with white lettering). The navigation bar as constructed by the faculty member consisted of the following components: Announcements, Syllabus, Faculty Information, Course Documents, Week 01-Week 15 (Figure 3). The Announcements feature was not heavily used. The Syllabus file folder contained three items: a PDF file of the syllabus, a copyright notice and a note on accessibility, the latter two being vestiges of the syllabus templates discussed in Chapter 2. In the Faculty Information area of the course, the name and contact information of the faculty instructor of the course was included. Contact information provided included office number, phone, e-mail address, and web address (personal link to a homepage accessed through www.pitt.edu).

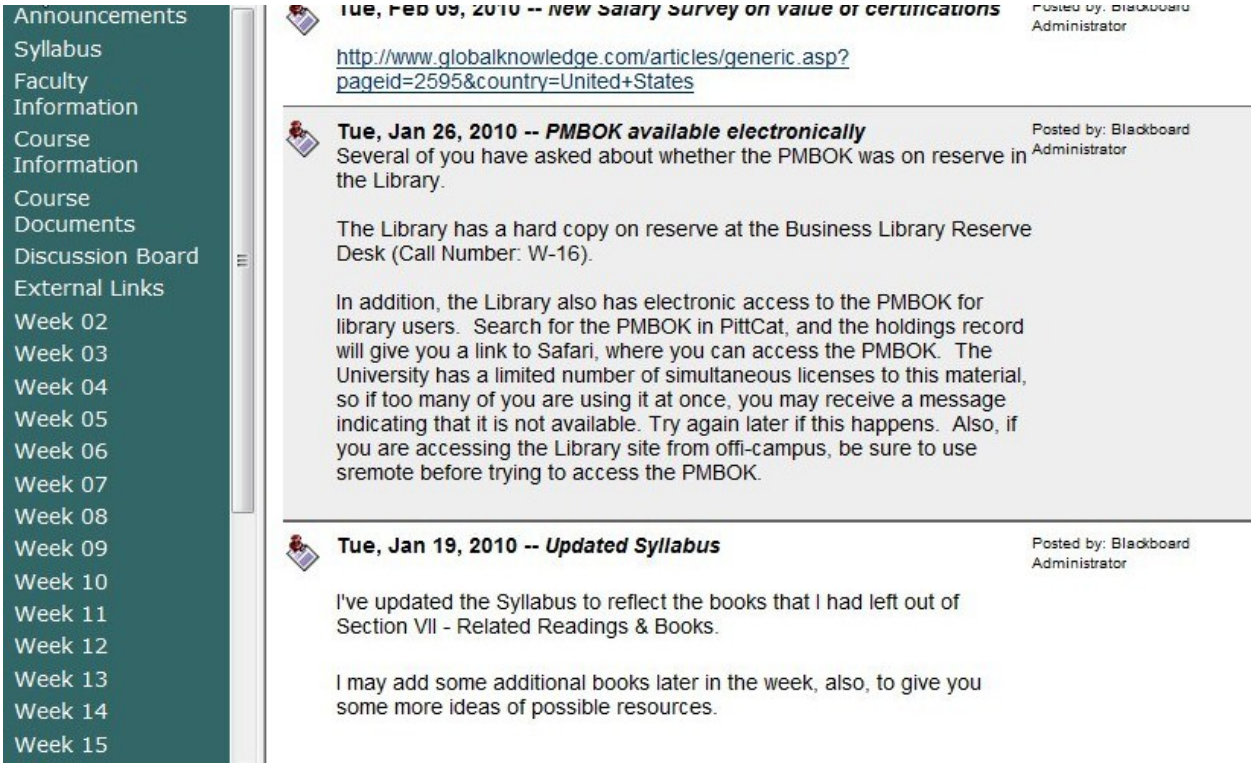


Figure 3. Screen Capture of Hybrid Graduate Male Course Navigation Bar.

The Course Documents area of the course included a word document on the use of the Business library. Under the posted file, was the following note: "You may find this handout about using the Business Library useful." The file was on University of Pittsburgh University Library System (ULS) letterhead. The handout contains first, the names and contact information of research assistants in the library. It also contains the websites of the library and a note on how to find business databases and articles. In addition, library hours are listed as well as a note about finding textbooks and important circulation policies.

The weekly folders varied in content (Figure 4). In general, the file folders contained Lecture Notes and Reading headings. In the Lecture Notes section, there are PDF files of Power Point slideshows. In the Readings section, there are listed course assigned readings and a link to access the reading assignments. Students are also able to submit assignments through the weekly

modules, where appropriate (not every weekly module contains an assignment to be submitted for grading). When I asked the faculty member how Blackboard supports his instructional goals, he stated that "I wish I could say more because I know there's a lot of potential there that I'm not even scratching the surface on, but primarily I use blackboard as a repository resource for the hard copy handouts distributed to students in class."

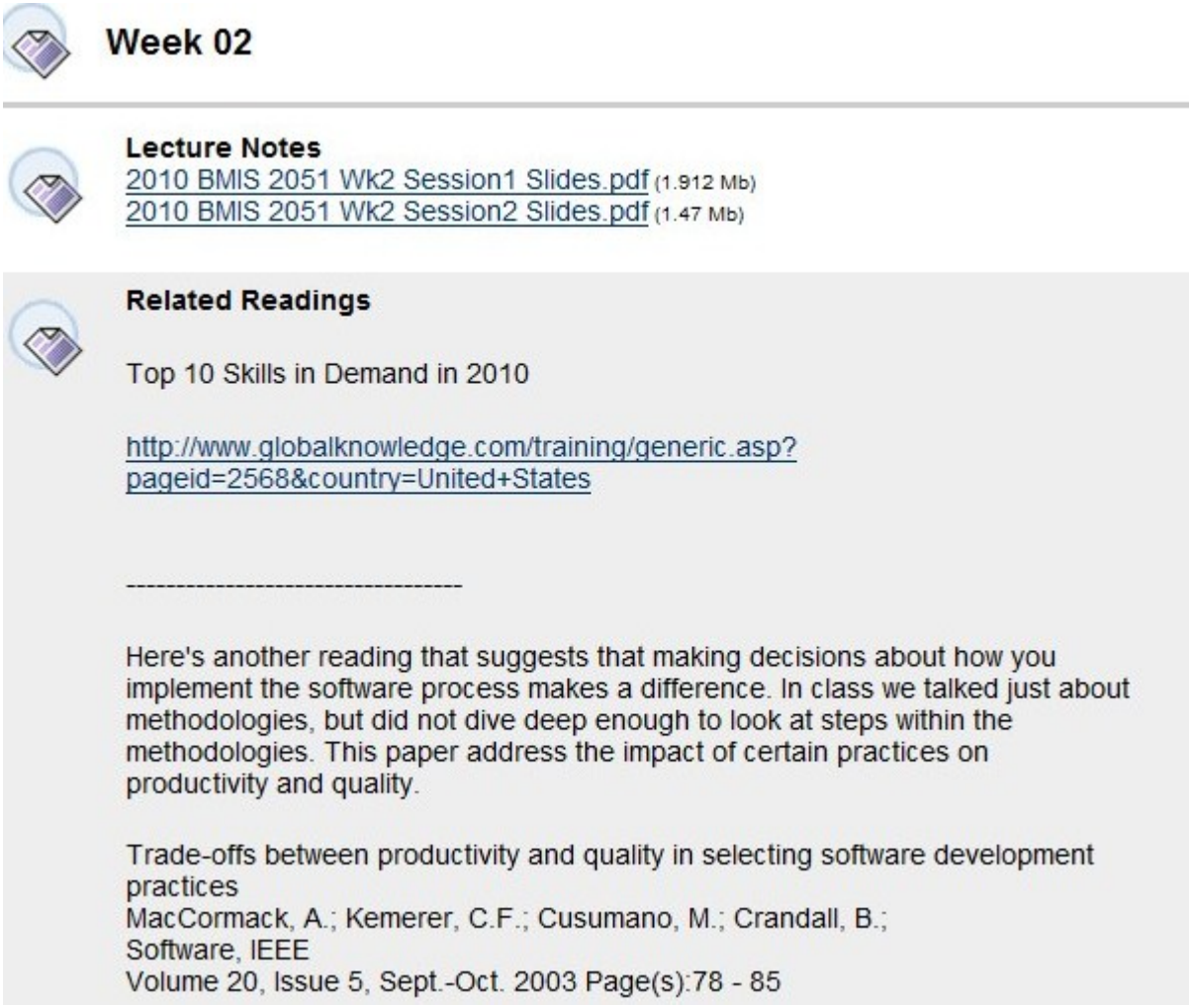


Figure 4. Screen Capture of Hybrid Graduate Male Course Module

5.2.1.2 Connection

In terms of connection, dialogue between students and students with the instructor was considered. For this dimension of the analytical framework, the support of the development of relationships between students and students with the instructor within the course management system was addressed. Specifically, integration of student experience with academic inquiry was examined. The faculty instructor of the course noted early that “I get them to try their experiences in plusses and minuses, so we can have a bit of dialogue around technology, that is another way of drawing them in and getting them to speak to each other. Some learning has to come from them talking to each other, not just from me reading a slide to them.” He later makes it clear that he knows the students in his class and their needs. For example, “They are part-time students with outside lives, carrying about half an academic load, they are juggling work, travel, families and school and so that part of the stressors, I’m aware of their concerns.” He later describes that he holds office hours at convenient times for his students, as opposed to hours that may be more amenable to his personal schedule. The instructor clearly makes attempts to engage in dialogue with his students, however there is a distinction between his face-to-face meetings and Blackboard component structure.

In the faculty information file folder on the Blackboard component of his course, the name and contact information of the faculty member is provided including office number, office phone, e-mail, web address, and office hours. There is no picture of the faculty member included. The instructor structures the course and assignments such that student evaluation includes multiple assessments of individual and group type that are averaged out of 100 including assignment, individual and group cases, a group project and presentation, quizzes, peer evaluations, class discussion and design contest. Possible extra credit bonus points are also

available (3 total possible). The total number of group points available is 43 out of 100. The assessment structure translates into the Blackboard component of the course as a repository for in-class materials such as lectures and a convenient place for students to submit completed assignments. In the Blackboard course, the instructor writes the following in the cases section: “Please do not e-mail me your case answers and other items due! Please use Blackboard. Please SUBMIT, don't just SAVE, your items.” Each week of the course has its own file folder on the navigation bar on the Blackboard site (with the exception of week 01 which has no designated file folder, only weeks 02- 15). Within each file folder there are PDF files of lecture notes and access to course readings along with assignments. Students may download lecture notes for each week as well as related readings (in some units). Students also submit assignments in Blackboard. It becomes clear after looking at the Blackboard component of the course and the syllabus that there is clearly a distinction between the Blackboard course shell and face to face class meetings. Specifically, the discussion board in the Blackboard component of the course was not used, nor was the announcement function to any great extent. He only e-mailed his students once during the semester in regard to class cancellations on the account of inclement weather.

The instructor distinguishes between his face-to-face class meetings and the way in which he uses the Blackboard course component. “Blackboard to me is mechanics, I use it for distributing- for collecting assignments, I use it for grading and collecting things like quizzes, for posting and communicating my lecture notes, because I do make all of those available to students.” This distinction between Blackboard and the face-to-face class meetings resonated as the instructor further discusses his use of the technology: “in the online, since I use it mostly as communication dissemination, very little [incorporate student experiences in online teaching], I

try to bring that in when lecturing [face-to-face].” An additional comment made was:

> If I were delivering… content, instead of just disseminating, if I were really doing a course, and I’m thinking of some of the courses like MLS fast track where they deliver the entire course on blackboard, I think you would have to on blackboard. For me, I tend to do it more face to face than blackboard. Where it shows in Bbd for me is more detail in assignments or more scaffolding for them as I put additional assignments out.

While the majority of the Blackboard component was used as information dissemination as stated above, there was evidence of use of the technology to communicate with students as part of the use of the quiz tool. In fact, in an announcement dated 2/13/2010, the instructor writes **“**Thanks to everyone for adapting to the online quiz. I have finished grading all of those, so you should be able to see your feedback in Courseweb. I am interested in your feedback, if you have any, about using this media (and your time outside class) for the quizzes.” In this post, he asks for feedback on the use of the quiz tool in Blackboard. The hybrid graduate male course showed evidence of connection as defined for this dissertation, but strictly in the face-to-face course meetings and not integrated into the technology. However, there was at least one aspect of the Blackboard course component where the instructor engaged in dialogue with the students in terms of feedback on the use of the quiz tool in addition to feedback given through Courseweb.

5.2.1.3 Collaboration

The collaboration dimension of the analytical framework refers to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement

of students with the teacher. In this course, the instructor designs assignments that incorporate student experiences and interests. In the following example, the instructor makes clear effort to incorporate student interests in the core curricula for the course. In the week 01 file folder, assignment 1 is:

> Identify the top three topics about information systems and organizations that you would like to see covered during this class. Describe the topic (or question) and explain why it is of interest or why it is important to you or your organization. Each of the three items should be no more than about a paragraph long. The full assignments should be only a page or so in length. Be concise in describing your topics. Why? We may have dedicated a part of a class period to a special topic or I will keep my eyes open for news items/ advances that match your interests-and your inputs will help shape that lecture or discussion or scanning.

Another example of the use of assignments as a way to incorporate student feedback and participation in the construction of knowledge in the course is the Innovation Project that the instructor referred to in the interview as an assignment that is presented the last few class sessions and through which "feedback and discussion is held around." A description of the assignment found in the course syllabus was:

> Innovation Project and Presentations: Your group should come up with an idea for turning an idea into a technological reality in an organization. Your group will make a brief (5 minute MAXIMUM) presentation, so please design your presentation to be an overview. The project is described in detail in a handout in Blackboard.

While there was evidence of the instructor's inclusion of student participation in the construction of knowledge in the course through the design of assignments and assessment structure, there was again a distinction between online and face-to-face class meetings. The instructor speaks below on the difference between "real-time" and "non-real-time" so as to say that he is making a distinction between synchronous and asynchronous discussions, perhaps disengaging in the technology as interactive for the purpose of his instructional goals.

> Well, one way [students participate in the course] –a couple of ways we've just talked about assignments and presentations and the discussions that goes around them – trying to draw experiences – have you had experienced something like this or can you think of an example, and then draw them out and in. that's real time – the non-real time is the observation they're struggling with a point or struggling with something or need more scaffolding in this area. Or they'd like to have more depth on this topic…the sort of thing might not be able to be done in real time but you can do for next lecture or for supporting the assignment that follows or for next semester. Some of my lectures start with examples. Let me give you 2-3 examples from recent research papers, oh wow okay… one or two of those examples will resonate with them. It's not so much student content but student participation or lack thereof. But I'm also constantly trying to understand how well are you getting it…how well are you understanding… was I able to communicate… do we need more examples?

The Blackboard course structure for this section did not use discussion board or any of the other interactive tools. The CMS serves as a repository where students can access lectures and other pertinent course documents.

5.2.1.4 Diversity

The third and final dimension of the analytical framework is diversity. For this dissertation, diversity refers to the instructor's inclusion of multiple perspectives as well as an incorporation of contextual factors such as the consideration of social, political and economic influences. There is an emphasis on diversity and social justice, and an inclusion of many different opinions. In the interview, the faculty member stated, "But I'm bringing in questions and contexts they have because they're coming from different places and cultural perspectives and I'm trying to get them to look at the content – what's the cultural context of the organization you're working in." Another example of the inclusion of multiple perspectives in the course came as the instructor described non-Blackboard tools that he uses in the face-to-face meetings, You Tube. The instructor claimed that he uses You Tube clips in class and not as posts in Blackboard because he does not have permission to redistribute the media in that manner. The instructor articulates that:

> One of the cases we use talks about the total and absolute breakdown of healthcare in the hospital – students often take the side of, fire the son of a gun, he's incompetent, well the guy is a dual MD/Ph.D., if you know him he's probably the guy running the healthcare IT for the government – he's a guru genius, but not necessarily the best manager – here's a chance for him to come in and tell the background of the story, what happened and what led to the debacle. Those things I will use as short vignettes or five or six minutes as video to let someone come in and speak in their voice where I can't.

In terms of the integration of multiple perspectives in the course, there is again a distinction between face-to-face class meetings and the Blackboard component of the course. The instructor is consistent and clear in his division that "I don't use Blackboard for that [incorporation of multiple perspectives] that's not the Blackboard component."The instructor relays that:

> Blackboard, the context where I draw that [consideration of contextual factors such as social, political and economic factors] is more trying to keep instructions simple, cut down on wording by being very direct, trying not to write War and Peace when I can do it in two sentences. I'm trying to tailor the context to them. Classroom though really, I can go much broader about bringing context because I have students in backgrounds from many different places.

Although the instructor has made efforts to incorporate multiple perspectives in his course, he distinguishes between the face-to-face class meetings and the Blackboard course component where the great extent of this integration occurs face-to-face. After observing the Blackboard course shell for this section, there is little evidence of the inclusion of multiple perspectives.

5.2.2 Hybrid Graduate Female

The hybrid graduate female unit of analysis that was selected for this dissertation was Theories of Gender and Sexuality (WOMNST 2252). The course meetings took place every Thursday night from 6:00-8:30pm. The course description as found in the University of Pittsburgh course catalog is:

> This course will provide overview of important tendencies and controversies in gender and sexuality studies, emphasizing emerging directions in scholarship as well as foundational readings. Gender and sexuality studies are interdisciplinary fields in conversation with feminist theory and queer theory as well as a host of academic disciplines. Drawing on readings from a variety of disciplines (including anthropology, history, law, economics, philosophy, and literary studies) and sampling a range of methodologies, this course will work through some of the key movements and problems that have shaped and continue to shape contemporary thinking about gender and sexuality. Readings are likely to include works by Lila Abu-Lughod, Judith Butler, Nancy Chodorow, Patricia Hill Collins, R. W. Connell, Michel Foucault, Nancy Fraser, Linda Gordon, Judith Halberstam, Chandra Mohanty, Uma Narayan, and Joan Scott (University of Pittsburgh, 2011c)

When I asked her instructional goals for the course, the instructor responded, "so the goal of the class overall independently of blackboard, is to expose students to a range of thinking about gender and sexuality and to give them a feeling for what current, state of the art thinking is like, but to do that we're sometimes circling around to earlier work so that it's clear how the conversation got to where it is now." The instructor for the course is an Associate Professor in the English Department at the University of Pittsburgh. The term that the course was observed was the first time the course was offered at the University and the first time that the instructor taught the course. The number of students enrolled in this course during the term that I observed it was 17.

5.2.2.1 Blackboard Course Component Structure

In the hybrid graduate female course, I observed that the color scheme was purple and black with a design on the navigation tabs, which is an optional variation from the standard option. The navigation bar contained the following components: Announcements, Syllabus, Discussion Board, Faculty Information, Week 1-15, and Dropbox. Below this list of folders is the "toolbox" with communication, course tools and course map (Figure 5). Upon entering the syllabus file

folder, there are three items: a PDF file of the syllabus, and a University of Pittsburgh e-mail policy- the instructor states that this is the new university email policy that applies to this course.

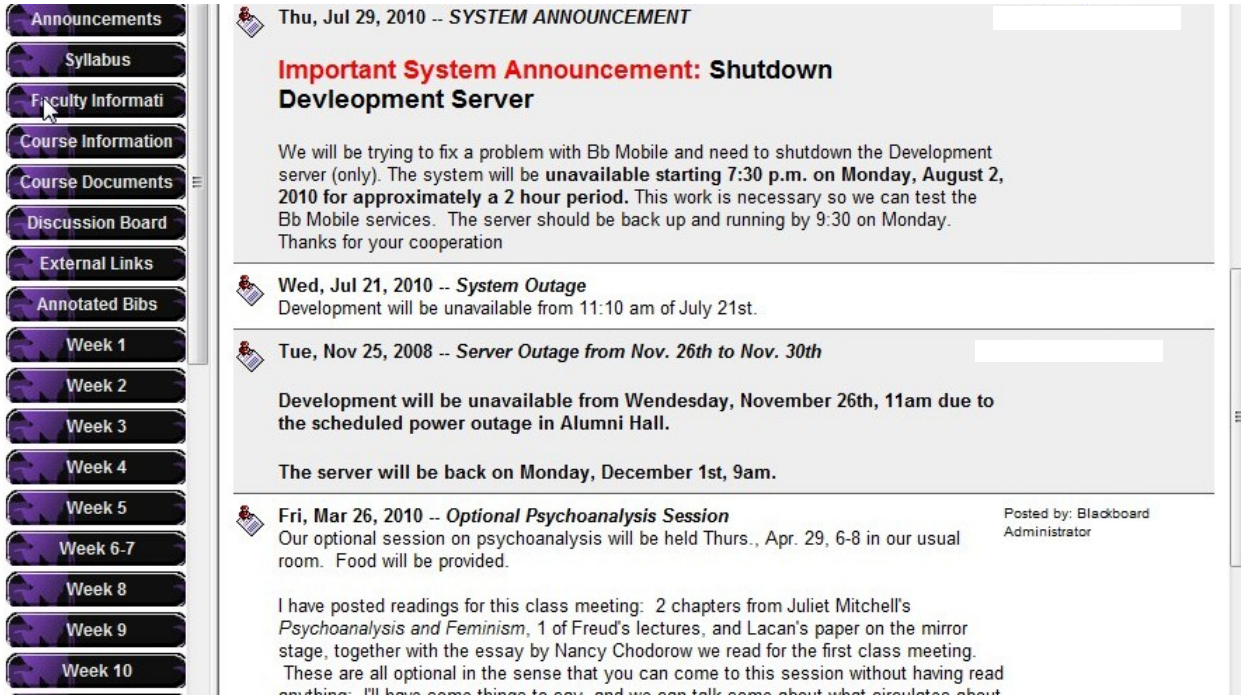


Figure 5. Screen Capture of Hybrid Graduate Female Course Navigation Bar.

In the weekly file folders, there are reading questions in a word document format for download, and course readings in PDF format for download directly from Blackboard (Figure 6).

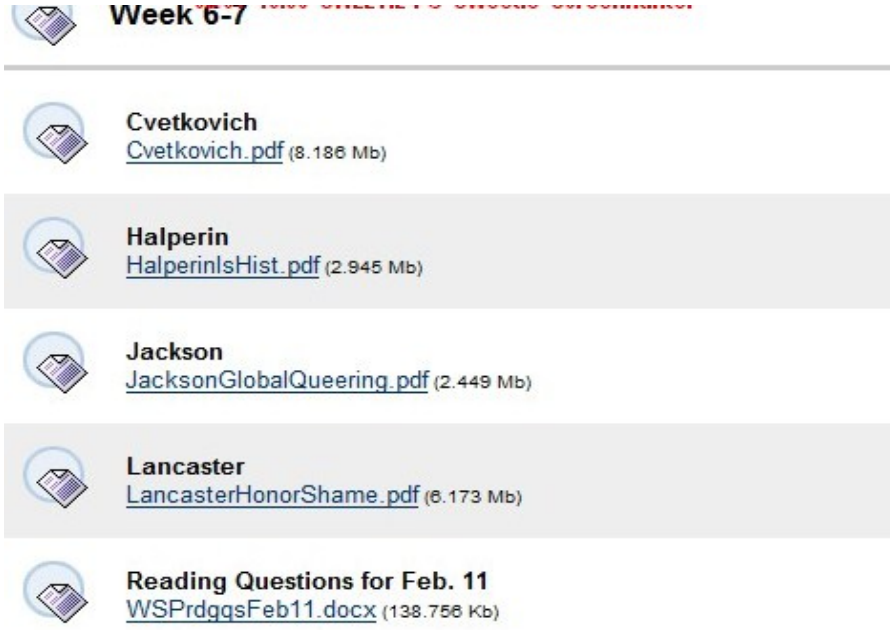


Figure 6. Screen capture of Hybrid Graduate Female Weekly Module

In the discussion board area of the course, several forums are listed; they are organized by week beginning with week 2 and continuing through week 15. The weeks are also designated by authors of course readings for that particular week. For example, the readings for week 2 include the author, Gayle Rubin and so therefore, the week is so named: (Week 2: Rubin, etc.). In terms of student participation in the discussion board, the course syllabus (under course requirements) states that:

> Completion of five reading responses (300-500 words each), to be posted on Blackboard by 5 noon on the day before a class meeting. A reading response need not be strongly polemical, but it should be sharply focused and provide a clear and specific position or vantage-point. It may frame and focus a large question or work through a short passage in the service of a significant train of thought or inquiry. You may determine the five class meetings for which you are preparing responses, but be sure not to leave them all to the end! If a response is not sufficiently substantive and careful, I will ask you to produce another to replace it

I asked the faculty member how she believes Blackboard supports her instructional goals, and she stated that "I guess I would just add that … in a way it's like having extra class time, because

there’s something that happens exactly like a discussion but has some qualities of a discussion outside class, especially because people posting later sometimes do refer back to earlier posts, and I can also begin the class by talking about relationships between some of the posts.”

5.2.2.2 Connection

The connection dimension of the analytical framework refers to evidence of dialogue between students and students and instructor as well as evidence of integration of personal experiences of students. In the interview, the instructor discusses how she is fosters the development of relationships between students as part of a community:

> I think the face to face discussion is really key, part of what they're getting to do is know each other as a little community, and blackboard does help with that because people might have different personas in class. I do think as a means to an end, it’s good and it isn’t that the class discussion is the sole end but it’s the place the development is more likely to proceed and when students get a sense something is satisfactory concluded.

The instructor of this course, unlike in the case of the hybrid graduate male highlights that Blackboard does support connection to the course and its content. She explains that Blackboard is like “having extra class time” and that discussion proceeds in a way that fosters student-student interaction. While the online course structure did include discussion boards, they functioned as a place for students to submit reading response assignments where all students in the class could read the posts of other students. Students did not talk directly to one another in the discussion boards of the course; they were merely a place to submit assignments in a public manner.

> So, in blackboard, in part, I get a chance to see how they're digesting the readings, what they're taking on board with no problem, where they're seeing problems, just how they're making sense of it. In some ways I'm using blackboard in the way I used to use one page papers I would have students turn in to me and I would distribute selectively to the class. This is better because everyone can see the post.

> I have not set it up so it's easy for students to dialogue with each other through blackboard, and although I would be interested in trying to understand that in the future, one of the signs of not being technologically experienced is that I was not sure how to set that up in a way that I would also know how to grade, this way I'm looking for a substantial summary with inquiry and I am sending them comments and grades.

Blackboard was used to support dialogue between students and the teacher in the sense that the instructor was able to see where students needed more face-to-face class time. The Blackboard discussions in the course were not set up such that the students could have an active dialogue with one another, but they were able to post their reading assignments in such a way that they were able to read how others in the class responded. As a result of student feedback for even more direct interaction and "free form discussion" with classmates in the Blackboard component of the course, the instructor added a course blog. The specifics of which are discussed in the following section on collaboration. She also used the e-mail function more heavily than the hybrid graduate male faculty member, e-mailing her students 24 times over the course of the term, whereas the male faculty member e-mailed only once.

The primary dialogue between students in the course occurred in the face-to-face class meetings the instructor reveals that "students participate a lot," and that the "course is a seminar and it's important for them, not only to speak but to help shape discussion." She also discusses later that "there's a fairly friendly trusting relationship" between students and students and the instructor. The instructor signs all correspondence to students on Blackboard with her first name.

5.2.2.3 Collaboration

The collaboration dimension of the analytical framework refers to the process of shared knowledge construction in the course such that students actively contribute to learning. This dimension emphasizes student participation. In terms of student-generated construction of

content at the level of selection of course readings for the hybrid graduate female course, the students do not engage in selection of articles or texts to read, student contribution to knowledge construction occurs at the level of discussion participation. The instructor states: “I don't usually build in a component for students to generate content in the readings; they are certainly generating content at the level of discussion.” In addition, collaboration occurred through the determination of where students needed or wanted to spend more time and the instructor adjusting accordingly: “I worked through the readings, not giving equal time to each reading but figuring out where there are things that students are actively interested in and trying to spend a little more time there.”

The course instructor later discusses how a typical class session goes and includes the manner that she incorporates the Blackboard discussion posts to shape course meetings according to where the students are with their readings and comprehension of topics. As she describes, the course begins with her announcements and is followed by a review of how the course meeting will proceed. She then invites students to place 3-7 questions on the board. She provides a short lecture, and references Blackboard postings by summarizing what was said around the course readings or topic. She references the discussion board again and mentions that as part of the feedback she received on the course, students might prefer the discussion component to be more interactive. In describing the use of Blackboard discussion in her course as collaborative, she states that:

> For each posting, I send them, I usually, every 2-3 weeks have a comment to send back so I might in the same email be giving them feedback about their presentation and responding to one or two of their postings, I might write a long paragraph depending on what I have to say, so I guess there is a kind of feedback they get from me specific to the postings, that also happens through blackboard but that would be really the closest thing to collaboration.

The instructor distributed and made available for download, by adding it to the course navigation menu, a midterm questionnaire asking students for their suggestions and input into structure of the course. The document is called "WSPcheckin.doc."The Questionnaire is:

> What features of the course are working well for you so far? Are there changes you'd like to see in the ways that class time is spent or the ways that discussion board postings are working? Other suggestions? Which do you prefer:
> _____ Let's be sure to make time to discuss every assigned reading each week.
> _____ It's OK not to discuss one of the readings sometimes if it gives us more time to pursue certain topics more thoroughly.
> Please fill out this form and bring it to class on Thursday, Feb. 25. I will ask a student to collect these so that they remain anonymous, and I'll make use of them in considering whether to make adjustments in the course. Thank you for your time."

The mid-term questionnaire included above reflects an invitation for students to provide feedback in terms of what is working and what may not be working in the course. After the mid-term questionnaire had been posted, there was evidence later of changes made to the course during the semester. In an email sent to the class on March 19, 2010, the instructor writes:

> Hi, everybody--
> Last night we discussed having a more free-form online discussion area, either by expanding the uses of the discussion board or activating the wiki tool. Exploring the tools today, I've decided the blog tool might work better than the wiki, and I've just opened it up. (It's got a button on the menu near the top.) all the best

A course blog was added with a tab on the navigation bar as of 3/19/10. Here is the instructor's introduction and purpose of the blog as observed in the Blackboard course component:

> Welcome to the course blog. This area is open for any commentary or reflection you would like to do. It doesn't have to be geared specifically to a given week's readings (an advantage over the discussion board, although it's always possible to circle back in discussion board postings), and it can pursue topics from class discussion as well. One of the things we discussed last night was the desirability

> of having more summary, 'what's the takeaway' kind of discussion. (Then we performed the difficulty of making it happen!) Although this blog is open for many possible uses, one function to consider (especially for those of you interested in coming away with a map or schema of readings and how they relate to each other--a project which requires coming up with a big picture takeaway for each reading) is that you might try out your 'here's my takeaway from X' here, either before or after a class meeting. Such a post might get tacit agreement or prompt instructive disagreement." (OC: It is signed with the first name of the instructor- omitted here to protect their identity).

The course blog and purpose as incited above indicates an effort to move to more interactive area within the Blackboard component of the course. As previously stated, the discussion board as used in the course was primarily for posting reading assignments rather than for dialogue between students and students and the instructor even though the postings were used to assess where students were with the readings and major concepts of the course.

Finally, in terms of collaboration, the instructor of this course also makes a distinction between the Blackboard course and face-to-face meetings similar to the instructor of the hybrid graduate male course as:

> I have a little trouble with the online classroom metaphor – it's not how I think of it, I think of it as an accessory to the classroom, I mean no disrespect to this media. I'm a fan of blackboard. The wiki tool and loved it but I don't really think of the classroom as online, I think of it as the literal space we're doing in person learning.

After our interview had concluded the faculty member of this course said the following to me in terms of technological collaboration:

> I'm sorry that this isn't the course where I used the wiki- I used a wiki assignment that I just adored and am planning to use again but a little more in undergraduate courses- for literature courses the wiki is wonderful for people doing collaborative commentary on texts and linking to things that would be the place where I've done slightly more adventurous forms of technological collaboration and really found it to be productive.

In this last quote, the instructor of the course discusses her uses of technological collaboration in the courses she has taught historically. Overall, integration of collaboration was observed and included in Blackboard as the use of a mid-term questionnaire, e-mails to students and addition of the course blog after receiving feedback on the course.

5.2.2.4 Diversity

The third dimension of the analytical framework refers to the inclusion of multiple perspectives, and diversity of opinion with emphasis on the consideration of social, political, and economic factors. In this course, the instructor's stated goals for the course, "to introduce students to a range of thinking about gender and sexuality," speaks to the inclusion of a diversity of opinions. She later talks about how the course topic includes not only issues of gender and sexuality "but a lot about class and privilege- where you are located in the world." In terms of the online component of the course in Blackboard, she mentions only that perhaps that is the manner in which students write in the discussion board, but that she does not think of the face to face class meetings and the online component in Blackboard as separate. She talks about how "content is reinforced in discussion" and that contextual factors are considered in discussion in the course.

In the hybrid graduate female course, the instructor speaks to the readings as the means in which she incorporates multiple perspectives as: **"**In part because the readings are written from multiple perspectives, there is already a zone in which students will move among these perspectives in the readings, I presumed that the subject matter would generate a range of opinions and that's been the case" She also talks about how the mid-term questionnaires have

helped along this dimension in her role in summarizing the multiple perspectives around a given course topic:

> In part, I tried to do some integration at the level of even how you can map the relationship between the positions, it takes a little work to see what level of difference it is. I've been a little poor at the extent of summary, I was really pleased the mid-terms were inviting me to do more of this. Because the very fact that people have very strong personal stakes in their opinions has made me weary about whose opinions would be challenged… I feel the questionnaires gave me a sense, there's a fairly friendly trusting relationship and that people will not take it personally if I have them pinned down

Overall, diversity in terms of the inclusion of multiple perspectives and consideration of contextual factors is incorporated as content of the course and reinforced in discussion both in the classroom and on Blackboard. In the final part of our interview, the faculty member shared with me a distinction between graduate and undergraduate courses as: "the thing about a graduate course, there is a way in which everybody in graduate school is already academically successful. So I guess I feel as though some of the factors especially as they affect students' willingness to participate or their comfort with certain kinds of discussion are much more sensitive in undergraduate courses than graduate courses."

5.2.3 Within-Case Analysis: Hybrid Graduate

In regard to analysis within the hybrid graduate case, both instructors are associate professors at the University of Pittsburgh, one affiliated with the Business School, the other with the English Department. Both are teaching their respective courses for the first time in this semester. There were undoubtedly similarities and differences along each dimension in each instructor's use of

instructional technology, which in this dissertation is the use of Blackboard in their respective courses. Each will be discussed below.

The hybrid graduate male case revealed along each dimension of the analytical framework a distinction between in-class and Blackboard course instructional presentation. The instructor encouraged integration of student experience, student contribution to the learning process, and incorporation of multiple perspectives in the classroom, showing no evidence of the same strategies in the Blackboard course shell. The instructor distinguishes between each and talks about Blackboard as "mechanics, a vehicle" for collecting and distributing assignments and other course materials such as lectures. The instructor further discusses reasons for not using collaborative technological features as part of his class:

> I don't use a lot of the really advanced features that might be in there. I have tried Wikis and some of the advanced collaborative features and my students really haven't bought into that because they're tied to the course web system and they've used other things like sending files by email – or sending in Google docs and so there's other things they were already familiar with and they didn't want to pay the learning curve to get into how does blackboard share documents.

Comparatively, the hybrid graduate female faculty member described Blackboard as "extra class time" and described ways that she uses Blackboard to support community as well as collaboration in the classroom. Course observations supported this distinction in the definition of how Blackboard is used in their courses as the hybrid graduate male course did not have a discussion board, but rather included class handouts and lectures while the hybrid graduate female course included discussion board, student feedback questionnaire and course blog. In addition, there was a difference in their use of e-mail messages to communicate with students where the hybrid graduate male faculty member e-mailed his students only once while the hybrid graduate female faculty member e-mailed her students 24 times over the course of the semester.

While similarities were uncovered in the hybrid graduate female case, that of a distinction between in-class meetings and Blackboard course shell, several differences abounded. Key differences between the two faculty are that the male instructor did not use the discussion board, while the female instructor did. Although she did not use the discussion board in a way that encouraged direct conversation between students, she was able to use it such that students were able to read the responses of their classmates to enrich face-to-face discussion around course readings. Another key difference noted was that the female instructor asked for feedback in the form of a mid-term questionnaire that was uploaded to the Blackboard site. To some extent, the male instructor asked for feedback on the use of certain applications within Blackboard but not in a structured way such that students would be inclined to respond in a formal way. Finally, the female case incorporated, later in the term, a course blog that was proposed to encourage more direct interaction between students and between students and course content.

5.3 HYBRID UNDERGRADUATE CASE

The second case included two hybrid undergraduate courses, one taught by a male faculty member (HIST 789: Women and Men in the Ancient Mediterranean), and one taught by a female faculty member (PSY 1025: Test and Measurement). The context of the second case study is a hybrid presentation that for this dissertation is the inclusion of part of the instructional program online in a Blackboard course component in addition to traditional course meetings that took place face-to-face. The case is undergraduate-level courses. At the University of Pittsburgh, undergraduate courses are identified numerically in the following range: 0001-0999 (lower level undergraduate) and 1000-1999 (upper level undergraduate), which in this case were 789 and

1025. The embedded units of analysis were one male and one female faculty member. In the following two sections each will be thoroughly discussed beginning with a description of the Blackboard structure for each course. The case analyses proceeds with a presentation of data through the three dimensions of the analytical framework designed for this study: *connection, collaboration and diversity*.

5.3.1 Hybrid Undergraduate Male

The hybrid undergraduate male unit of analysis that was selected for this dissertation was Women and Men in the Ancient Mediterranean (HIST 789). The course description for the course is: "Writing Practicum for Students taking HIST 0788 as a writing course." The description of this course was accessed in the University of Pittsburgh PeopleSoft system. The faculty member of the course is a full professor in the University Of Pittsburgh in the Department Of Classics. He is one of three full professors that participated in this study.

When asked his instructional goals for the course, the instructor stated that:

> Mastery of – talking about the courses for which I use blackboard which are two in number, these are both lecture courses, a large number of students, 150 or more, another not so large, about 50, and in both these courses, mastery of the subject matter, the acquisition of analytical skills appropriate in that subject matter, demonstration of ability to respond successfully about my exams which consist of short answer questions and an essay, so the case of the smaller course which has a practicum writing component – achievement of appropriate skills and research. That's it.

The number of students enrolled in the course was 13.

5.3.1.1 Blackboard Course Component Structure

The Blackboard component for the hybrid undergraduate male course was minimally used (Figure 7). The only content in the course shell was a syllabus found in the syllabus file folder that consisted of faculty information (including name and department), writing practicum guidelines and schedule. There were four tabs on the left hand side of the main page: Announcements, Syllabus, Faculty Information, and Course Documents. There were no announcements in the course and no content in the faculty information file folder or the course documents file folder. The discussion board was not used as there was no discussion threads set up by the instructor. The course structure observed was consistent with the faculty member's goals for the use of the site as part of his course as he conveys:

> I wish I could say more because I know there's a lot of potential there that I'm not even scratching the surface on, but primarily I use blackboard as a repository resource for the hard copy handouts distributed to students in class…such that those handouts can be accessed from a remote location and as backup so I don't have to keep carrying the whole set of back ups with me to every class because students can be rather lazy or irresponsible or for perfectly good reasons – they find themselves without support – so I just use blackboard. So I just say go to the Bbd site.

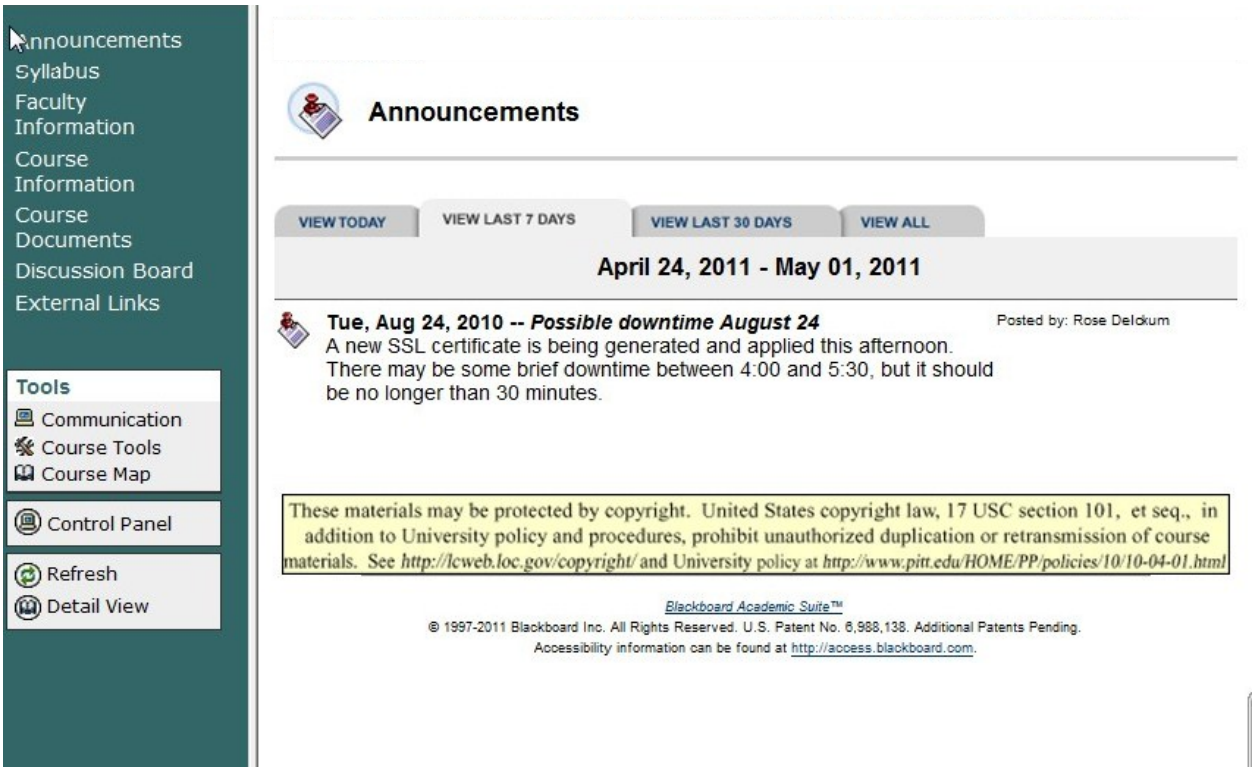


Figure 7. Hybrid Undergraduate Male Course Navigation Bar

5.3.1.2 Connection

The connection dimension of the analytical framework refers to evidence of dialogue between students and students and instructor as well as evidence of integration of personal experiences of students in course structure and content. The instructor of this course was very clear in terms of his use of dialogue with students in the classroom. He does not encourage nor foster relationships or the integration of personal experience with academic inquiry in his courses. He explains:

> Student experiences –doesn't have an online application. So, the students experiences – when a student speaks out in class, and here again I've learned over the years not to encourage – least of all require students to talk about their personal experiences because it can lead to an unpleasant situation which can be unnecessary, when you talk about 2,500 years ago, we don't have to get into our personal lives but I don't stifle them. I don't think students are inclined to do that anymore – like 60s touchy feely but now students just sit there like bumps on a log. It's very hard – not because they're shy or nervous or afraid of what others

> think, they’re just not part of their being anymore, is it computers- and all those screens they’ve grown up looking at?

He addresses here not only the notion that he does not include students in discussion in class and online but also adds that he believes students to be disconnected perhaps as a result of the technology. He later explains that “it’s easy to offend students,” and that “you are really vulnerable if you are no longer on subject.” He later states that he is a “dull professor,” and “I think I should stick to that.”

The course observations and course syllabus both support this observation. There is little effort to connect with students in terms of assignments, although the syllabus does include the revision of drafts for final construction of the paper. The Blackboard course shell was as mentioned, minimally used with only the course syllabus uploaded under the syllabus file folder.

5.3.1.3 Collaboration

The collaboration dimension of the analytical framework refers to the process of shared knowledge construction in the course such that students actively contribute to learning. This dimension emphasizes student participation. As previously addressed, the instructor of this course does no subscribe to a participatory classroom. Similar to the connection dimension, for collaboration, the instructor openly states that he does not include students in the construction of course content. He states “I’m aware of these subcultures within my classes, but I don’t tailor my presentation to them, including the use of Blackboard.” When asked how the instructor supports student-student interaction, student-content interaction and student- instructor interaction, the course instructor relays that:

> very little of that … because for so many years I've been posing good questions, getting no response and answering the question myself – I think too much of this

> undermines the whole enterprise, to have too many failed attempts in front of the group –I don't like to do that so I can give up on this – instead I try to be provocative and hope to get a rise out of someone and so a student voluntarily speaks up which occasionally does happen. So, that's a far better approach that asking a question and getting vast silence. The big challenge for someone my age is to get on the same wave length with the students.

When asked about student involvement in the construction of course content, the instructor states: "I don't include them, but I'm not opposed to taking hints and noting student interest." He notes on several occasions that he cannot relate to students perhaps on the account of the fact that he is older than them. In regard to student involvement in the construction of course content he shares that "Perhaps it would be better if the university hired younger faculty – I think I stand a chance of looking ridiculous and insulting the students by patronizing them." He later adds that "they don't like people in their parents or grandparents generation thinking they're members of their group. I know my own grandchildren have a very condescending attitude toward me."

5.3.1.4 Diversity

The third and final dimension of the analytical framework refers to the inclusion of multiple perspectives and a diversity of opinion with emphasis on the consideration of social, political, and economic factors. When asked about how he incorporates multiple perspectives in the online classroom and ways in which he supports integration of various opinions in his course, the instructor states that he is "big on that." He later supports his answer with an explanation of including movies and film to speak on various topics that he may not necessarily be an expert on as well as the careful selection of a textbook. It becomes clear that the manner in which he addresses the integration of multiple perspectives is strictly for the face-to-face course meetings and does not include the use of Blackboard. He states: "I line up these movies for the history

class where nationally known experts are featured commentators that's a very important way – then careful selection of textbook that has a very broad disciplinary range that is more than any one person can have."

He addresses the questions of the incorporation of diversity in his classroom structure with disciplinary breadth and discussion of experts in various fields within the Classics. He later states that:

> I'm in favor of all of them but don't come to me at this point in my career when I have done so much in my career and ask me to work in another field, I won't do it – there have to be other ways, the concept of this department is already in place – with experts in adjacent fields cooperating under a signal academic group – the resources are always there but don't take on a single faculty victim – asking them to do it all because that's not right.

Overall, his integration of multiple perspectives and consideration of social, political and economic factors occurs in the face-to-face class meetings and not on Blackboard as the selection of textbook and inclusion of video clips in areas of Classics that he is not as well versed in as other areas. He further describes the broad disciplinary breadth in the field.

5.3.2 Hybrid Undergraduate Female

The hybrid undergraduate female unit of analysis that was selected for this dissertation was Tests and Measurement (PSYCH 1025). The course met on Tuesdays and Thursdays from 10-11:00am. The course description included in the course syllabus written by the instructor was:

> This upper level course discusses the interpretation of standard psychological tests and the development of new scales for measuring personality, attitudes, or abilities. Topics to be covered include scale reliability and validity, and methods of assessment. We will briefly discuss the assessment of intelligence, and testing in business and educational settings. The course will provide practical experience in test construction and assessing the characteristics of that test.

The instructor of this course was scheduled for a phone interview, as were all the other participants. When called at the scheduled time, the instructor decided she did not want to answer the questions. The questions were e-mailed to her and she replied with her responses. Those responses are conveyed as part of the analysis below. The number of students enrolled in this course during the term that I observed it was 17. The instructor of this course is a full professor in the Department of Psychology at the University of Pittsburgh. When asked her instructional goals, the instructor replied:

> Understand the history of psychological testing and how testing is now done in the U.S., Understand how to develop a valid and reliable scale, as well as to understand the major methods for evaluating scales, Develop practical experience in test construction and assessment through working in groups to develop their own scale, Understand standardized tests and be able to administer and interpret them.

5.3.2.1 Blackboard Course Component Structure

In the hybrid undergraduate female blackboard course structure, the navigation bar contained: Announcements, Syllabus, Staff Information and Course Documents and employed the standard format for design and color (Figure 8). There were no announcements and the discussion board was not used. In the Syllabus file folder, the class syllabus is provided as a word file. It is the first option as you open this folder- available for download. Under the syllabus word file, under the heading “course policies,” there is an Academic Integrity Policy listed followed by a disabilities policy. The two policies as written appear to be part of the University of Pittsburgh Blackboard template and are already written and provided for faculty to use in the Blackboard component of their course. There was no content in the Staff Information file folder.

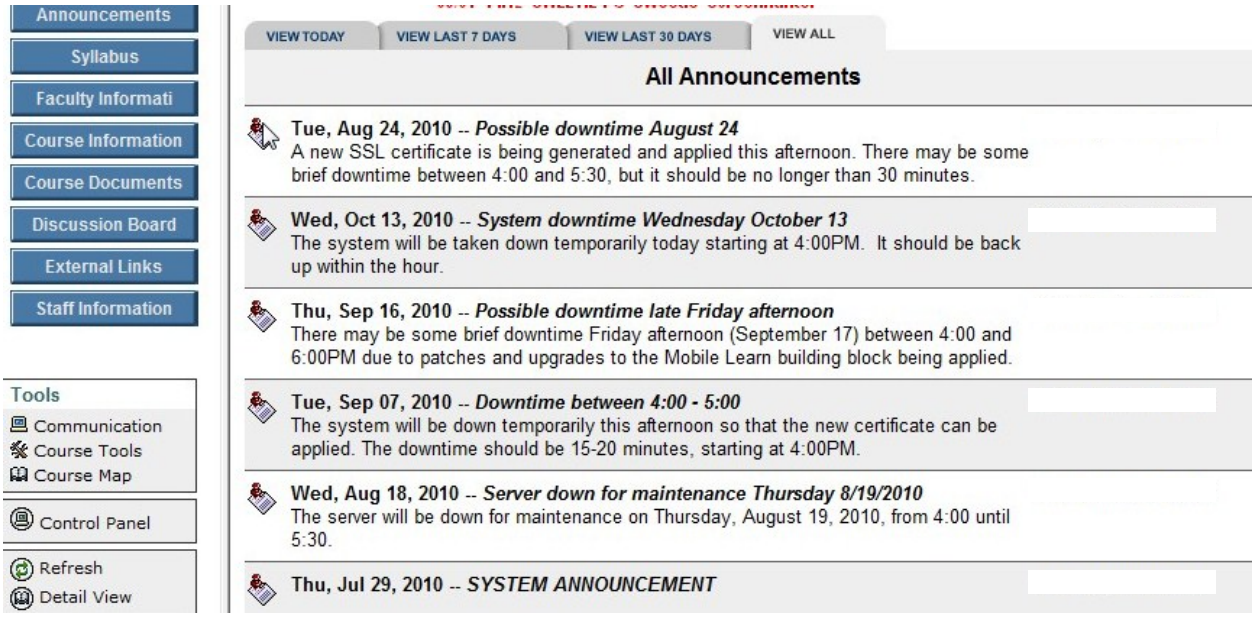


Figure 8. Screen Capture of Hybrid Undergraduate Female Navigation Bar

The course documents area of the course is the most populated area that I observed (Figure 9). In this file folder, there are more folders labeled: Lecture Notes, Class Handouts, Old Exams, and Writing Tips (which is not a separate file but rather contains the tips written in view under the heading). Within the Lecture Notes folder in the Course Documents area of the course, there are two word files, Introduction to Testing and History and Ethics of Testing. In the Introduction to Testing document, there is an outline, an "overview of testing." The outline begins with a definition of a test, types of test, how tests are evaluated, and finally, roles in the testing process. In the Class handouts file folder, there are several word files, labeled: Study Questions for First Exam, Project Manager Role, Theorist Role, Reliability and Validity Assessor Role, and Sampling and Data Collection Role.

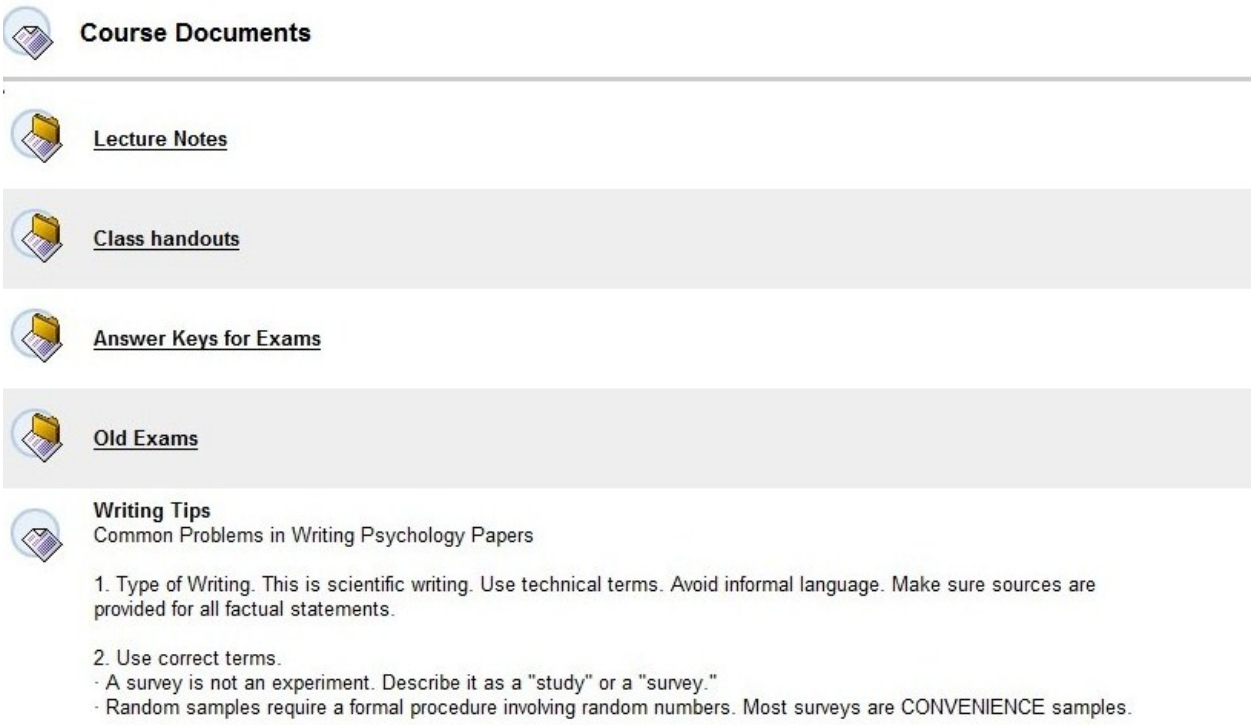


Figure 9. Screen Capture of Hybrid Undergraduate Female Course Documents Area

In the “Old Exams” file folder, there are two items, one is the First Exam attached as a word file and the second item is “Student submitted sample questions. First exam”- that is also a word file. The first exam word file contains 40 multiple choice questions with answer choices and correct responses indicated with an asterisk. Also in the file there were extra credit multiple choice questions for the first exam. There were 13 such questions that include a reference of where to find the correct answer, be it a lecture (with date included) or a page in the textbook.

In the Writing Tips section, which as previously noted is not a separate file folder, but rather is text written into the Blackboard page. The section includes “common problems in writing psychology papers,” the tips are numbered and include 1) type of writing- instructing students to use “scientific language” and avoid use of “informal terms”, 2) use correct terms- describe surveys as “studies” or “surveys” not experiments, 3) General Writing- avoid quotations

as much as possible and include citations where appropriate, 4) use of APA citation style, a brief summary of how to use style properly.

No communication aspects of Blackboard were used in this course. Four class e-mails were sent during the semester that were in regard to exams and group assignment. When asked about how Blackboard supports her instructional goals, the instructor states: “Blackboard provides a convenient place for me to make notes and previous tests available to students. I also post copies of all handouts on Blackboard.” This comment was consistent with the course observations of the online component of this course.

5.3.2.2 Connection

The connection dimension of the analytical framework refers to evidence of dialogue between students and students and instructor as well as evidence of integration of personal experiences of students in course structure and content. Again, the Blackboard component of the course can be thought of as a repository of course materials, a separate entity from the face-to-face class meetings, as was the case in the previous courses discussed. The instructor did write to me that “during class discussion, I encourage questions and comments,” that suggests that the face-to-face class meetings may incorporate dialogue between students and students with the instructor.

In terms of the use of technology to connect with students, the instructor comments on the use of e-mail: “I frequently use e-mail to communicate with individual students and to remind the class of upcoming deadlines.” She also comments on face-to-face meetings as part of regular class meetings and individual meeting: “We meet twice a week in a regular class setting. Students are invited to come to discuss issues with me in my office.”

The encouragement of relationships between students was integrated into the course as a group assignment. The course syllabus, that was uploaded as a Microsoft Word file in Blackboard, included a description of the group project that was titled "development of a scale." The project was worth 200 out of a possible 1000 points for the term. The description found in the course syllabus was as follows:

> Each group will be responsible for developing a scale of 10 to 20 items for measuring some personality concept or some type of attitude or for evaluating some type of knowledge or ability…. There are a number of tasks to be done in scale development. Each member of the group should select one of these tasks. The tasks include: Project Manager, Theorist, Reliability and Validity Assessor, Sampling and Data Collection Manager

The description of the group project continues in the syllabus document for the course with descriptions of roles for members of the group. The "tasks" are project manager, theories, reliability and validity assessor and sampling and data collection manager. Following the description of each task, there is a section entitled, "due dates and assignments," that further describes the group project with deadlines for various parts of the assignment under each role as listed above.

5.3.2.3 Collaboration

The collaboration dimension of the analytical framework refers to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement of students with the teacher. When asked what she believes about student involvement in the construction of course content and further, whether she includes students in the construction of

course content, the instructor commented: “Students are not involved in the construction of course content.” In addition, when asked to what extend she incorporates student experiences into her online teaching, she briefly states “not applicable.”

Although the instructor conveyed that she does not collaborate with students in the manner described for this study, there was evidence to support collaborative efforts in analysis of the course syllabus and Blackboard observations. The instructor offers much in the way of support on Blackboard for students to prepare examinations in the course. There was evidence of collaboration with the instructor in the sense that students were invited to construct their own questions as part of the test. The following was found as a course observation in Blackboard:

> The first exam will be in class on February 16. It is worth a total of 250 points. There will be 40 multiple choice questions on the exam worth 200 points. Some sample multiple choice questions have been posted on Course Info to help you study for this part of the exam. There will also be two essays on the exam, each worth 25 points, for a total of 50 points. I will select one of the first 6 essay questions below for one of the essays. The other will be #7, writing your own question.

The question that students will write was further explained and guided by the following comment by the instructor: “Write your own question about material covered so far in lecture and/or the assigned readings in the textbook. Answer your question. Your question should involve something that can be simply memorized and something that requires some creative thinking on your part.”

Students do have the option of taking advantage of an extra credit option that would add up to 50 points to their overall semester grade. The instructor notes that this could raise the student grade by as much as a ½ letter grade. In the course syllabus, under the heading “extra credit,” the following is written:

> Writing multiple choice questions. For each exam, new multiple choice questions can be written for extra credit. Up to three questions can be submitted. Questions are worth up to 4 points each. They must each have five possible [and plausible answers], with one correct answer. The correct answer should be identified, along with the page number in the text or the date of the lecture where the question and answer come from. They must come from assigned materials for that exam. If one [or more] of the questions is used on the exam, there will be an additional bonus of 5 points. Questions are due 2/11 & 4/22.

In addition to writing multiple choice questions for exams, evidence of knowledge construction in a participatory manner was the second extra credit assignment provided for the course and described in the course syllabus:

> Analyzing a published scale. Find an example of a scale published in the social science literature that measures something different than the scale being developed by your group. How is the concept defined? What data were collected in the scale development? How was reliability assessed? How was validity assessed? What sample and procedures were used for data collection? Is normative information provided? Discuss each of these points, commenting on whether or not you feel the scale developers did a good job or not. Include the article in which the scale is discussed along with your paper. Be sure to cite material from the course in your discussion. This paper is worth up to 50 points and is due April 20."

Both extra credit assignments do indicate a democratic construction of knowledge as students are both invited to write questions for an exam and analyze a scale incorporating their own thoughts as part of the analysis. Also, she wrote an e-mail inviting feedback from students in regard to meetings in preparation of the group project. In the email, dated February 5, 2010, the instructor writes:

> Remember that each group needs to develop a unidimensional scale. This means that we expect people to answer consistently, either agreeing with all items on the scale, or disagreeing with the reversed items. Please review your specific assignment on the forms I handed out several classes ago. I will meet with the Theorists to go over their assignments at the end of class on Tuesday. Should we have a similar meeting for the Reliability and Validity people at the end of class on Thursday. We could do the same thing for the Data people on Feb 18? Remember, all reports [except Project Managers] are due no later than Feb 25.

Overall, some evidence did exist to suggest that the faculty instructor of the course invited student participation in the construction of knowledge as part of the course despite comments in the interview that stated that she did not incorporate student feedback in a collaborative way. There was also evidence of student support in the course in the Blackboard course component as the inclusion of old examinations. She also invited student feedback for a meeting to take place to support students for work on their group project.

5.3.2.4 Diversity

The third and final dimension of the analytical framework refers to the inclusion of multiple perspectives and a diversity of opinion with emphasis on the consideration of social, political, and economic factors. When asked how the instructor incorporates multiple perspectives in the online classroom and to what extent she supports integration of diversity in course content, the instructor replied “during class discussion, I encourage questions and comments.” This comment again refers to a clear difference between the online course component as Blackboard and the face-to-face class meetings. As previously stated, this course did not use the discussion board option in Blackboard so there was no evidence of an emphasis on diversity within Blackboard.

Further, when asked “to what extent do contextual factors (consideration of social, political, and economic factor) influence learning in your online classroom?” She commented, “We discuss issues of bias in testing and how these have been addressed at different historical periods,” that suggests that the inclusion of contextual factors was integrated as content in the course.

5.3.3 Within-Case Analysis: Hybrid Undergraduate

Both faculty instructors are full professors at the University of Pittsburgh, one a member of the Classics department (male), the other a member of the Psychology Department (female). Both instructors used the Blackboard component of their course similarly in the sense that they described its function as a “repository resource” and “convenient place” for the provision of course materials to students. In the hybrid undergraduate female course, the Blackboard site was more heavily used in the sense that much more was observed on the site in the course documents file folder.

On the Blackboard site for the hybrid undergraduate female course, the faculty instructor provided lecture notes, class handouts, answer keys for exams, old exams and writing tips. There was also evidence in the syllabus and course observation of the Blackboard component of the hybrid undergraduate female course, of the encouragement of student participation in knowledge construction and contribution to the learning process through the exercise of students writing examination questions and a group project. The discussion board was not used in either course and for each; there was no evidence of dialogue between students and students and the instructor within Blackboard. Each faculty member e-mailed their students exactly four times during the semester.

5.4 ONLINE GRADUATE CASE

The third case selected for this dissertation included two online graduate courses, one taught by a male faculty member (LIS 2186: Information Policy Analysis and Design), and one taught by a

female faculty member (NURSP 2290: Healthcare Outcomes). The context of the third case study is an online presentation that for this dissertation is defined as the delivery of the principal instructional program via a web-based platform, specifically the Blackboard CMS. The case is graduate-level courses. At the University of Pittsburgh, graduate courses are identified numerically in the following range: 2000-3999, which in this case were 2186 and 2290. The embedded units of analysis were one male and one female faculty member. In the following two sections each will be thoroughly discussed and case analysis presented along the three dimensions of the analytical framework designed for this study: *connection, collaboration and diversity*.

5.4.1 Online Graduate Male

The online graduate male unit of analysis that I selected for this dissertation is Information Policy Analysis and Design (LIS 2186). The faculty member of the course is a full professor in the University of Pittsburgh Department of Information Sciences. He is one of three full professors that participated in this study.

A course description of LIS 2186 was found in the instructor's syllabus for the course as:

> This course introduces students to the conceptual, institutional, and practical foundations of information policy analysis and design. A good deal of our time will be spent exploring the regulatory histories, paradigms, processes, and actors shaping the ongoing development of the information field. Topically, the course provides a comprehensive grounding in telecommunications policy; competition and antitrust; concentration, diversity and expression; intellectual property; standards and innovation; peer production and user innovation; information privacy; digital governance; and transnational information policy. The course also emphasizes the development of core information policy skills, introducing students to relevant analytic contributions from the fields of economics, communication, law, and public policy.

When asked his instructional goals for the course, the instructor stated that: “My specific goal with online students is to try to make the experience for them as rich as an on campus experience can be.” The number of students enrolled in this course during the term that I observed it was 22 students, the same number of students enrolled in the hybrid graduate male course (22 was the highest enrollment in this study).

5.4.1.1 Blackboard Course Component

The navigation bar consisted of the following: Announcements, Syllabus, Faculty Information, Course Information, Course texts, Discussion Board, Groups, and Weeks 01-14 (as separate tabs) followed by the tool menu composed of the communication, course tools, and course map (Figure 10). This is followed by Refresh and Detail view (common to all Blackboard generated courses). The course content is organized in file folders by week. The navigation buttons are gold, which is a variation from the standard style. Content appears on the right hand side with white background and black font.

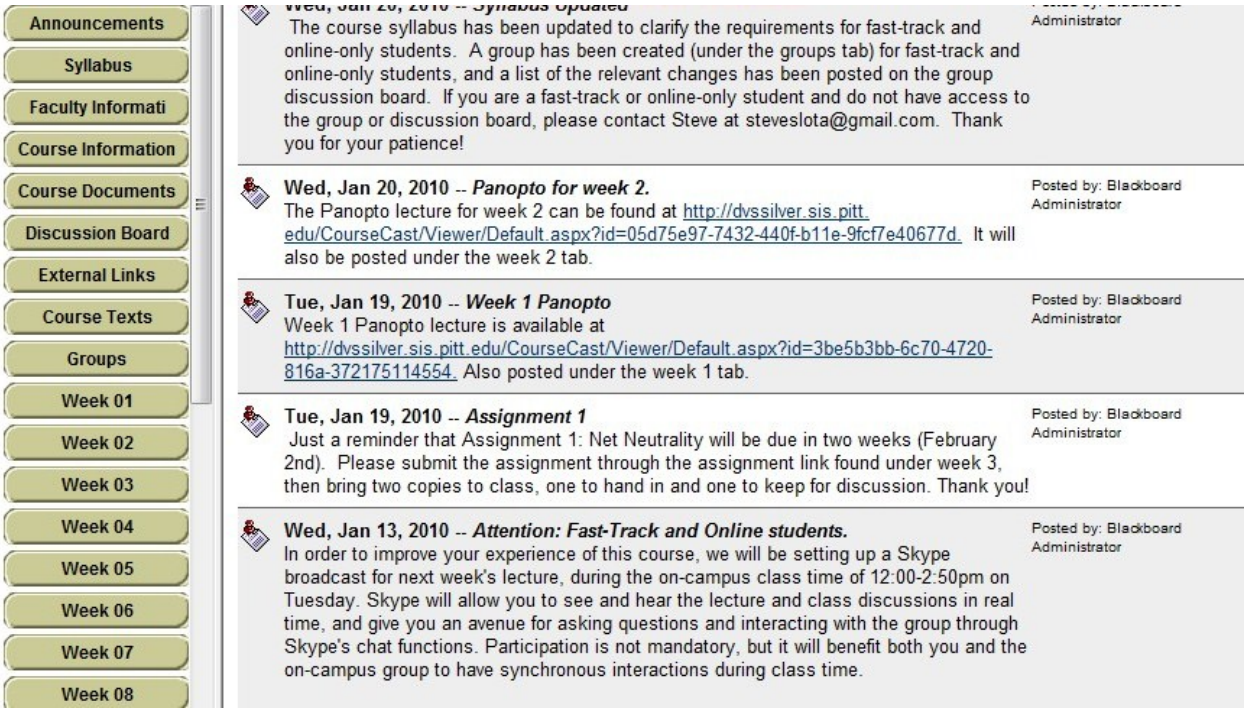


Figure 10. Screen Capture of Online Graduate Male Navigation Bar

The announcements function is heavily used in the course. In the syllabus file folder, the syllabus for the course is uploaded as a Microsoft Word document. No syllabus template components were used. In the faculty information section, the faculty member has provided both general contact information (e-mail address, phone number, and office location) and more specific, detailed information including background (education) and current areas of research interest and scholarly activity. This section is extensive with the inclusion of titles of texts he has published. The faculty member also includes a picture where he is smiling, but his arms are crossed. The course information section provides an overview of the course, the first part of the overview is described in the course description included above. The second section of the overview describes the three primary groups to which content of the course is geared, they include students preparing for information policy careers, current information policy professionals and students interested in research in the field. The course texts tab includes a list

of recommended readings for the course and citations are provided. A note at the bottom of the screen states that readings are also available in PDF.

The discussion board section of the course includes 15 discussion forums with the following headings: Introductions, Course Q&A, Information Policy FYIs, Weekly Terms and Questions Sign-Up, Weekly Terms and Questions, Final Presentation Dates, Country Briefing Papers, Assignment 1, Assignment 2, Assignment 4, Discussion Questions from February 23rd, Discussion Questions from February 16th, Discussion Questions from January 19th,Country Briefing Papers Sign-UP and Weekly Terms and Questions Sign-Up. In the Groups section, there is a link to Fast-Track/Online Students group pages. The description is: "this group should contain all Fast-Track/online only students. The faculty member used the Blackboard course site for courses that he met with face-to-face in addition to the course which was administered strictly online, therefore explaining the separate group pages.

In the weekly module folders, there are typically PowerPoint lectures, reading lists with citations, and assignments where appropriate (Figure 11). The required readings are also provided in PDF form, and students have the option of clicking on those to access the reading assignment. A unique feature in this course is the use of Panopto that is seen as the last area in the screen capture in Figure 11. A Panopto is defined as a "presentation capture platform that lets users capture, edit, stream, archive and share recordings that preserve critical knowledge" (Panopto, 2011).

The instructor of the course discusses in the interview the manner that the Blackboard CMS does not support his instructional goals. He comments early that: "Blackboard itself is fairly clunky, certainly not intuitive, so I had a big learning curve picking up Course Web." He also refers to the disconnect he feels in getting to know the students as a result of the online

course platform: “It doesn’t help me much in getting context for the students, don't have pictures or a sense of who they are.” During the discussion, I further asked him about the experiences he has had with this type of software and encouraged dialogue on his apparent discontent with the system. He added: “The system we have right now doesn’t allow that control which I think is ideal, because we’re dependent on the underlying infrastructure before we can substantiate any changes.” He commented on his desire to have more input into the design of the system.

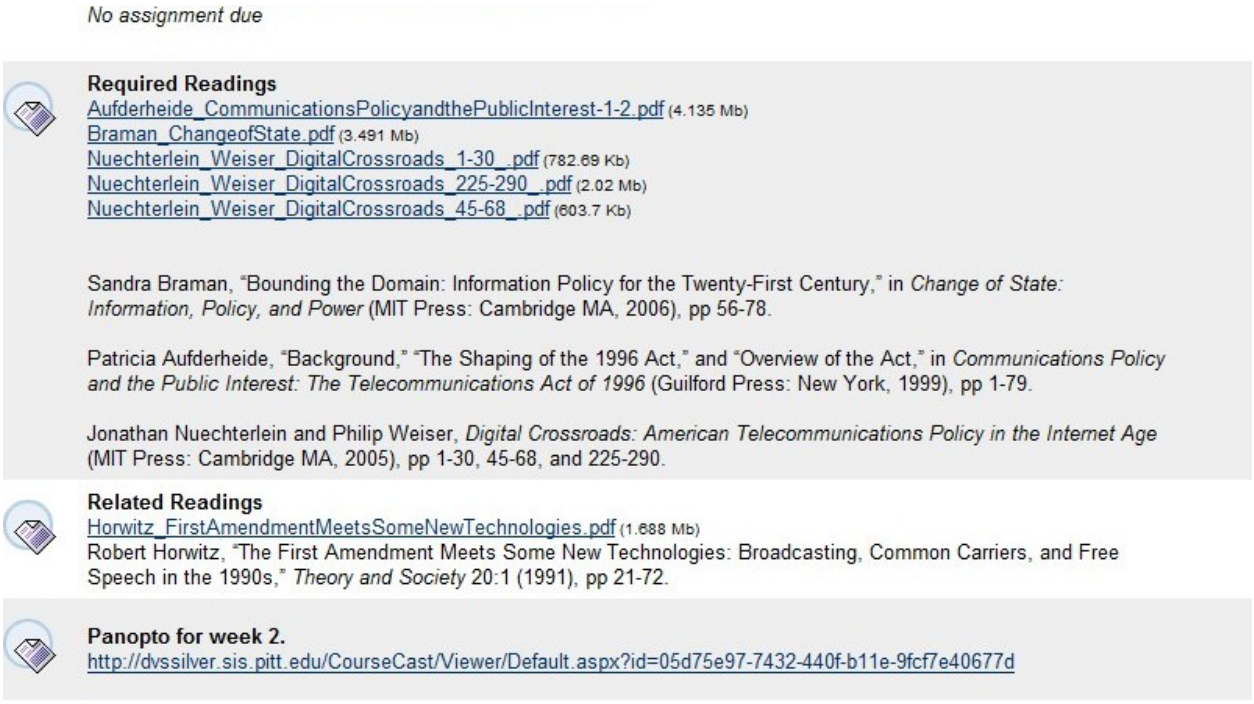


Figure 11. Screen Capture of Online Graduate Male Course Module

5.4.1.2 Connection

The connection dimension of the analytical framework refers to evidence of dialogue between students and students and instructor as well as evidence of integration of personal experiences of students in course structure and content. Most information that was posted on the Blackboard component of this course was uploaded by the teaching assistant for the course, so it was the

teaching assistant's name that appears rather than the instructors' when new material is authored and displayed. The role of the teaching assistant in the management of the Blackboard site of the course would arguably create another layer of distance between students and instructor.

The instructor of the course did comment on the importance of participation and discussion in the class, speaking to dialogue between students as: "I try to get as much discussion through class as possible. Students should take the discussion topics and post to the discussion board within the system their own reactions to the discussions put together." In addition, students are encouraged to work together in groups as part of the completion of assignments in the course. The instructor states in the interview that he is responsive but that he feels that he is more so in the face-to-face class than online, so will work to improve that in the next semester that the course is offered. The instructor states:

> Student to student (interaction) is basically forming working groups in presentations. Student content [interaction] is I try to be as responsive as I can with content, I get more of that from on campus than online students but that's a fault of my design of the class and I'm seeking to address that in my next iteration of it. Student-instructor [interaction], I've encouraged all students to use regular email with me.

The encouragement of interaction in the course in the form of dialogue in Blackboard was observed in many places in the course structure. In an announcement dated 2/19/10, "Attention: Fast-Track and Online Students, Just a point of order: when a discussion question is given to the on-campus students, please post a short response to that question on the forum created for that week, and make an effort to read and respond to others. Thank you!" There is an effort to encourage students to read and respond to the posts of their classmates. Another example of connection between students in the course was found in the introductions forum. While all students included the necessary items in the introductions forum that was asked of them, several students included more information such as favorite movies and what they did over

the break. A few students even commented directly on other students' introductions. For example, "You live in New Wilmington? I grew up there and my entire family still lives in the area. How do you like it?"

Another example of student-student connection in the course was observed in the discussion board, "Discussion Questions from February 23rd Forum," the first student writes: "[Student first name], You're a liberal ... lol, j/k. I think we might have to continue this discussion at our favorite place during OCW. See you there :) [Student first name]" There is much evidence of rich dialogue between students in the discussion forums for the course. I saw that students were not only likely to "talk" to one another, but push each other's understanding of the course content to the next level. In the discussion board, a student writes:

> [Student first name], I am not sure I agree with what you said about "exploiting foreign labor." I know that many people might look at this and say, "yes, this is exploiting foreign labor", but I think it's mutually beneficial for both the employer and employee. I know that their pay does not sound like a lot to us, and it isn't, but it is a lot to them and in their economy. It is not forced labor; it is companies who have jobs that American's won't do because they believe it is menial, or the pay is too low, that these people are willing to do. Not only are they getting paid, but they are also learning a skill that they previously did not know. We are judging this site from our perspective and how we view what is right and what is wrong, but I am sure that these people do not view it the same way. Just my two-cents though..[Student first name].

The interaction of students that is observed in the course may have been the result of the format of delivery (online versus hybrid), or may be the result of the design and incorporation of group projects.

5.4.1.3 Collaboration

The collaboration dimension of the analytical framework refers to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online

component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement of students with the teacher. For this course, collaboration was referred by the instructor as the invitation to address student interest in course topics as well as the design of assignments and the addition of an online collaborative tool in the course.

In response to an interview question on the consideration of student experiences in the design of assignments, the instructor states: “I'm generally flexible about changing the course in mid-flow to meet student expectations and student interest, and I always declare at the start of the semester that if any student has any topic they’d like to see addressed, to let me know so I could direct the course accordingly. But that invitation goes fairly flat usually.” He later remarks on how he might encourage more collaboration later: “next time I will actually move significantly outside the blackboard but in order to get real time collaboration for the students.”

Evidence of collaboration that was observed as part of the syllabus analysis for the course was the design of assignments and emphasis on group work in the process of knowledge construction: a country briefing paper was worth 30% of the total final grade, a description of this assessment is: “working in groups of 3-4, students will prepare a 20-25 page (double-spaced) country briefing paper, designed to provide an overview of key information policies, issues, events, actors, institutions and challenges in a selected national context.” Group preparation and seminar leadership was weighted at 15% of the total final grade for the course. A description of this “Each student, working in groups of 2-3, will take responsibility for preparing and introducing the seminar topic for one of the sessions during the course.” Another course observation revealed evidence of collaboration in the design of assignments as students were invited to include their voice in the presentation and consideration of course content. In Week

03, an assignment is posted as follows:

> Write a 2-3 page (single-spaced) paper outlining the key issues, varying positions, specific policy proposals, and principal stakeholders in the current "net neutrality" debate. Your paper should clearly and succinctly lay out the key arguments, proposals and evidence offered on both sides of the debate (¾ to 1 page each), and then outline and give reasons for your own position on the debate. Your paper should draw on arguments from scholarly sources, government reports or hearings, public interest groups, industry associations, and other stakeholders and should reflect the full range of the current net neutrality debate.

Collaboration was also seen as Skype broadcast was added to the course during the term. An announcement posted in this regard on 1/13 states:

> In order to improve your experience of this course, we will be setting up a Skype broadcast for next week's lecture, during the on-campus class time of 12:00-2:50pm on Tuesday. Skype will allow you to see and hear the lecture and class discussions in real time, and give you an avenue for asking questions and interacting with the group through Skype's chat functions. Participation is not mandatory, but it will benefit both you and the on-campus group to have synchronous interactions during class time. If you will be participating, please send your Skype address to [the teaching assistant- email omitted]. If you do not have a Skype account, you can set one up at http://www.skype.com/ - it is free to download and use. We are exploring several options in an attempt to involve the fast-track and online students more fully in the course, and hope that you will participate. While Skype may not be the absolute best tool, it provides a majority of the functionality we need for free. Looking forward to talking to some of you next week!

While the instructor did make attempts to change the course during the term, he refers to his desire to improve upon it in the next iteration and explains that this is the first time he has taught the course and is using a colleague's work as a guide. He states: "I'm working off a rigid syllabus right now which I inherited somewhat from a colleague in Michigan teaching on line. It's been relatively rigid and I started to extemporize." Finally, there was a course forum dedicated to student questions and comments on the course. In the Course Q&A forum, there is the following description: "Use this forum space to ask any questions you have about the course, be they technical, organizational, or in clarification of points raised in class or in other forums."

5.4.1.4 Diversity

The third and final dimension of the analytical framework refers to the inclusion of multiple perspectives and a diversity of opinion with emphasis on the consideration of social, political, and economic factors. When asked how he incorporates multiple perspectives in the classroom, the faculty instructor of the course answered that it is “central” to all the classes he teaches and further adds that “I've made it fairly clear where my own positions are on that, and I also made it extremely clear that people, disagreeing with me is a positive not negative, I don't believe I have the right answers.” He continues to discuss this specific course as a space where he has continually “pushed” students to think more about policy decisions in relationship to technology as well as social positions.

In a discussion regarding context such as social, political and economic factors and their influence on learning in the online classroom, the instructor states “that every aspect of every discussion we’ve had has been by what’s going on right now.” He later alludes that it is not possible to talk about policy without considering contextual factors.

5.4.2 Online Graduate Female

The online graduate female unit of analysis that was selected for this dissertation was Healthcare Outcomes (NURSP 2290). The faculty member of the course is an Associate Professor in the University of Pittsburgh Department of Nursing. She is one of three Associate Professors that

participated in this study. The number of students enrolled in this course was 10, the lowest course enrollment of the study. The course description found in the syllabus was:

> Knowledge and understanding of healthcare outcomes is an important competency for healthcare professionals. This online course will provide students with opportunities to discuss and analyze key issues in the healthcare movement. Conceptual frameworks used in explaining healthcare outcomes and identification of driving forces defining the development of various outcomes will be addressed. Specific healthcare outcomes and the influence that they have on advance practice nursing and policy formulation will be examined and analyzed. Finally, the strategies and skills healthcare professionals will need to practice and manage effectively within this outcomes environment will be detailed.

When asked about instructional goals for the course, the instructor stated her goals are:

> To introduce the students to the evolving importance of measuring outcomes within healthcare, prepare the nurse to function in an advanced practice role, to understand the data that is reported about an organization and how it can be used and needs to be used, to really put the whole field of healthcare outcomes into context for them and how it can impact their life and then how they need to impact that function in a practice setting.

5.4.2.1 Blackboard Course Component Structure

As you enter into the course, the first thing that you see is a Pitt Online Banner followed by a welcome message:

> Welcome to NURSP 2290! I hope you'll enjoy your experiences in this course and have a successful semester. Please make every effort to adhere to the course schedule and not fall behind. If you encounter any difficulties with the course content, please contact me for help immediately. Any course updates will be posted on this Announcement Board, so be sure to check regularly. Begin the course by clicking on the "Read Me First" navigation link on the left side of your screen. This area will explain how to proceed through this online course. Sincerely, Dr. [name omitted to maintain confidentiality]

The welcome message is written in a larger font than announcements and serves to welcome students to the class while simultaneously offering instruction to students. The

left navigation bar lists the following: Announcements, Read Me First, Syllabus, Schedule, Faculty Info, Learning Modules, Discussion Forum, Quizzes, Assignments, and Wikis. The left navigation bar has a blue background with white letters.

The announcements function was heavily used in the course. In the Read Me First section of the course, there is a "getting started" section that contains instructions for navigating through the course. The section tells students to first familiarize themselves with the navigation bar and introduces each of the major sections within. As she introduces the course forum, she includes a statement about an introduction forum where students are invited to "tell us a little about yourself so that we can all get to know each other." She concludes with instructing the students to read the syllabus and course schedule and post a bio in the bio forum, followed by starting the assignments in Module 1. In the syllabus folder, the course banner appears (Pitt Online NURSP 2290) and course information (syllabus) is provided in University of Pittsburgh syllabus template format. No word document or PDF file is separately available. In the schedule section, the course banner, Pitt Online (NURSP 2290) appears at the top with a link to course schedule below. Students click on the Course Schedule link, and a tabular, organized schedule appears. In the faculty information file folder, the course banner appears with both a picture and information for the instructor and a teaching assistant. The picture of the instructor is at the left of view with contact information beside it (including e-mail address, phone and office hours that are by appointment).

In the "Learning Modules" file folder, there are 11 module file folders and 1 case study module (between modules 5 and 6), as well as folder labeled "Final Paper". Learning modules were added as the semester proceeded. A screen capture of the learning modules file folder is shown in Figure 12.

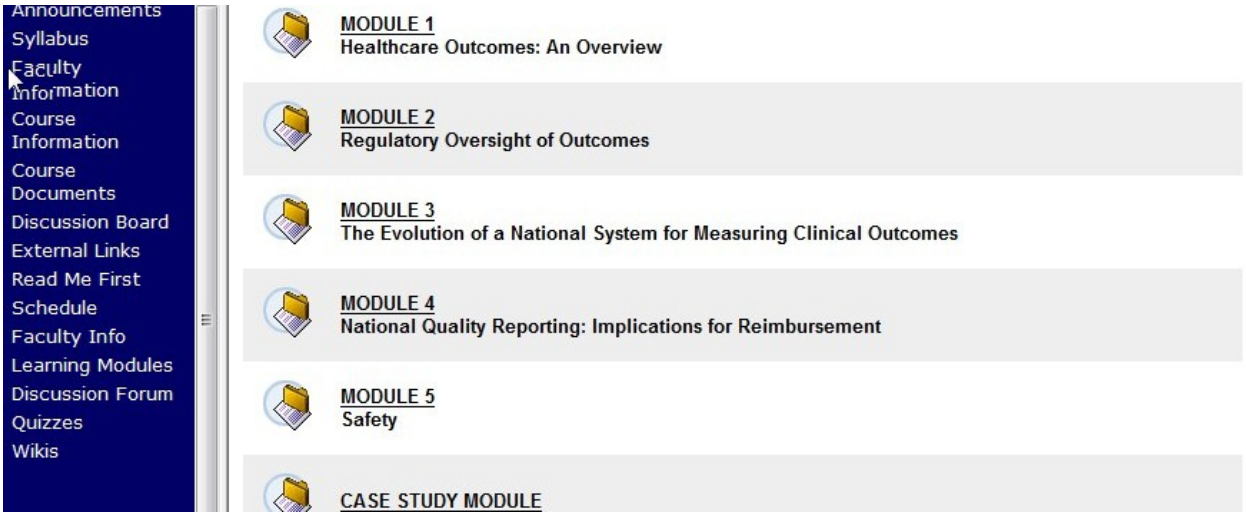


Figure 12. Screen Capture of Online Graduate Female Learning Modules File Folder

At the time of observation, only modules 1-8 were listed. The components contained within each module are: Introduction, Learning Objectives, Key Terms, Lecture, Activity including Questions for Discussion, Assignments. There are several discussion forums that are set up: Student Bios, Course-related questions and comments, and Module activities for "assignments that require answers posted on Blackboard. An example is: Module 1 Activity (with subset for each discussion question). A sample of the contents of a module file folder is shown in Figure 13. In the Quizzes section, there are quizzes listed by number, for example, Quiz 1 and Quiz 2.

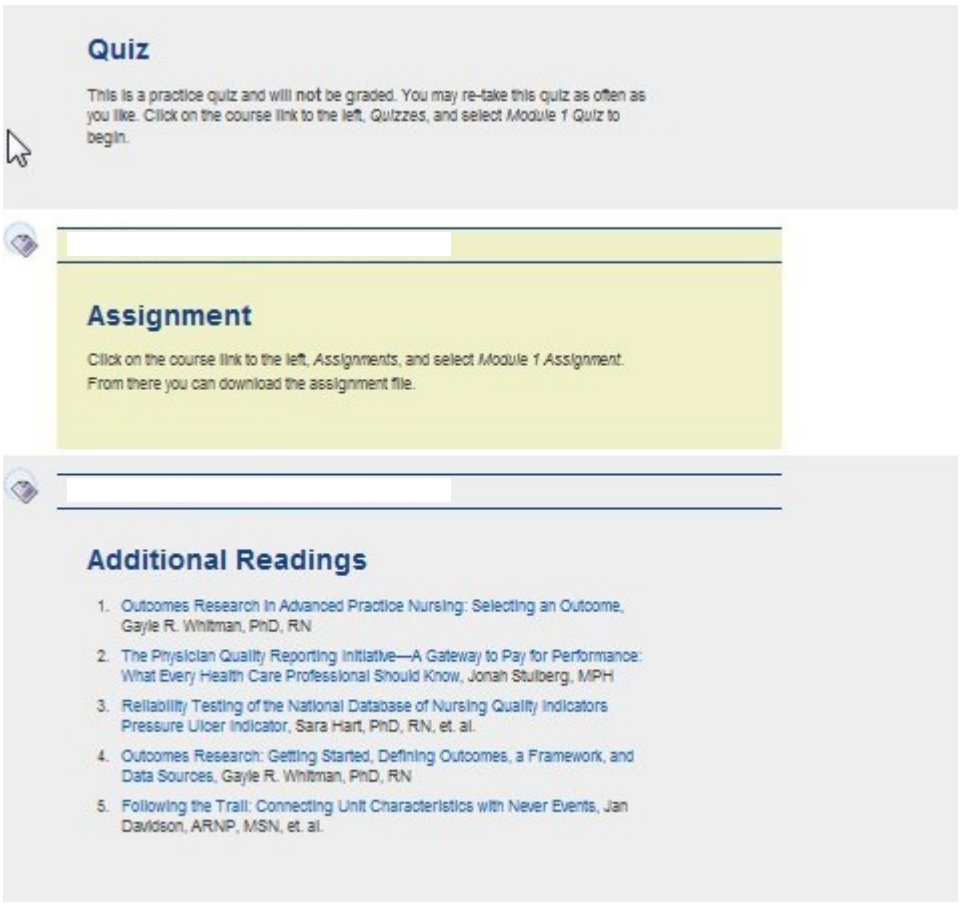


Figure 13. Screen Capture of Online Graduate Female Course Module Sample

Each contains matching style questions. In the Wikis area, Module Wikis are listed so that students can simply click on which they will contribute to according to assignments in the course. Inside the module 2 Wiki, there is a description of the Wiki assignment and group identification (with students name under group numbers) as well as their topic for the discussion. Finally, the Assignments area includes Module assignments that are numbered according to the module in which they should be completed. For example: in the course, the instructor writes: Click on the course link to the left, *Assignments*, and select *Module 6 Assignment*. From there you can download the assignment file." When asked how Blackboard supports her instructional goals, the faculty member reported that: "Well certainly it provides the mechanics for them to view the assignments and to hear the lectures and to post their assignments."

5.4.2.2 Connection

The connection dimension of the analytical framework refers to evidence of dialogue between students and students and instructor as well as evidence of integration of personal experiences of students in course structure and content. In regard to the encouragement of interaction in the course, the instructor stated, “besides the formal and informal assignments, there is a lot of opportunities to interact with me and to the degree they choose to read their colleagues entries, there’s opportunities to interact with their fellow students as well.”

This was also observed in the course as there was a discussion forum set up for student introductions, called “student bios.” The introduction to the fhuorum was:

> As a way for us to get to know each other, please post your bio here. In a paragraph or two, please tell us your name, and your occupation if you are currently employed. If not, what job do you hope to have? What would you like to be doing 10 years from now? You are encouraged to tell us about any hobbies and interests outside of school that you have and any other information you'd like to share.

Further evidence of dialogue between students and students with the instructor abounded in the discussion forums for the course. In one, there is a feel of familiarity as one student writes: “Yes, our classmate [name omitted to protect identity] is also my work colleague. Like [student first name], I am in my second class at UPITT and hope to matriculate into the DNP program in the fall. In my spare time I enjoy spending time with my family, reading and cooking. I look forward to learning from each of you as we journey through this experience together.” A note from the

instructor appeared later in the Student Bios discussion board with the title of the post "Wonderful to Meet You":

> Thank you to those who've been so timely in submitting your online bio's. It's really a pleasure to know more about your personal and professional backgrounds as well as your career goals. I am so impressed by your rich descriptions of second careers, chosen specialties, busy families, as well as an exhaustive list of personal interests. It also appears that some of you have common ties with one another from prior coursework, common employers, etc. As you can see, the diversity of the class also creates an opportunity for professional networking to explore and share resources and approaches to common issues that may exist within other health systems. photo was a great idea - and perhaps something I'll recommend to future students; it's such a plus to be able to match names with faces. We currently have (10) students registered for the class, so we can look forward to getting to know several more colleagues in the next few weeks.

Throughout the course observations of the discussion board, the faculty instructor consistently provided positive and supportive feedback to student posts while simultaneously pushing their thinking. For example she writes,

> Great example of how the focus on patient safety is affecting daily practice. Standardization of communication patterns as a means of promoting safe patient handoff is an approach endorsed by many quality and safety organizations. Your detail of how it might be applied in a clinical setting is very informative for others who may not be as familiar. Is it your experience that this practice extends to disciplines beyond nursing when communicating about a patient situation?

The instructor actively sought out other opportunities to create a community in the classroom, integrating dialogue and relationships between students and students and the instructor. A live chat session was proposed early in the course on the Blackboard site to students and was discussed in the faculty interview. She comments, "what I do plan to do is schedule a voluntary, open chat session so that students can meet one another by voice. I haven't figured out how to do this but they would meet by voice and would also have

the opportunity for group discussions." This excerpt is part of an announcement dated 1/7/10 and is titled, "First Week in Progress!"

> Finally, I wanted to ask for your feedback regarding the potential of scheduling a "live" group chat session midway through the course. If you are interested, I will explore the feasiblity with the staff at CIDDE. My recommendation would be to schedule this shortly after Spring Break, perhaps as an opportunity to talk about the case review and also to clarify any questions you have about beginning your paper. It would also be a chance for us to "meet" even if only by phone. Give it some thought and let me know if you'd like me to pursue. Please stay in touch as we learn together.

The instructor laments about the inability to create the course based on student composition because of the need to upload course materials prior to the enrollment of students in the course as is the nature of an online course. She states: "I would have to say in the online course, I have found the opportunity to do that [incorporate student experiences] very limited, because the content, the learning activities and assignments are all determined in advance of my ever knowing the composition of the student classroom."

5.4.2.3 Collaboration

The collaboration dimension of the analytical framework refers to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement of students with the teacher. In this course, collaboration was incorporated in the design of assignments for the course. The instructor discusses one such assignment in her interview:

> for example the title paper for the course requires the students to choose the outcome that can be influenced by nursing and it can be something that's very commonly collected measure of quality such as hospital acquired – or it may be

> something very unique to their own practice settings such as compliance with instruction, in and out patient setting for certain disease categories, it really needs to be an outcome of interest to them and that is influenced significantly by nursing.

The final paper instructions were also included in the course syllabus with description of the selection of a healthcare outcome as described in the quote above. The encouragement of selection of the topic by the student as opposed to an instructor- dictated topic is evidence of student contribution to the learning process and knowledge construction through contribution of both student and teacher. The assignment also provides a space for students to integrate their personal experiences and interests with course content and represents equality and power among learners. In response to an interview question on how she incorporates student experiences into her teaching, the instructor states that: "Try to take what I hear, in their response, and … bring it back to the core content… to help them see that, how this relates to … what we've talked about, another really good example of that is in one of the assignments these past few weeks, the assignment asked the student to describe some recent initiatives in their own practice setting." This reinforces the inclusion of student voice in the design of assignments.

In the Teaching Methodology Section of the course syllabus, the instructor includes "Lectures, discussion and independent learning assignments, group and individual projects," that shows evidence of the consideration of multiple ways to present material and emphasize knowledge construction as a process achieved through group and individual projects. The instructor also used Wikis in the course to collaborate with students on various topics. As well, there was also a discussion board dedicated to course-related questions and comments, that served as common space for students to share questions they may have on the course structure or assignment. The instructor talks about how the forum "We have used the discussion board both

to post assignments as well as create just a link that is for course related questions and comments, although I have found that students tend not to use that as much as they rely on emailing me directly. At the beginning of the course, I found that very overwhelming."

At the conclusion of the interview, the faculty instructor invited feedback from me personally on her course as she states:

> As somebody who has done this, if you have suggestions, I am so open to them. Really, this has been a completely new experience for me, but I also… I don't know what I don't know and so, because I've never taken an online course before, online teaching is somewhat new to my colleagues in this school of nursing, we're all learning as we go.

In this comment, she openly admits to being "new" to online learning and is clearly open to learning from others who have done it.

5.4.2.4 Diversity

The third and final dimension of the analytical framework refers to the inclusion of multiple perspectives and a diversity of opinion with emphasis on the consideration of social, political, and economic factors. Similar to other instructors interviewed for this dissertation, the faculty instructor discusses the inclusion of a consideration of contextual factors (social, political and economic themes) as they relate to the content of the course. She explains, "the content for the course, is very much based upon current state in healthcare and social political economic themes." She states later that "I feel there's consideration of those factors because the content is just about as current as it can get."

Interestingly, she concluded the discussion with an example of the manner in which an online class presentation affects her ability to incorporate current context. She describes an example where a student in one of her face to face classes brought in a newspaper article related to course content. She was able to copy it and share it with the class and describes how that is not possible in Blackboard because the content is constructed ahead of time. She comments:

> One thing I've learned from the online portion, because the lectures are prepared several months in advance, and recorded and posted and kind of there already. I am less able to – I have found it less easy to incorporate, today … occurrences or things that have evolved into their content, as I would if I were teaching it in the classroom.

In terms of emphasis on multiple perspectives and inclusion of a diversity of opinion, she cites again the discussion boards in the course as she states, "I have seen some evidence of them sharing with one another, in a discussion board." She adds that "hopefully looking at what other people are writing about broadens their perspective because they all come from different places." The comment speaks to the importance of dialogue between students and focus on the discussion board as a space to not only encourage the formation of relationships as part of a community of learners, but also as an opportunity for the students to learn from various perspectives.

5.4.3 Within-Case Analysis: Online Graduate

The instructor for the online graduate male case for this dissertation was a full professor in the Information Sciences Department at the University of Pittsburgh, while the instructor for the online graduate female case was an associate professor of nursing. In terms of the connection dimension of the analytical framework, each course contained discussion boards that included a student introduction forum suggesting attempts to promote dialogue between students and encourage relationships. In the case of the online graduate female, there was an attempt to

schedule a live chat session so that students had a chance to further get to know each other. There was also consistent, positive and supportive feedback in discussion boards in the course. In the online graduate male case, Skype was used as another manner to communicate. Finally, the online graduate male case had a teaching assistant post most of the content in the course that added a level of disconnect between students and faculty instructor.

In terms of collaboration, both instructors cited assignments in their course as a space where students participate in knowledge construction. The online graduate female case included a final paper that allowed students to choose their topic while the online graduate male case included group projects. They both included a separate discussion forum on course related questions and comments. The online graduate female faculty member showed evidence of using an additional, more advanced collaborative feature in addition to Blackboard- the Wiki. She also invites feedback from me during the interview at the conclusion of my list of questions. Finally, similarities again were noted for the diversity dimension of the analytical framework where both faculty members discussed their incorporation of social, political and economic factors in the content of the course. The online graduate female instructor additionally talks about the discussion board as a space where students can learn from multiple perspectives. Interestingly, the online graduate female faculty member discussed the inability to be as current as she would like to be because of the online course presentation, in light of the fact that content is uploaded prior to the beginning of the course.

5.5 ONLINE UNDERGRADUATE CASE

The fourth and final case included two online undergraduate courses, one taught by a male faculty member (COMMRC 1105: Television and Society), and one taught by a female faculty member (PSY 1255: Principles of Behavior Modification). The context of the fourth case study is an online presentation. The case is undergraduate-level courses. At the University of Pittsburgh, undergraduate courses are identified numerically in the following range: 0001-0999 (lower level undergraduate) and 1000-1999 (upper-level undergraduate, that in this case were 1105 and 1255. The embedded units of analysis were one male and one female faculty member. In the following two sections each will be thoroughly discussed and case analysis presented through the three dimensions of the analytical framework designed for this study: *connection, collaboration and diversity*.

5.5.1 Online Undergraduate Male

The hybrid undergraduate male unit of analysis that was selected for this dissertation was Television and Society (COMMRC 1105). The following course description was provided by the faculty instructor of the course within the course syllabus on the Blackboard course page:

> Television and Society is designed for upper level Communication students who have some background in Media or Film Studies. This course will deepen your study of media by focusing on television as a means of social representation within the public sphere and as a domestic appliance. You will learn to analyze the process of representation on television and identify its social, cultural, ideological and political implications. Our goal is to establish the basis for the academic study of television -- that is, taking television seriously in the university -- and provide students with the tools for critical, analytic, approaches to television. The purpose of this course is to provide you with a set of critical concepts with which we can ask a range of questions about specific programming and come to a more sophisticated understanding of its communication processes

> and representational functions. Students should be able to apply those concepts in their assigned work.

The instructor states early in the interview his specific instructional goals for the course: “My goals would be to give them certain number of critical tools that they can then take to their own television experience, a lot of it is about empowerment. In a word it would be empowerment in relationship to the media they consume every day.” The instructor for the course is a part-time faculty member in the Communications Department at the University of Pittsburgh. He was the only part-time instructor included as a participant in the study. He later added in the interview that he lives in Vancouver, Canada. He teaches the online course from his home, a great distance from Pittsburgh which is where most of his students live and work. The number of students enrolled in this course is 21.

5.5.1.1 Blackboard Course Component Structure

Prior to course observations of the Blackboard component of the online undergraduate course, the faculty instructor sent an e-mail agreeing to participation in the study that also stated that: “While I use Courseweb, I supplement with my own material hosted on my own domain.” The instructor sent in the e-mail two links to course materials and two links to wikis. The first link to course material contains a banner with the course name and number and University of Pittsburgh, there are four options to scroll through at the top of the screen, Welcome, Schedule, Assignments and Links. In the Welcome area, there is an introduction to the course, course goals, downloadable syllabus, resource references such as technical requirements, required texts and online resources and a link to the class blog, instructor information and picture, modules 1-14 with module descriptions and images. The final section of the “welcome” area contains course policies on plagiarism, g-grade, submission and re-writes, and students with disabilities.

The Schedule area link was broken, and could not be viewed. The Assignments area of the link contained information about papers due in the course along with general paper guidelines that included hints on how to succeed in the writing assignments for the course. The final area on the link is "Links," that provides research resources, sources for ads, education sites, and culture jamming each heading is complete with lists of URLs. Within this space there is an additional area for links for the course called "delicious."

The second link that the faculty instructor included in the e-mail as ancillary electronic course material was a website of course lectures. The video clips are labeled according to module number; fourteen are listed in addition to a clip on "how to submit papers." The first link provided to a wiki space. The webpage contains instructions on how to contribute to the wiki. The site also has course description, required text citation, lecture recordings and assignments and requirements, and class schedule. The class schedule area contains PDF files of course readings and links to YouTube videos, where appropriate. The wiki features pages related to presentations, APA style guide, presentations assignments, short papers and term paper. The second wiki link begins with the title, "syllabus wiki" and includes a short You Tube video on learning more about wikis that not only touts the benefits of using a wiki as opposed to e-mailing to share information, but provides easy to use instructions. On this page, the instructor includes the course schedule, grading and evaluation. The wiki includes pages for assignments 1-3, cultural fragments, journals, photography, reality things suggestions, resources, sandbox and term paper.

As you enter into the Blackboard component of the course, there is an image of an old-fashioned recording device in the Announcements section of the course. The overall course design as listed on the left navigation bar is as follow: Announcements, Dropbox, Syllabus,

Faculty Information, How to Complete a Module, Discussion Boards, Module 1/6 to 4/12 (Figure 14). This list is followed by the toolbox containing the communication, course tools and course map options. The Announcements section of the course was not used. The content of the dropbox file folder was not visible.

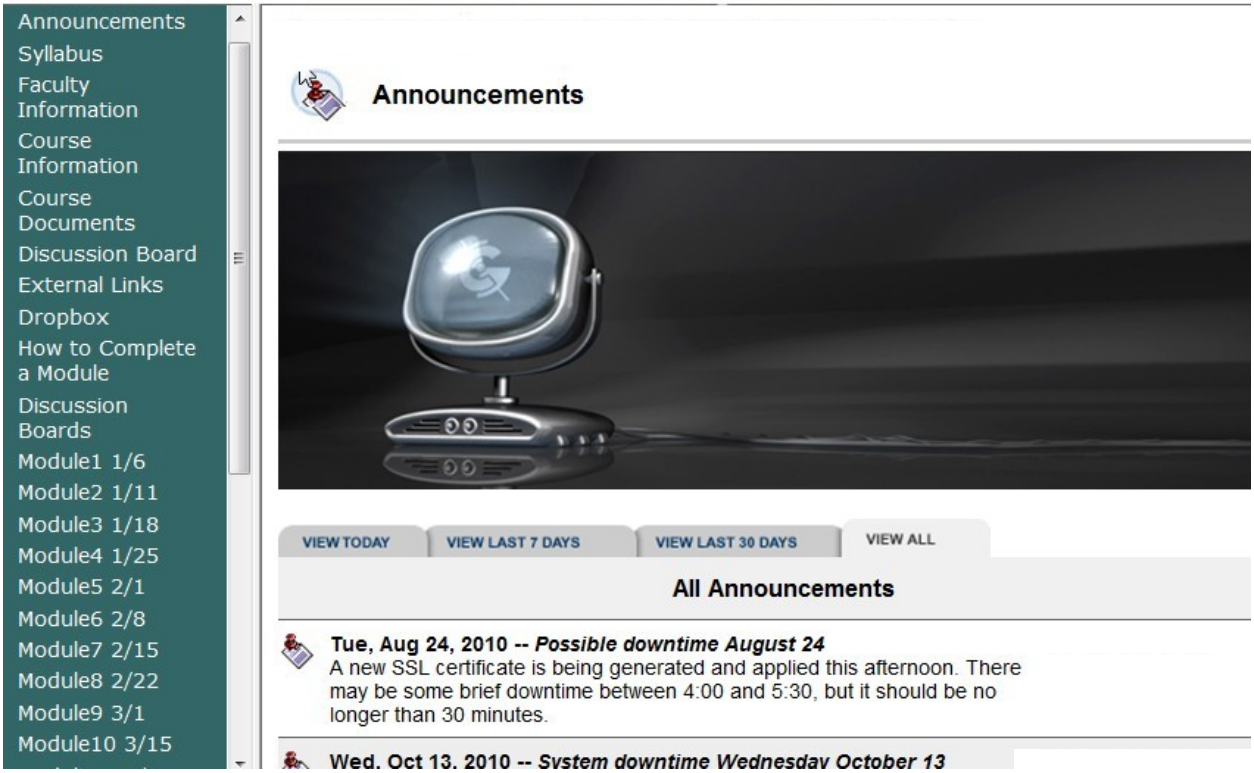


Figure 14. Screen Capture of Online Undergraduate Male Course Navigation Bar

In the syllabus folder, there is first listed a downloadable course syllabus in both word and PDF. To follow, are University of Pittsburgh syllabus template components including Introduction, Course Goals, Course Structure, Course Materials and Technical Requirements, Lectures, Course Outline, Course Requirements and Grading, Late Paper Policy, Course Policies, Academic Integrity, Disabilities, G-Grade Policy, Accessibility. In this file folder, there is a picture of and contact information of the instructor. The contact information includes e-mail address, Skype address, Office hours, and Notes. The Office Hours section states: “You can

email me anytime and I am happy to set up chat or skype weekdays between 11:00am and 8:00pm. Email me for my cell number if you need it." In the Notes section, the instructor states: "I live in Vancouver, British Columbia, Canada"

In the "How to Complete a Module" file folder, there are seven steps and descriptions of each step related to how to proceed through each module. Each of the steps is presented under days of the week in order to indicate how students should manage the work for the class during a typical week. Specifically, on Monday and Tuesday, the students should:

> Step 1: Read Module Introduction & Objectives, Step 2: Think about a relevant show/episode, Step 3: Reading, Step 4: Lecture. On Monday- Thursday: Step 5: Watch TV and Step 6: Join Our Discussion. Finally Thursday- Friday, students should complete Step 7 which is Writing Assignment.

In the discussion board file folder, the instructor begins with an explanation of the discussion board in the course. Students are instructed to post to 10 weekly modules. Notably, posts are not evaluated but they are counted at the end of the term. He then gives several bullet-pointed lists, first on what to discuss, secondly on how to respond to the post of others, and third on what post and comments should try to do. For example, under "Post and Comments should try to," the instructor writes "refer to the readings or lectures, engage with the ideas and critical tools presented in the module readings/lectures, and demonstrate your knowledge and familiarity with the course materials." On 1/4/2010, the instructor posted a "What are you watching?" forum. In it he states: "Just to get us started, I'm interested in what students are watching.The only thing I'm watching now that *Mad Men, Nurse Jackie, Weeds, Hung and Californication* are over is *Men of a Certain Age* (because, well, I am a man of that age). I also discovered *Day of the Triffids* from the BBC on EZTV.it and that's been good. Oh, and I enjoyed the Good Wife and I'm just now getting into Modern Family. Other than that, I'll be waiting for some favorites to resume like *Big Love*.I gave *True Blood* a shot but just could not get into it. And then there is always the *Daily*

Show, right? What are you watching?" He also signed off with his first name. Students responded to the post with lists of TV shows they are currently watching. In many cases, the instructor writes back with comments. In the module view, the following sections are included: Introduction, Learning Objectives, Readings, Viewing, Lecture, and Writing Assignment (Figure 15).

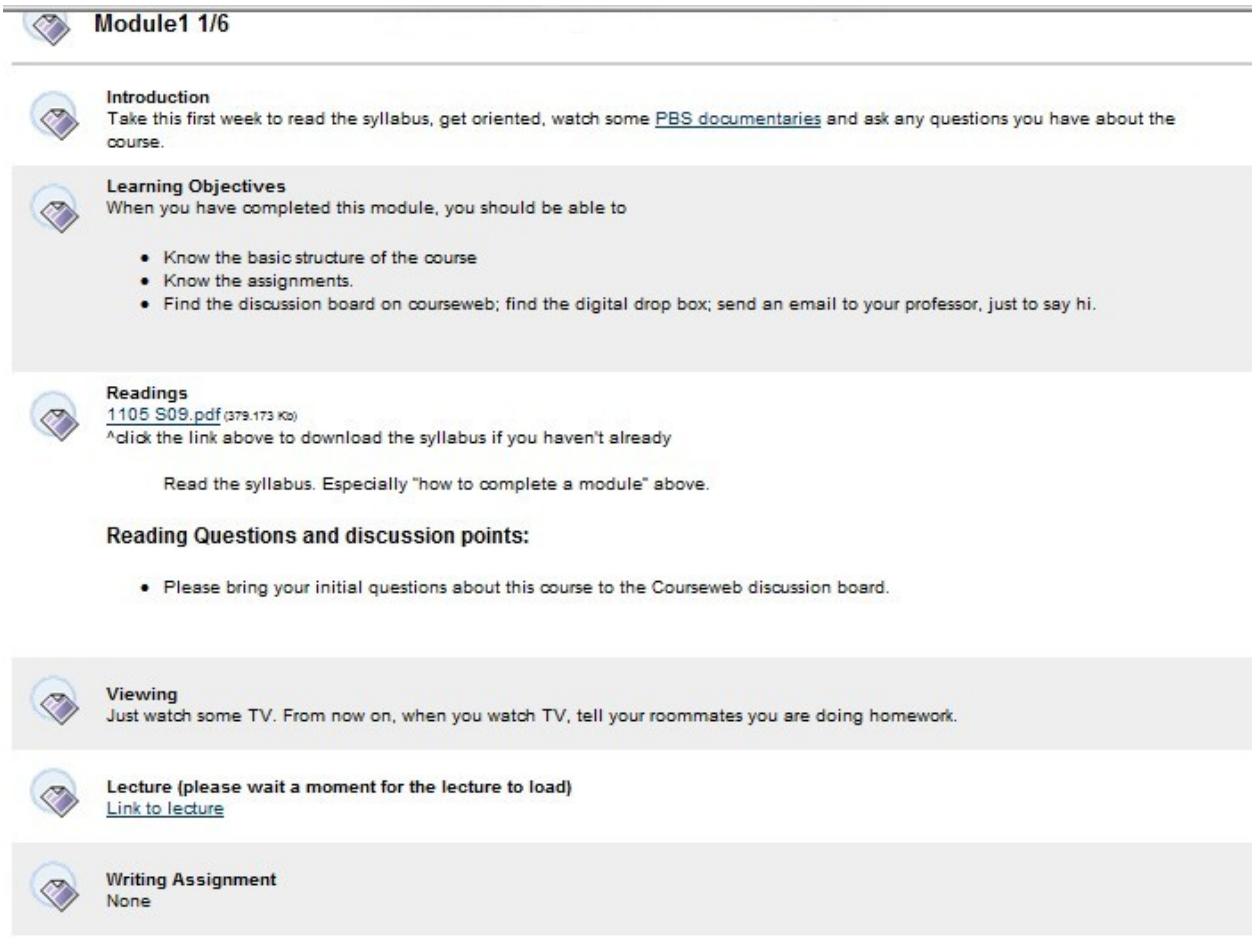


Figure 15. Screen Capture of Online Graduate Male Course Module

After the interview, the faculty instructor sent along the following electronic mail message regarding his use of Blackboard, that served as a reflection of our interview. He talks here about the manner in which Blackboard lacks the collaborative features that the Web offers:

> One of the things I have been thinking about Blackboard since our talk is that it really is text-based or text-oriented. As I said, it is structured as a content delivery system, very web 1.0 rather than what the web is becoming (and what our students experience) which is an image, video, audio driven participatory platform. I see Blackboard trying but it seems either behind the curve or simply structurally inadequate for creating that kind of experience. I advocate all the time to set these closed, text-based proprietary CMSs behind and just cobble together the tools you need to create not a virtual classroom but a web 2.0 learning environment. Blogs, wikis, podcasting are what I am coming to depend upon. Yes, Blackboard has those things and but somehow the overall context seems to work against the kind of experience I am looking for. Perhaps this is just lingering dissatisfaction with BB, perhaps I should be open-minded about BB, I don't know. I like Moodle a lot better because it's cleaner, more open, easier to manipulate to one's liking. WebCT is a disaster! OMG.

5.5.1.2 Connection

In terms of connection, dialogue between students and students with the instructor was considered. For this dimension of the analytical framework, the support of the development of relationships between students and students with the instructor within the course management system was addressed. Specifically, integration of student experience with academic inquiry was examined. The instructor of this course emphasized dialogue between students through knowing his students and consistently encouraging interactions. An example of the manner in which the instructor described his students and the way that he uses that knowledge to shape his course is as follows:

> The type of students who take my course are busy students who need flexible schedule, and when I teach, I work really hard in providing – I have flexibility in my courses, as you know, my courses are built around flexibility, because I recognize that students who take online courses need to be able to come and go as they please and they're often on site, obviously live in the middle of Pennsylvania somewhere, home for whatever reason or doing an internship…I find a lot of students are trying to build flexibility into their schedule so I work really hard accommodating that.

The course syllabus reinforced the statements that he made in the interview. For example, in the "Course Requirements and Grading" section of the document, there is a paragraph on

discussion participation. Students are required to participate in 10 out of 13 discussions. Students may choose from ten weekly modules in which they will participate. He writes:

> If you are having difficulty with the material, your peers and your instructor can help you out. You may respond to the posts of others; your comments might address the poster's questions, add to the discussion, engage in respectful debate, offer other (or counter) examples of TV. Posts and comments should try to refer to the readings or lectures, engage with the ideas and critical tools presented in the module readings/lectures, demonstrate your knowledge and familiarity with the course materials.

He also provides a "what are you watching?" forum to begin discussion in the discussion area of the course. He writes, Just to get us started, I'm interested in what students are watching," he continues with a note on the various television shows he is currently watching and signs off using his first name.

In addition, the instructor is accessible and makes every effort to accommodate students as was mentioned in his earlier statement about the type of students who enrolls in his course. In the staff information area of the Blackboard site, the instructor provides an e-mail address, Skype address, instant messenger and jabber. He also adds a note that students may e-mail him for his cell phone number. In the interview, he describes an example of an interaction he had with a student where he reached out to her**: "**I gave her my cell, I talk her through, here's how to set up an account." Finally, he states that: "It's important for me to give students a voice. I think it's really important for students to be heard, like the blogging thing, I think students want to be recognized."

In the course syllabus, course structure section the instructor addresses the manner in which the design of the online presentation connects students to course content: "To compensate for the lack of classroom screenings and discussion, the course structure and assignment

rationale are designed to connect the course to students' everyday lives as television viewers – to create a *critical* viewing experience outside the classroom."

5.5.1.3 Collaboration

The collaboration dimension of the analytical framework refers to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement of students with the teacher. In this course, the instructor emphasizes how he has integrated collaboration in an online setting.

According to the faculty instructor, collaboration is at the heart of his pedagogy and is an important part of the course:

> I keep pushing students to collaborate and the courses are built around the collaborations, that's what they have to do, to collaborate online, it's part of what I teach, about online collaboration and how it changes the work process – how it changes the creative process.

He uses the online format of course presentation to dialogue with students as part of a community: "I am getting caught up in the web 2.0 vibe, the philosophy of sharing and collaboration, openness and freedom that the Internet provides." The faculty instructor speaks directly to the democratic construction of knowledge as part of the course, where there is equality and power among learners as he states:

> My courses more and more are wiki-based because I want to offload the responsibility from me as a teacher and unload it to the students and let the students be able to collaborate with me in a learning process – finding resources,

> work with resources, it behooves us now to get students involved in the whole process.

He later adds that:

> I think it's important for students to contribute to building a knowledge base and finding resources, being open about their work, the model of them writing a paper for me, grading it completely in private, I think needs to change– may have it's place but I'm moving away from the model, moving toward a model of openness where students are public about what they write.

In a discussion of his assignment policy, the course instructor reveals flexibility and focus on the students with a new approach. He discusses the differences he perceives between online and seated class and further relates his use of the format to promote student choice. He relates the following during the interview:

> My assignment policy is I never take off grades for late work and they have a week extension for every project. I like to do short writing projects throughout the term because I find that more pedagogically useful. My experience face to face when I've given a course structured… the structure is, a mid term and a paper at final. Students have difficulties sand it doesn't get fixed. Kids start off writing papers, 6-7 and by end of the term are 10's. I work with them. You can't do this face to face in the same way. Work with them on their papers to develop their writing. So yes, I've built a course around flexibility, they choose the modules in which they write papers for – 10 / 14 – I don't take off grade for late papers but I have to protect myself because inevitably I'll get ten at the end of the term. I'm not paid to be a cop. Sometimes faculty love to punish students and set up wicked criteria and punish students for not meeting them. It's a way to get grades down… and I don't know, they write down the date and take off their grades for late papers and I don't want to be that.

In the course syllabus, in the "Late Paper Policy" section, there is a note: "If you need an extra day or two to hand in your papers, take them. You don't need to ask permission." This again speaks to the idea that there is equality among learners in the course and further that there is not a hierarchical structure in place where the instructor reigns. Rather, there is evidence of an

effort to construct knowledge in the course through mutual contribution of students and instructor.

The assignments invite students to think conceptually about what they are watching on television. There is not a collaborative effort in place in terms of student construction of assignments, however, students are invited to connect directly to the content and relate it to their own experiences. Additionally, it seems that in general, students are asked to take on a perspective that may not be comfortable or authentic.

5.5.1.4 Diversity

The third and final dimension of the analytical framework is diversity. For this dissertation, diversity refers to the instructor's inclusion of multiple perspectives as well as an incorporation of contextual factors such as the consideration of social, political and economic influences. There is an emphasis on diversity and social justice, and an inclusion of many different opinions. As in the case of the previous courses discussed, the diversity dimension of the framework is integrated at the level of the content of the course as was described by the instructor. In response to a question regarding the extent that contextual factors like the consideration of social, political and economic factors influence learning in the online classroom, he states that:

> teaching courses on media, and on TV, I have a whole section about the public sphere, and they write on talk shows, they write on the news, on the daily show, so that whole first half of the course is connected directly to what's going on out there and shifting values and ideology, and the second half of the course about domestic space is the same thing, changing ideals of the family, perspectives on gay cultures…..stuff like that, it's all over, integrated all over the place, the course content lends itself to that.

As stated earlier, when asked his instructional goals, he stated that "My goals would be to give them a certain number of critical tools that they can then take to their own

television experience, a lot of it is about empowerment." I highlight this statement again here because it relates to the diversity dimension in terms of the inclusion of a consideration of justice through the encouragement of multiple perspectives. He also comments in the interview that the course content "connects them [the students] to the larger world of discourse."

5.5.2 Online Undergraduate Female

The hybrid undergraduate female unit of analysis that I selected for this dissertation was Principles of Behavior Modification (PSY 1255). The following course description was provided by the faculty instructor of the course within the course syllabus on the Blackboard course page:

> Principles of Behavior Modification is an ONLINE course that teaches students about how behaviors develop and how we can assess and change them. People change behaviors every day in their lives, but often not very effectively or for the long term. In this course we will be taking a formal look at how behavior is most effectively changed. The course will guide you through the required textbook and includes multiple interactive components. You will develop, assess and treat a simulated clinical case using behavioral techniques in a project portfolio. You will identify important concepts in a clinical description in a chapter quest. You will also participate in class discussions of clinical and ethical issues. You will receive feedback from your instructor in all of these assignments. Almost half of your work in this course will be written work in the project portfolio and class discussion. This work will require preparation and thought and will be graded accordingly. Revisions are frequently required

The instructor states early in the interview her specific instructional goals for the course: "My main goal for them is to understand behavior modification in the context of the field of clinical psychology." The faculty member for the course is considered an instructor in the Psychology

Department at the University of Pittsburgh. She was the only instructor, as indicated by her faculty rank included as a participant in the study. The number of students enrolled in this course for the term that I observed it was 20.

5.5.2.1 Blackboard Course Component Structure

The overall course design that I observed as listed on the navigation bar that was created as blue background with blue letters consisted of: Welcome, Introductions, Syllabus, Schedule, Technical Requirements, Units 1-5, Quests, Projects, Unit Class Discussion, Chapter Exams, Topics for Thought, Quest Models, Contact Me (Figure 16). Included below the list as standard in the Blackboard CMS were Tool box with options for Communication, Course Tools, Course Map, Refresh and Detail View.

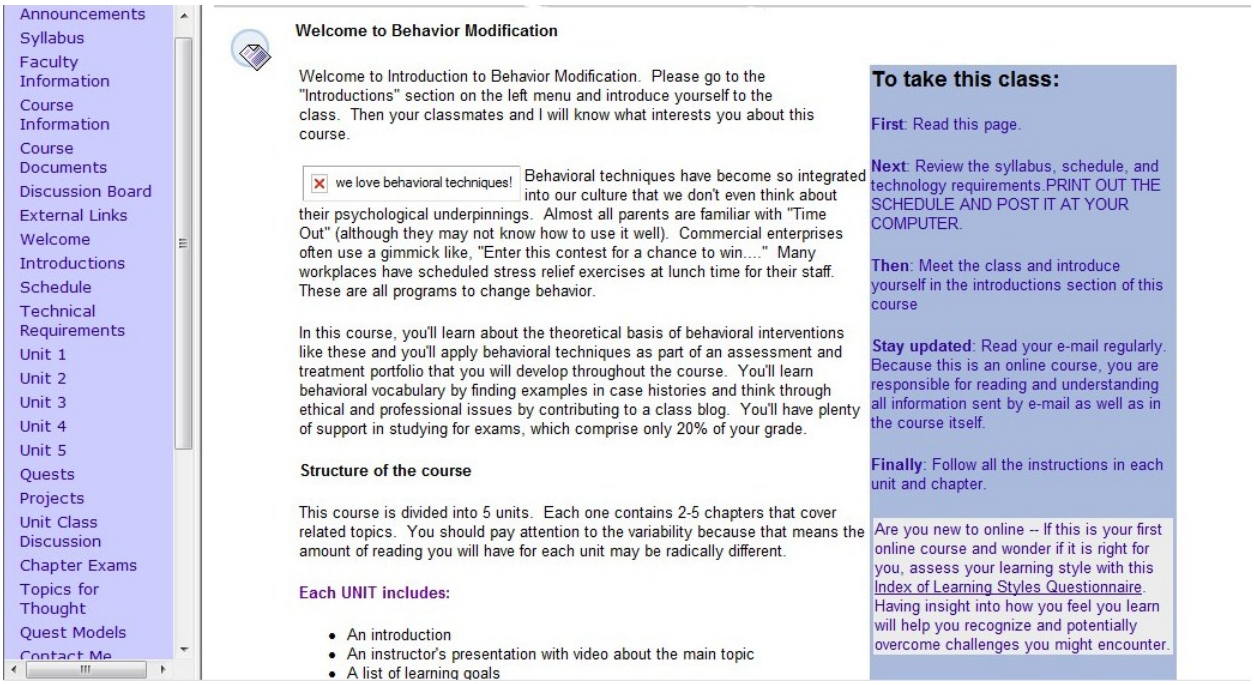


Figure 16. Screen Capture of Online Undergraduate Female Course Navigation Bar and Welcome

Upon entering the course, the student is immediately greeted with a welcome message; the message is complete with pictures of behavioral techniques (such as the time out). The message states: “Welcome to Introduction to Behavior Modification. Please go to the “Introductions” section on the left menu and introduce yourself to the class. Then your classmates and I will know what interests you about this course.” The welcome message also discusses the goals of the course:

> In this course, you'll learn about the theoretical basis of behavioral interventions like these and you'll apply behavioral techniques as part of an assessment and treatment portfolio that you will develop throughout the course. You'll learn behavioral vocabulary by finding examples in case histories and think through ethical and professional issues by contributing to a class blog. You'll have plenty of support in studying for exams, which comprise only 20% of your grade.

The structure of the course was detailed in the welcome message as well:

> This course is divided into 5 units. Each one contains 2-5 chapters that cover related topics. You should pay attention to the variability because that means the amount of reading you will have for each unit may be radically different. Each UNIT includes: An introduction, an instructor’s presentation with video about the main topic, a list of learning goals, a class discussion in which you will address a professional or ethical issue.

An additional component of the welcome message (in a separate column located to the right of the message) is as follows:

> To take this class: First: Read this page. Next: Review the syllabus, schedule, and technology requirements. PRINT OUT THE SCHEDULE AND POST IT AT YOUR COMPUTER Then: Meet the class and introduce yourself in the introductions section of this course. Finally: Follow all the instructions in each unit and chapter. Are you new to online -- If this is your first online course and wonder if it is right for you, assess your learning style with this Index of Learning Styles Questionnaire. Having insight into how you feel you learn will help you recognize and potentially overcome challenges you might encounter.

In the Introduction section of the course, the instructor lists information about herself first

in a section called “Meet me..” In this section, she writes about her educational and professional background and current professional involvements. In a section below, she includes a “Patriarchs of Behavior Modification” where she writes: “I’d like to introduce three well-known behaviorists: Bandura, B.F. Skinner, and Ivan Pavlov.” Beneath this section is a section entitled “Introduce yourself.” The assignment instructs students to create their own homepage within Blackboard, providing three steps. She then goes on with each section, in the Introduction text field, the student is asked to include their name, major, interest in the field, and career goals. In the personal information text field, she instructs students to include their study and work habits and description of themselves with discussion of hobbies and interests. There is also an image section, where students have the option of posting a picture or some image. There is a website section where students are asked to share their favorite website. In the Meet your Fellow Students section, there are instructions on how to go the web pages of other students in the class.

The Syllabus area of the course contains the course syllabus provided in the University of Pittsburgh Blackboard syllabus template format. There is no hard copy of this document provided. Sections included were: hello, course description, course rationale, course materials, course requirements and grading, g-grade policy, course policies, grading, academic integrity, disabilities, copyright notice and accessibility. In the Schedule file folder, a “Major Milestone Schedule” is provided. The note above a tabular schedule states: “This schedule lists key deadlines in the course. Please keep this schedule handy for future reference.” The instructor further notes “You are STRONGLY advised to work consistently, not just work late at night before a deadline.” In the technical requirements area of the course, the instructor details that: “All assignments must be posted into Blackboard directly or from a Notepad. I will not review and no credit will be given for work that is not correctly posted.” To follow, there is information

of compatibility under each of the following areas: operating systems, browsers, applications, audio and Internet connection speed. Finally, there is a phone number provided for the University of Pittsburgh technology help desk.

Units 1-5 are then listed separately along the navigation bar. An example of the content of the unit folders is, as in the specific case of Unit 1: Unit 1: What is behavior, Unit 1 Presentation, Chapter 1 (file folder), Chapter 2 (file folder), Unit Discussion, Unit Learning Objective (located on the side of the first section- Unit 1: What is behavior?). A screen capture illustrating a sample of the contents of this section is shown in Figure 17.

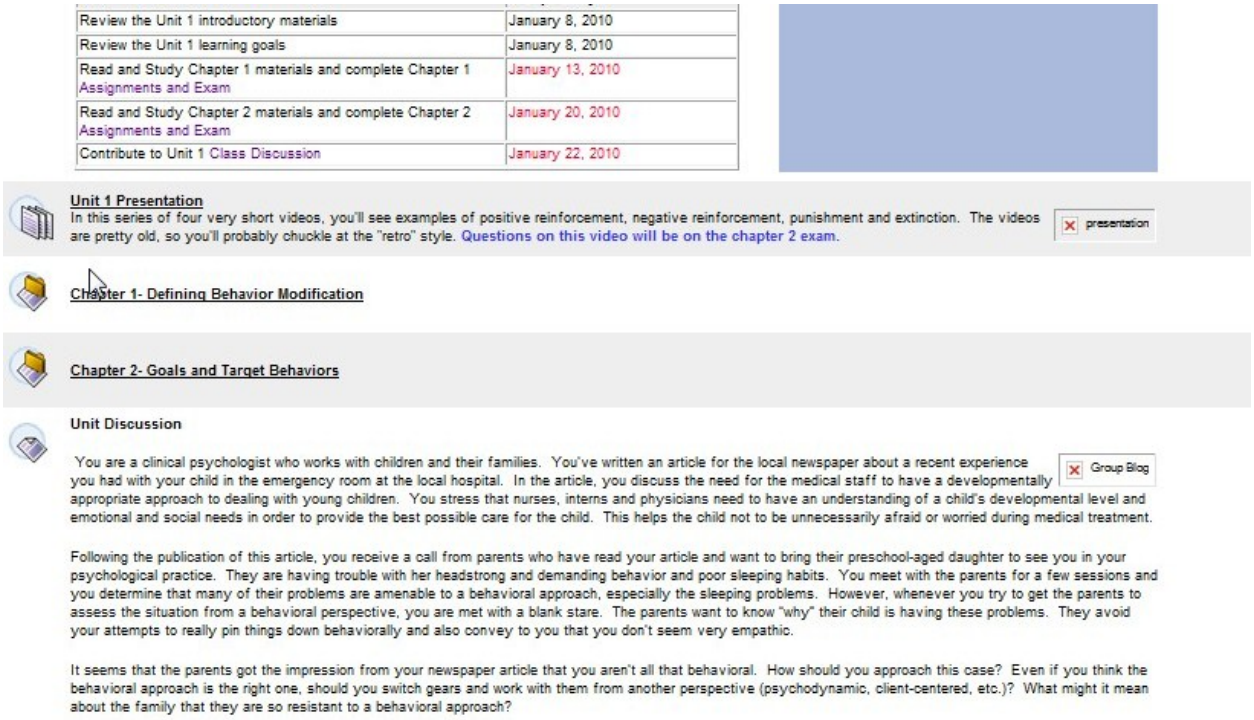


Figure 17. Screen Capture of Online Undergraduate Female Course Unit Section

Each uses the University of Pittsburgh course templates. In this introduction, there is also a picture of a young girl with dark hair who is obviously yelling, that seems to match the description in the example here. The chart is reader-friendly and communicates to the students

what needs to be done in the unit, how to approach the material and offers a plan of attack (via deadlines on the right hand side of the table). This is unique in the courses observed; it leaves little room for misunderstanding.

In the Unit 1 presentation section, there are attached video clips that students can click on to watch. The chapter 1 file folder contains a series of four short videos. Within the Chapter 1 folder, there are another series of folders to follow an introduction to the chapter.

The folders in the chapter file folder are labeled: Quest, Project Portfolio, Study Hall and Chapter Exam (Figure 18). The Chapter 2 folder contains the same labeled folders. The Quest file is an area where students can “take the quest for knowledge” and post an answer in a private area. The Project Portfolio is a series of 11 projects where students work with a simulated client in “completing a behavioral assessment and planning an intervention.” Students are required to “develop a case study for your client whose problems you will describe, assess and treat.” The Study Hall area of the course is a place where students can prepare for chapter exams. Within each is a list of important terms and study questions. There is an exam for each chapter in the course.

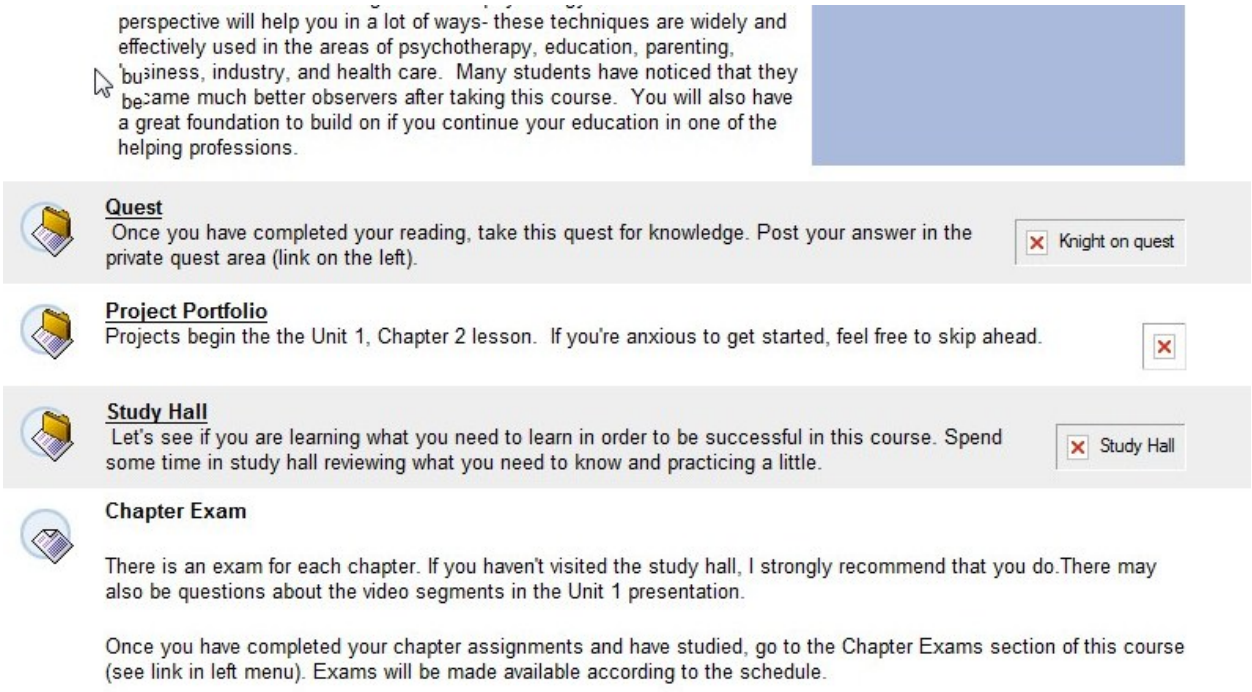


Figure 18. Screen Capture of Online Undergraduate Female Course Chapter File Folder Assignments and Exam Sections

The Quests link on the navigation bar includes a description of the questions which is that: "In each chapter there is a quest assignment. When you are ready to complete the quest assignment, you will return here and post your contribution according to the instructions. Your posts will not be seen by other students. You will be able to see the instructor's comments on your work." The Quest is actually a course blog. There are instructions included on how to contribute. The Projects link is a Wiki for the course projects that students create one chapter at a time. Each chapter contains instructions for the chapters' contribution to the project. There is a list of instructions of how to create pages in a wiki. To follow, there is a list of student wikis. The instructor has comments on each one for every page they include.

The Unit Class Discussion area includes a description of the function of the discussion in the course. There are 5 discussions, one for each unit of the course. The purpose is to provide

students with practice in working with problems that behavioral psychologists encounter. The Chapter Exams area includes information on the exams in the course. There is general information regarding the types of questions that students may expect as well as a warning to not use reference materials during the test, as they are timed. The Topics for Thought area includes a blog on various topics such as “Are feelings behaviors?” and “is “not doing something a behavior.” The Quest Models area includes a list of all the chapter quest blogs. Finally, the Contact Me area of the course includes information on the instructor of the course including name, e-mail address, work phone, office location, office hours, and notes. There is also a picture included.

The course was the most complex that was observed as part of this study. In the interview, the instructor states that “I can say that developing this course and the other I teach is incredibly labor intensive” When I asked about her use of Blackboard, the instructor stated:

> yeah, you know, there are more options out there on blackboard that I don't use but what I try and do is set up different platforms for them to read things, I have different video and audio – but there’s – I have some video there, and I … have forums where they can discuss things with each other but they have an option – making use of all the different course tools available. A lot of features I don't use, sometimes if you have too many things it’s confusing, a couple students said it took them a week or two to get the structure of the course, some of them are really familiar with it as well.

5.5.2.2 Connection

In terms of connection, dialogue between students and students with the instructor was considered. For this dimension of the analytical framework, I addressed support of the development of relationships between students and students with the instructor within the course management system. Specifically, I focused on integration of student experience with academic

inquiry. Evidence of connection was observed through emphasis on discussion and other interactive components of the course such as blogs and wikis (which provide a space for students to integrate personal experience with course content) and direct feedback from the instructor.

There is an introduction forum where students can come together to get to know one another. The instructor referred to it in the interview. In the course observation, the Welcome message for the course directs students to it; the message is complete with pictures of behavioral techniques (such as the time out). The message states: "Welcome to Introduction to Behavior Modification. Please go to the "Introductions" section on the left menu and introduce yourself to the class. Then your classmates and I will know what interests you about this course."

The instructor feedback as part of the course was extensive. In the interview, she states:

> I probably spend eight hours a week reviewing and grading their work. It's labor intensive as far as construction is concerned – everything they do gets responded to individually and graded – it's not like they do the work and I check it against a model, which is what I was encouraged to do because of the work load. I do have models that can look at. This is a class of 20 students and every week there are 60 assignments that I give feedback on – three assignments due every week, I've had students say that they get more feedback from me than they've had in any other class.

This statement was consistent with course observations. For example, the instructor consistently provided feedback in unit class discussions as well as wikis and blogs. Specifically, in the unit class discussion, the instructor writes: "Here are some thoughts I had about your comments. I have excerpted something from each student's contribution." She includes her comments in a different colored font. In the course requirements and grading section of the syllabus, the instructor provides a summary of student expectations in terms of assignments and adds a note about completing discussions in a timely manner in order to gain the most from each forum. She writes:

> Students are required to complete CHAPTER assignments by the date indicated on the schedule. It's important to get these done on time because you will receive feedback and often will have to revise your work before you can move on to the next chapter. You must also contribute to the class UNIT discussion through the blog in a timely way because it's a discussion. If you wait until the last minute and then contribute "just to get it done," it's like going into a classroom after the class is over and shouting to yourself.

In the discussion forums, wikis and blogs, students have an opportunity to incorporate their own personal experience in academic inquiry. The following is an excerpt from a student's post in the unit 2 discussion:

> I know someone that went through AA and has been a member for 14 years and a mentor for 7. One thing member's state is that losing the second most important thing to you is what wakes you up because you realize that the next thing you'll lose is the first most important thing. Jane's second most important thing is probably her liver transplant and her first most important thing is probably her life. Hopefully this will be a wakeup call/fall from grace.

Prior to the conclusion of the interview, the faculty instructor directly speaks to the connection that students feel in her course with the following comment: "at the end of the term, I get lots of feedback from students – I'm glad they've had good experiences I've had many students ask me to write recommendations more than regular classrooms so they are obviously feeling a connection."

5.5.2.3 Collaboration

In the collaboration dimension of the analytical framework, I refer to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online

component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement of students with the teacher. In the online undergraduate female course, evidence of collaboration was found in the use of instructor-written and prepared course evaluations, student choice in assignments and the use of multiple assessments.

The instructor sent e-mails to the class on a regular basis. In an e-mail dated February 19, 2010, entitled: "lots of feedback" the instructor writes the following outlining three separate surveys of student feedback on the course. The first is the mid-term questionnaire that she discussed in the interview. The second is a survey by the University of Pittsburgh's Office of Measurement and Evaluation of Teaching. The third survey is an end-of-term survey. A copy of the e-mail is as follows:

> Behavior Mod. Students,
> You will soon have an opportunity to provide a lot of feedback on this course. In Chapter 6, you will see a mid-term course feedback survey. Please answer the questions and let me know if you have any suggestions. Survey feedback is confidential- your personal identity is not revealed in any way. I will make changes if there is consensus about any problem. I would appreciate it if you would participate before March 1. You will also get a somewhat generic survey in late March from the Office of Measurement and Evaluation of Teaching. It won't be very specific to this course, but the Psychology Department would like to have student surveys of all courses. Last, you will also find an end-of-term survey from me in Unit 5. All surveys are completely confidential. They don't take long to complete, though you are welcome (even encouraged) to take more time to write long, detailed comments!
> [Signed with first name of faculty member]

In terms of references to course evaluation in the interview, the course instructor told me that "I do mid-term evaluations where I ask questions, how are things going – would you make recommendations to make changes, and I did make changes to the course based on that- that was

feedback for me.” In an email from the instructor sent to the class on March 3, 2010 in regard to mid-term feedback, she writes:

> Behavior Mod Students,
>
> Many thanks to all of you who completed the mid-term feedback. Since we don't meet in class, this is the best way for me to hear your complaints and comments. In response to a few comments, I have updated and posted all of the exams for the rest of the term. If you are working ahead, you can now finish the class! Also, I have a new guideline for the exam questions about the Unit videos. These questions will always be on the last chapter exam in the unit. (So, for unit 3, questions about the videos will be on the chapter 14 exam.) I have also posted notes in all of the units and chapters as reminders. I have a few comments about the tedious weekly deadline. In the other online class that I teach in the Fall, we have more chapters than weeks, so the deadline varies-there's one about every five days. Students complain about this, because sometimes it's a Monday, sometimes a Wednesday, etc. It can be confusing. So, I think you can't please everybody. But please remember that if Wednesday doesn't work for you, you can do the work anytime before the deadline and just let me know. How many folks would like some kind of a general discussion board where you could ask questions of each other? Many students e-mail ME questions about assignments as they are working on them, so don't be shy. Last, and this issue is a real thorn in my side, when CGS started developing these online courses, it was shift in structure as well as in technology. In the old CGS/UESP courses, most courses were "self-paced." You purchased the printed materials (yes, actual paper) and then you were mostly on your own for the term. The online Blackboard/Courseweb courses are mostly NOT "self-paced." They are just like being in a classroom with assignments and deadlines, except you don't physically see your teacher. Unfortunately it seems that students may not be well-informed about this, advisors don't really understand, or maybe some materials haven't been updated. I feel bad for students who expect one thing but get another. (Though I may add, in my defense, that the structure of THIS course is obvious from the get-go.) Please let me know if you were misinformed in any way about this being a "self-paced" course, because I would like to address it with CGS (though I won't tell them who kvetched). I will send out another e-mail before the break on a few other items.
> [Signed with first name of faculty member]

In the Unit 5 module, I observed that a section had been added, titled “End-of-term course feedback.” In this section, the instructor asks for student feedback on the course. Included in this area is a survey that contained 24 questions. The survey is copied below and continues to the next page. The items in bold are of particular importance to this analysis:

As you may know, this is only the second time this class has been taught completely online. In designing a course, it's difficult to anticipate everything that the students will experience. I am very willing to change aspects of the course that aren't meeting students' needs. Please use this survey to answer my specific questions and help me to evaluate the positive and negative aspects of the course. Also please add any comments or opinions that you have. I appreciate your help and you can be assured that no identifying information is encoded in this survey.

T/F Overall, I learned a lot about behavior modification as one part of assessment and intervention within the field of clinical psychology.
T/F This course really made me think about behavior in a different way. Occasionally I thought about my own behaviors or the behavior of others in a new way while taking this course.
T/F I monitored or tried to change a behavior of my own while taking this class.
T/F I feel that I got reasonably quick feedback when I had a question or e-mailed the instructor.
T/F I enjoyed reading the "Did You Know" features in each chapter. (Those are the features with the puppy German Shepherd picture at the top of the text box.)
T/F I used the list of important concepts in the chapter Study Halls to help me find important information in the textbook (e.g., to highlight text) or to help me study for exams.
T/ F I used the list of questions in the chapter Study Halls to help me study or prepare for exams.
Essay. Did you feel that the short answer/essay questions on the chapter tests gave you a good opportunity to demonstrate your knowledge, or did you feel that they were repetitive with other aspects of the class, and therefore unnecessary?
Essay. On the mid-term course feedback, most complaints were about the exams. Some students suggested that they would prefer multi-chapter exams at the end of each unit (possibly taken in Alumni Hall, not online) weekly chapter exams with T/F and multiple choice only (10 minute exams)
weekly chapter exams with essay-style questions only (also shorter)
Please tell me if you were reasonably satisfied with the weekly exams, would have preferred (1) - (3) above or some other option.
Essay. Did you find the video clips to be interesting or helpful in providing some clinical context for information in the book?
Essay. The Unit Discussions were introduced to give you a sense of the practice of clinical psychology and to show how important these clinical and ethical issues are in actual practice. Did they achieve these goals? Did you feel that these were reasonably integrated in the class?
Essay. Did you go back and read the instructor's comments on the Unit Discussions after everyone had contributed? If no, why not?
Essay. How much of a connection did you feel you had with the instructor? Would you have liked more feedback? If yes, what would you have liked?
Essay. Did you feel any connection to the other students in the course? Would you have liked to have group projects in which you'd have to collaborate with

other students? Do you have any other suggestions for increasing the sense of having a class with other students in this online format?
Essay. What were your main problems, if any, in sticking to the schedule? Is there something we could add to or change in the course to help with scheduling challenges?
Essay. Did you like following Sue and Blue through the course in the quests?
Essay. Did you think that the Quest assignments helped you understand the concepts that you had to find in the text?
Essay. Did you like getting individual feedback on the quests? Would you have been equally happy with just reviewing the "model" answer from the instructor?
Multiple Choice. How often did you read the **model** of the chapter quest after you received feedback on your own quest? (always or frequently, often, sometimes, almost never or never)
Essay. Did you like developing your client as a person and intervening as a behavioral psychologist?
Essay. Did you feel that the feedback you got from the instructor on your projects reflected how she thought a real clinical intervention with your client might progress?
Essay. When I designed this course, I intended to make the projects a more significant part of the course than the quests. In your answers on the middle-of-term feedback questionnaire, I saw that some students put about the same amount of time into the projects as the quests. Could you tell me about this? For example, I wondered if some students counted the time it took to read the chapter in their "quest time."
Essay. Some comments on the mid-term exams referred to some difficulty understanding the structure of the course at the beginning and also trouble understanding what to say in the projects and how much in-depth to write. Please let me know more about these issues if you had trouble with this and any suggestions.
Essay. I would be glad to hear any other opinions or thoughts you have about this class, especially if you felt like some aspects of the course were repetitive or "busywork."

In addition to the questionnaires posted by the instructor that invited student feedback on the course, she also collaborated with students in knowledge construction in her design of assessments. For example, the project assessment was an ongoing case study where students choose the description of the client they will “assess and treat.” In one course observation, I found the description as follows:

> This is the first of a series of 11 projects that will become part of your behavioral assessment and treatment portfolio. In these projects, you will be working with a simulated client in completing a behavioral assessment and planning an intervention. You will develop a case study for your client whose problems you will describe, assess and treat. This will require some creativity as well as learning and understanding behavioral concepts.

The instructor spoke of the project during the interview:

> I do that (incorporate student's experiences) a lot, their main … project every week is they have three plus things they need to do – the highest proportion of their grade is called a project, on the first week they choose a description of a client or develop their own virtual client, to apply what they've learned– I get them ideas but they're also welcome to pull something out of the air, they have to run it by me so I can say this will be fine for what we're planning to do. But so – I'm sure a lot of them have pulled things from their own experiences

I observed another example of student choice within assignments in the Unit 3 discussion, where students are to choose one situation to address in their post: "Address ONE of the three situations. Think about whether your behavior reflects your own personal standards and/or professional standards and how these are manifest in your choices." Later in the interview, the instructor told me that: "I know a lot of them are doing personal things, thinking about friends, family members – that's a big part of personalizing it for them."

Overall, in terms of the weight and inclusion of multiple assessments in the course, I observed in the syllabus in the "Course Requirements and Grading" section: "Unlike many of your other courses, the exams in this class comprise a SMALL part of your grade. Here are the grading guidelines: Chapter Projects- 40%, Final Project Portfolio- 5%, Chapter Quests- 25%, Unit Discussions- 10%, Chapter Exams- 20%"

The faculty instructor of the course refers to a continued collaboration with students through interaction. She mentions that **"**Emails and blogs [are used to collaborate with students] – I have some students I talk to every few days by email." Also in a course observation, in the syllabus Course Requirements and Grading section, she writes: "You will receive a lot of

feedback to help you improve in the areas that need attention." There are video clips in the presentation sections of the unit file folders. There are also many pictures throughout the course (for example, a picture of a father helping his daughter with homework near a description of how behavioral psychology helps with parenting), a You Tube video showing a dog on a rainy day that is labeled "for fun." All of which are considered to encourage students in being active proponents of their learning.

5.5.2.4 Diversity

The third and final dimension of the analytical framework is diversity. For this dissertation, diversity refers to the instructor's inclusion of multiple perspectives as well as an incorporation of contextual factors such as the consideration of social, political and economic influences. There is an emphasis on diversity and social justice, and an inclusion of many different opinions. For this course, I observed that diversity was integrated through the instructors' interactions with students in the course as well as flexibility in assignments. During the interview, the faculty member discussed how she might incorporate diversity in the future.

In my observations of the course, I found that the instructor's interactions with students encouraged a diversity of opinion and emphasized justice within her online classroom. In the Unit 1 discussion form, the instructor posts the following and goes on to comment on each individual post: "I thought you all had very good ideas about how to deal with this situation." As previously mentioned, she provides copious feedback to students on a regular basis. She also maintains constant interaction and discussion with the students through regular class e-mails and discussion posts and blogs. The following post by the instructor was found in the course blog

area. It summarizes the contributions of individual class members by simply restating their arguments, but does not in any way suppose a correct answer or inflict personal bias on the matter:

> OK, so far we have the following: Maureen, Sarah M and Jillian believe that feelings are behaviors because they are **intertwined** (?) with thoughts, which are behaviors. Breanna is unclear about where the behavior comes in, but believes feelings are triggered by thoughts. Kristin believes you can have feelings without thoughts, but like Breanna, doesn't mention what that implies about whether or not feelings are behaviors. We digress a little here. Nell thinks feelings are only behaviors when you become conscious of them, or, in other words, when they become thoughts. Tiffany continues this line of reasoning by making the argument that feelings are not behaviors, but are antecedents to or consequences of behaviors. **Very interesting.**

In my analysis of the course syllabus, the notion of encouragement of diversity was supported. In the "Hello" section, which was the first section of the syllabus, the instructor provides a note of welcome but also includes a quote on the purpose of a college education by Mark Edmundson (2008). A section of the quote is included here: "A college education is about more than acquiring negotiable skills and knowledge. It's also about figuring out who you are and what you bring to the world." In addition, as was previously mentioned the offering of multiple types of assessment in the course as: Chapter Projects- 40%, Final Project Portfolio- 5%, Chapter Quests- 25%, Unit Discussions- 10%, Chapter Exams- 20%" that was outlined in the course requirements and grading section of the syllabus, presents an opportunity to include multiple types of learners.

When I asked the faculty instructor to what extent she incorporates multiple perspectives into her online classroom, she stated:

> I haven't done it this time but I have a huge stack of professional journals just waiting to be read but I try to pick out culturally sensitive issues coming out in the journals and incorporate those in some of their materials or sometimes I just email them that an interesting study has come out and if you are interested, you can look it up.

To follow, when asked to what extent contextual factors (social, political and economic) factors influence learning in the online classroom, she discussed an example of a recent bill- the mental health bill. She relays that "when things like that happen, they did achieve parity, I let students know about it and why this is important to psychologists" In my course observation, there was at least one evidence of this in the current course that was found in the Unit 4 presentation section, *"**Did you know?** Americans have long turned to others* for guidance, even before Oprah and Dr. Phil first appeared on television. The first advisor available to the country at large gave advice through newspapers." Here, the instructor provides a conceptual link between course content and current and historical events.

5.5.3 Within-Case Analysis: Online Undergraduate

In the online undergraduate case, the Blackboard CMS technology was used to a high degree in terms of the functionality and multiple tools offered within the system. Both instructors heavily used available features, and in the case of the online graduate male course, went outside the Blackboard CMS to support the instructional program. Interestingly, both faculty members had the "lowest" faculty rank in the study. The online undergraduate male instructor was classified as Part-time at the University of Pittsburgh, while the online undergraduate female faculty member was classified as "Instructor."

There were similarities in Blackboard course structure. For example, both offered a section at the beginning of the course on how to proceed through the online format. In the online graduate male course, there was a "How to Complete a Module" file folder, within it, there are seven steps and descriptions of each step related to how to proceed through each module. Each

of the steps is presented under days of the week in order to indicate how students should manage the work for the class during a typical week. In the online undergraduate female course, there was section embedded within the welcome message for the class called: “To take this class.” The components were presented as: “First: Read this page. Next: Review the syllabus, schedule, and technology requirements. Then: Meet the class and introduce yourself in the introductions section of this course. Finally: Follow all the instructions in each unit and chapter.”

Both faculty members connected with students through regular online interactions in the discussion boards as well as respective course blogs. In the online undergraduate female course, the faculty member wrote regular e-mails to her students. While neither instructor used the announcements tool, it was clear that they had instituted other ways of reaching out to their students. For example, the online undergraduate male faculty member offered five different ways to get in touch with him. Both used their first names in regular correspondence with students. In addition, both courses included an introductory discussion forum that was dedicated to getting to know other students in the class. In the case of the online undergraduate female faculty, she provided copious feedback to students.

In terms of collaboration, the online undergraduate male faculty member states that “I keep pushing students to collaborate and the courses are built around the collaborations.” He uses an online format to support student contribution to knowledge construction in the course and as mentioned, goes off of the CMS platform to support his instructional program with course materials on websites and wikis. He stated: “while I use Courseweb, I supplement with my own material hosted on my own domain.” The online undergraduate female course utilized both Wikis and course blog, but did not supplement with external sites in the manner that the online graduate male faculty member did. An important distinction along this dimension was the

inclusion of student feedback questionnaires in the case of the online undergraduate female and subsequent inclusion of that feedback within the course for that term. The online undergraduate male did not incorporate such questionnaires. The online undergraduate female faculty member wrote an e-mail message to her students in reference to the incorporation of feedback gleaned from the mid-term questionnaire:

> Many thanks to all of you who completed the mid-term feedback. Since we don't meet in class, this is the best way for me to hear your complaints and comments. In response to a few comments, I have updated and posted all of the exams for the rest of the term.

The online undergraduate male faculty member discusses an emphasis on diversity and justice and inclusion of consideration of social, political and economic factors in the content of the course. The online undergraduate female course incorporated diversity as defined in the analytical framework with interactions with students, multiple assessments and a plan for future incorporation of diversity as the inclusion of current events and scholarly materials.

6.0 COMPARATIVE CASE ANALYSIS

This dissertation sought to explore gender-related differences in the integration of student-centered pedagogy in instructional technology. In light of that purpose, the research question for this dissertation was formulated so as to "investigate the topic in all its complexity and content" (Bogdan & Biklen, 2007, p.2). It is intentionally broad and as such allowed for the discovery of emerging themes. The research question as presented in chapter 1 is as follow:

> *What happens when male and female faculty use a course management system to present all or part of their instructional programs to students?*

A theoretical framework based on Women's Ways of Knowing and feminist pedagogy guided analysis of data collected from faculty interviews, course observations and content analysis of syllabi. A multiple case study design allows for the study of two or more subjects, which in this study would be the direct comparison of male and female faculty within each context, thereby increasing analytical benefit (Yin, 2003). The design allows for analysis in light of multiple layers of complexity present within each case and captures pedagogical approaches in relation to multi-faceted contexts.

In the previous chapter, a within case analysis was presented with emphasis on the embedded units of analysis (male and female faculty members) in relation to contextual factors defined in this dissertation as type of presentation (online or hybrid) and level of instruction (graduate or undergraduate). Data collected from three sources including faculty interviews,

course observations and document analysis of syllabi were analyzed using an analytical framework developed from the theoretical underpinnings of the study. Similarly, in this chapter, a comparative case analysis will be presented along the three dimensions of the analytical framework: connection, collaboration and diversity.

6.1 CONNECTION

In terms of connection, I considered dialogue between students and students with the instructor. For this dimension of the analytical framework, the support of the development of relationships between students and students with the instructor within the course management system was addressed. Specifically, integration of student's personal experience with academic inquiry was examined. Overall, the degree to which students interacted with one another and with the faculty member of the course along with incorporation of personal experience with academic inquiry was influenced by contextual factors such as level of instruction and type of presentation. Gender differences along this dimension were also influenced by contextual factors.

For the hybrid courses, only one of the four used the discussion board within the Blackboard CMS (hybrid graduate female). While the hybrid graduate female course was the only hybrid to use the discussion board, it was not used to foster dialogue between students, but rather was a space where students posted assignments which were their course reading responses. The instructor of the hybrid graduate female course is then able to use Blackboard as "extra class time," and begin the face-to-face meetings with reference to the reading responses in the discussion board of the class. In a mid-term questionnaire that was posted to the Blackboard course component, the instructor specifically invites feedback from students and asks "are there

changes you'd like to see in the ways that class time is spent or the ways that the discussion board postings are working?" The faculty member later added a course blog as an "open area for any commentary or reflection." Both faculty members of the hybrid graduate courses made a distinction between the face-to-face class meetings and the Blackboard course component. The hybrid graduate male faculty member describes Blackboard as "mechanics, a vehicle" for distributing course materials and collecting assignments. The hybrid graduate female faculty member describes Blackboard as an "accessory to the classroom." For the hybrid undergraduate courses, neither used the discussion board and both described Blackboard as a repository for course materials.

As compared to the hybrid courses, all online courses used the discussion board feature within Blackboard to dialogue with students. In a few courses, other features such as the announcements tool and live chat were used in addition to the discussion board to encourage communication between students and students and the instructor. All online courses included student introduction forums, where students initially (at the beginning of the course) posted their names and typically other information about themselves in order to create community within the class, that was not observed in the hybrid courses. The hybrid graduate male course had a teaching assistant post much of the information within the Blackboard course site, that created another layer of distance between student and instructor. The online graduate female course also had a teaching assistant, but much of the direct feedback within Blackboard came from the faculty member. The online graduate female course included the use of live chat and prior to using this feature, the instructor asked for student feedback about its feasibility while simultaneously gauging student interest. She wrote: "Finally, I wanted to ask for your feedback regarding the potential of scheduling a "live" group chat session midway through the

course." She also includes a "course related questions and comments" discussion forum. Later in the interview she stated that:

> As somebody who has done this, if you have suggestions, I am so open to them. Really, this has been a completely new experience for me, but I also… I don't know what I don't know and so, because I've never taken an online course before, online teaching is somewhat new to my colleagues in this school of nursing, we're all learning as we go.

In the case of the online undergraduate courses, both instructors used multiple tools within Blackboard as well as audio and graphics. For students in the online undergraduate male course, instruction was supplemented with links separate from the Blackboard CMS housed in the instructor's own domain. In the online undergraduate female course, students receive in-depth feedback from the instructor on a regular basis. During the interview, the online undergraduate male said he had a higher level of failure in his online classes as opposed to face-to-face, while the online undergraduate female faculty member discussed students asking her to write recommendations for them more so than in face-to-face classes she has taught explaining further that they are obviously "feeling a connection."

In terms of integration of personal experience and academic inquiry, type of presentation was particularly influential along this dimension. There was a clear difference in the interactive components (i.e. discussion board) used in the two types of courses observed for this study. For the hybrid cases, there was a clear distinction between online and seated class meetings as each of the four instructors explained the manner that Blackboard supports their instructional goals as an "accessory," "mechanics," and "repository." Of those cases, the hybrid graduate female course showed the most evidence of connection online with the inclusion of the discussion board and use of a course blog later in the semester in response to student feedback. On the opposite end of the spectrum, the hybrid undergraduate male did not encourage or foster relationships or

integration of personal experience online citing that “you are vulnerable if you are off topic.” All four of the online courses used the discussion board in their courses and also included an introductory forum for students to have an opportunity to meet one another. The online undergraduate cases used multiple tools in Blackboard and included graphics and audio.

Gender differences along this dimension were observed as well. For example, the hybrid graduate female showed evidence of connection with her students online. For the online cases, the online undergraduate female provided copious and regular feedback to students online and administered multiple assessments on the course to gain a better understanding of student experience of the course. Another difference, that will be re-visited in the following section on collaboration, was that the female faculty members were more likely to engage students in discourse about the course and ask for feedback. Additionally, the hybrid graduate female faculty member was much more likely to engage in electronic mail communication with students. She sent 24 e-mails to students over the course of the term, more than did the hybrid graduate male (1 email), hybrid undergraduate male and female (4 e-mails each).

6.2 COLLABORATION

The collaboration dimension of the analytical framework refers to evidence of democratic construction of knowledge in the classroom, and specific to this dissertation, the online component of the course as the Blackboard CMS. In this regard, students contribute to the learning process through participation. Knowledge construction occurs through the involvement of students with the teacher. Gendered differences were observed in this dimension as female faculty participants were more likely to invite feedback on their courses than were the male

faculty participants. The extent that faculty invited collaboration in their courses was influenced by type of presentation as in the case of the connection dimension described previously. Specifically, the faculty of the online courses more openly discussed their inclusion of students in the learning process through Blackboard, whereas the faculty of the hybrid courses suggested that they did not include students. However, I observed collaboration in course observations of the female faculty of this group. In the cases studied for this dissertation, there was no clear difference between graduate versus undergraduate courses along this dimension. In the syllabus analyses and course observations, collaboration was observed in the design of assignments.

In the hybrid cases, when faculty participants were asked about student involvement in the construction of course content, three of the four answered that they do not include students. The hybrid graduate male faculty member was the only of the four that answered otherwise as he explained the distinction between his face-to-face class meetings and the Blackboard course component. He later describes student involvement in course content in the face-to-face meetings as "trying to draw experiences," in lecture sessions. In the online course component in Blackboard he describes student involvement as a space where he can learn where students need more depth conceptually as in the case where they may "need more scaffolding in this [a particular] area." I observed at least one piece of evidence in regard to the integration of collaboration in the form of assignment in Blackboard. The hybrid graduate female stated that she "mainly" does not include students in the construction of course content but explains that: "I don't usually build in a component for students to generate content in the readings; they are certainly generating content at the level of discussion." In the interview, she also talked about the use of e-mail to provide individual feedback to students in the course. Most notably, there was a mid-term questionnaire added to the Blackboard site in the course during the term. The instructor

used the feedback from this questionnaire to make changes to the course, particularly the addition of a course blog on Blackboard as a result of feedback from students who wanted more interaction from the technology.

In the case of the hybrid undergraduate male, the faculty member purported that he does include students in the construction of course content, but added that he is "not opposed in taking hints and noting student interest." Although after course observation and syllabus analysis, the statement was not supported. When I asked the hybrid undergraduate female faculty member about student involvement in the construction of course content, she stated that "students are not involved in the construction of course content." However, during course observations, I found evidence of collaboration through exams and extra credit assignments. Students were invited to write their own exam questions and were also offered choice in terms of what they would write their extra credit assignment on, an example was observed as: "Analyzing a published scale. Find an example of a scale published in the social science literature that measures something different than the scale being developed by your group." She also stated that she includes students in the learning process through in-class discussion.

In the online cases, the faculty participants discussed in the interview that they were more open to inviting student involvement in the construction of course content, but in the female faculty participant courses found the online format to be stifling, in the sense that material is uploaded prior to the start of the term. The online graduate male faculty member stated that "online is give and take." He adds that his whole pedagogue is "not about teaching facts but the ability to learn." He also discusses an invitation early in the semester to students to comment on topics related to the course content that they may want to learn more about. He relayed that he tells them that he would incorporate their specific interests into the course based on their

feedback, but that the option to do that goes “fairly flat” usually. He also uses group assignments as another way that he incorporates collaboration. He also added the use of Skype broadcast during the course.

In the online graduate female course, the faculty member states that she has not incorporated it as much as she would have liked to in this semester as it was the first time she taught the course but she was planning an open chat session where she hoped she would get feedback from students. She also describes that part of the reason why she had not done that is because the content of the course had to be uploaded in advance of student enrollment. In the online undergraduate male course, the faculty drives at the heart of collaboration as he stated: “It’s important for me to give students a voice. I think it’s really important for students to be heard.” Interestingly, as stated earlier, he talks about his failure rate being higher in the online course as opposed to a face-to-face course because it is the “lowest priority for students.” He provides flexibility in assignments and uses blogs and Wikis to integrate collaboration.

Similar to the online graduate female case, the online undergraduate female talks about the difficulty she experienced in incorporating students in the construction of course content because of the structure of the online course and the need to upload materials prior to meeting the students. She adds that the way that she had included students is such that: “there is content added based on their own feedback.” The faculty instructor of the online undergraduate female course included three separate surveys in order to engage student feedback in the course. In response to the mid-term survey, the instructor made adjustments to the course and summarized them in an e-mail to students. Finally, she provided the students regular and extensive feedback on assignments and discussion posts.

Overall, the involvement of students in the construction of course content and contribution to the learning process varied from course to course based on the gender of the faculty member and course presentation type. Most significant to this study was the observation that the female faculty members were more likely to engage students in dialogue on the course itself, inviting feedback in three of the four cases (hybrid graduate female, online graduate and undergraduate female). While there was no evidence of dialogue on the course structure and content as in the case of the other three female courses studied, the hybrid undergraduate female course showed evidence of collaboration in the design of assignments for the course. In terms of hybrid versus online presentation, the faculty participants of the online courses discussed being more open to the involvement of students in the construction of course content through the use of more of the available collaborative features in the Blackboard CMS. It was noted by the two female faculty of the online courses that their ability to include students in the manner described along this dimension was difficult because course materials are uploaded prior to student enrollment in the course despite the fact that they both incorporated student feedback into their respective courses.

6.3 DIVERSITY

The third and final dimension of the analytical framework developed for this dissertation is diversity. Diversity refers to the instructor's inclusion of multiple perspectives as well as an incorporation of contextual factors such as the consideration of social, political and economic influences. There is an emphasis on diversity and social justice, and an inclusion of many

different opinions. Each participant answered that their incorporation of multiple perspectives and consideration of contextual factors was a part of the content matter of the course. In several cases, the faculty members cited the course readings as an example of the way that multiple perspectives and social, political, and economic influences were integrated. While each cited course content as the manner in which this dimension was considered, there were nuances between cases that emerged that are presented in this section.

For the hybrid graduate male course, the faculty member made a clear distinction between the face-to-face course meetings and the Blackboard course component. When initially asked about his incorporation of multiple perspectives in the online classroom, he answered: "I don't really use Blackboard for that. That's not the Blackboard component." He then later explained how he incorporates multiple perspectives in his face-to-face class meetings through debate on various course topics. He later states that "some learning has to come from them talking to each other." In terms of the extent to which contextual factors influence learning in the online classroom, he again describes a distinction between online and seated class as he discusses "[in the] classroom though really, I can go much broader about bringing context because I have students in backgrounds from many different places." In this case, he is referring to face-to-face discussion in class.

Similarly in the hybrid graduate female course, the faculty member makes a distinction between online and seated class for this dimension as she states "I have a little trouble with the online classroom metaphor- it's not how I think of it, I think of it as an accessory to the classroom." She talks about her incorporation of multiple perspectives as they are reflected in reading assignments: "the readings are written from multiple perspectives." Adding that "I presume that the subject matter would generate a range of opinions and that's been the case." As

opposed to the hybrid graduate male faculty member, she talks about how mid-term questionnaires that provided her directly with student feedback have helped her in this specific area. She mentions that "because people have very strong personal stakes in their opinions has made me weary about whose opinions would be challenged. I feel the questionnaires gave me a sense, there's a fairly friendly trusting relationship and that people will not take it personally if I have them pinned down." She also makes a distinction between how this dimension is affected by course level, graduate versus undergraduate courses as she states that:

> Well, the thing about a graduate course, there's a way in which everybody in graduate school is already academically successful in a way that not everyone in an undergraduate course would be so I guess I feel as though some of the factors especially as they affect students willingness to participate or their comfort with certain kinds of discussion, is much more sensitive in undergraduate versus graduate courses.

In the hybrid undergraduate cases, there was also discussion of how the content of the course lends itself to an incorporation of multiple perspectives and consideration of social, political, and economic influences. Similar to the hybrid graduate courses, there was a distinction between the online course component in Blackboard and face-to-face course meetings. This distinction was supported by course observations. As stated in chapter 5, these two courses minimally used the Blackboard platform, as each faculty member described it as a repository resource for course materials. When asked about his inclusion of various opinions in course content, the hybrid undergraduate male faculty member responded that he is "big on that." He later explains that one way he does that is through "careful selection of the textbook that has a very broad disciplinary range." In terms of the consideration of contextual factors, he first made clear that he "make(s) minimal use of Blackboard." He later tells me that "you're really vulnerable of you're no longer on subject." In the interview, it became clear that he does not interact with students. When asked how she incorporates multiple perspectives in her online

classroom, the hybrid undergraduate female faculty member states that “during class discussion, I encourage questions and comments,” that clearly distinguishes online and seated class. She later states that “we discuss issues of bias and testing and how these have been addressed at different historical periods.”

Similar to the faculty of the hybrid courses, the online course faculty stated that the primary way that multiple perspectives and contextual factors are incorporated into their instructional programs is through course content. In the case of the online graduate courses, while both cited course content in their discussion of diversity, the online graduate female relayed that she was unable to incorporate multiple perspectives in the online presentation as she would in her face-to-face classes because the content needs to be in place on Blackboard before the students are enrolled in the class. She later talks about her plans to elicit feedback from the students as she states, “what I do plan to do is schedule a voluntary, open chat session so that students can meet one another by voice.” She later adds that “I’m hoping I get adequate feedback from them.” In the online undergraduate courses, course content is again discussed as the means in which the faculty integrate multiple perspectives and contextual factors. However, the online undergraduate female discusses plans for the way that she will integrate multiple perspectives in the future through incorporating culturally sensitive issues from current literature in the field. The faculty member of the online undergraduate male course states that “it’s important for me to give students a voice. I think it’s really important for students to be heard.” He explains that he gives credit for blogging because it’s “important to give students credit for everything they do.”

Overall, it was apparent that all faculty participants thought that their course content was the primary means that they incorporated multiple perspectives and contextual factors. The faculty of the hybrid courses made distinction between their online and seated class in their

discussion of diversity eluding that they did more of this work in the face-to-face class than online. The female faculty of the online courses described the online format as a challenge in this regard as the content has to be uploaded in advance of student enrollment in the course eluding to the fact that current events are more easily incorporated into the face-to-face setting.

6.4 COMPARATIVE CASE ANALYSIS SUMMARY

In order to summarize the presentation of the comparative case analysis, a matrix is included as table 6 below. Table 6 presents the three dimensions of the analytical framework and includes a brief summary of speculative results for each course.

Table 6. Comparative Case Analysis Summary Matrix

	Connection	Collaboration	Diversity
Male			
Hybrid Graduate	More "connected" in seated class, Bbd[5] is for information dissemination, no discussion board.	Distinction between Bbd and seated class, draws student experiences in lectures.	Distinction between Bbd and seated class, course content supports diversity.
Hybrid Undergraduate	Does not encourage or foster relationships/ integration of personal experience.	Does not tailor context of the course for students.	Selection of course text supports diversity.
Online Graduate	Discussion is encouraged, TA posts information in Blackboard.	Assignments support collaboration, Skype broadcast added.	Course content supports diversity, encourages students to develop opinions.
Online Undergraduate	Discussion participation, provides five ways to get in touch with him, graphics used.	Online collaboration at core of pedagogy, wiki-based courses, goes off of Bbd to supplement instruction.	Course content supports diversity.
Female			
Hybrid Graduate	Bbd helps with formation of community. Primary dialogue is F2F[6], Course blog was added.	Students do not generate content, student contribution at level of discussion participation, mid-term questionnaire.	Course content (readings) support diversity reinforced in class discussion.
Hybrid Undergraduate	Distinction between online and seated class, E-mails students, Group work on assignments.	Faculty says students not included, but students are invited to construct test questions.	Distinction between online and seated class, course content supports diversity (in-class discussion only).
Online Graduate	Discussion board, student intro forum with pictures, Live voice chat used.	Assignments invite students to choose topics, Wikis used.	Course content supports diversity, difficulty in online course format.
Online Undergraduate	Discussion participation and	Includes mid-term and end of course	Course content supports diversity,

[5] Blackboard Course Management System

[6] Face-to-Face class meetings

	copious feedback from the instructor, students ask for letters of recommendation.	evaluations to students. Students can personalize their assignments.	plans to include current literature in the future.

7.0 CONCLUSION

This dissertation concludes with a review of the study followed by a discussion of insights (speculative results) and research and practice implications. The insights presented in this chapter arose from the within and comparative case inquiry detailed in chapters 5 and 6. The final section on research and practice implications focuses on the insight that this study may provide not only to other research studies in this area but also integration into practice in institutions of higher education.

7.1 STUDY OVERVIEW

This dissertation sought to explore gender-related differences in the integration of student-centered pedagogy in the use of a course management system. A comparative case study research design grounded in a theoretical framework based on Women's Ways of Knowing and feminist pedagogy guided analysis of data collected from faculty interviews, course observations, and content analysis of syllabi. This topic was developed after conclusion of a pilot study on course design of instructional programs in the Blackboard course management system at the University of Pittsburgh. The pilot study focused on faculty use of Blackboard, specifically use of syllabus and courses templates- items pre-populated in a Blackboard course shell that provide faculty course developers with a way to organize their instructional program. The

syllabus and course template components listed in Table 1 are viewed as items (documents) on the Blackboard system, each item allows faculty to insert information appropriate for each component. The results of the pilot study suggested that faculty are not widely using the syllabus and course templates as originally developed, but did incorporate many components in varied forms. The results indicated the wide-ranging uses of the Blackboard CMS at the University of Pittsburgh. In addition, the pilot study evaluated faculty use of documents and tools in Blackboard. The results of the study showed primarily, Microsoft Word documents were uploaded to the course site, followed by Microsoft PowerPoint presentations, graphics, and PDFs. Overall, the use of Blackboard tools such as discussion board, survey, and exams or quizzes was low. The pilot study inspired this dissertation, that was designed to further explore why and how faculty are using the Blackboard CMS technology and whether or not gendered differences exist in the use of this technology.

The use of technology for instruction continues to increase and is playing a more significant role in higher education (DeAngelo et al., 2009). As instructional technology has become a more integral part of college and university teaching, researchers have noted gender-related differences in regard to faculty approach, perception, and implementation of technology (Campbell & Varnhagen, 2002). Research investigating traditional classroom settings has suggested that female faculty have historically shown a stronger preference for student-centered pedagogy as compared to male faculty (e.g., Lammers & Murphy, 2002; Statham-Macke, 1980). This study focuses on gendered pedagogical preferences and how they translate into use of and approach to instructional technology in higher education, and for this dissertation the Blackboard course management system.

Case studies provide a "detailed examination" of a setting or subject, making them an ideal research strategy for this study (Bogdan & Biklen, 2007, p. 59). A multiple-case study design is most fitting because it allows for the study of two or more subjects (in this study direct comparison of male and female faculty within each context). Multiple case studies also increase the analytical benefit as data obtained from studies employing the design are considered more compelling (Yin, 2003). A multiple case study design with embedded units of analysis allows for consideration of each individual unit in relation to "contextual conditions." In this dissertation, the individual (embedded) unit is the faculty instructor (male or female) of a specific course (the case) and contextual elements are identified as: (a) online course presentation; defined as either strictly online (the entire instructional program is presented on Blackboard) or hybrid (a course management system is used to supplement face to face instruction) and (b) level of instruction; defined as either graduate or undergraduate courses. Four cases were defined as Case Study 1: Hybrid graduate (male and female), Case Study 2: Hybrid undergraduate (male and female), Case Study 3: Online graduate (male and female) and Case Study 4: Online undergraduate (male and female).

The University of Pittsburgh provided a rich context for the conduct of this study because of its history and rate of growth of faculty adoption of course management system technology. The institution adopted the Blackboard CMS for faculty course developers in 1999 and has grown at a rate of 30% per year at the University (Laudato, personal communication, June 6, 2006). As of fall 2010, there were 3,833 Course Web sections offered at the University of Pittsburgh that included 56% of faculty and 87% of students (University of Pittsburgh, 2011d).

Chapter 1 of this dissertation included an introduction and statement of the problem. Chapter 2 presented a review of literature and Chapter 3 presented the theoretical framework.

Chapter 4 described the research design. This chapter also included the analytical framework derived from the theoretical underpinnings of the study that guided analysis along three dimensions: connection, collaboration and diversity (Table 3). The within-case analysis in Chapter 5 presented a detailed account of the Blackboard course structure for each of the eight courses selected for the study followed by a discussion of the three themes of the analytical framework considering data collected for each. The across-case analysis presented in Chapter 6 compared the four cases along the dimensions of the analytical framework concluding with a comparative case analysis summary matrix in Table 6. This concluding Chapter 7 details the speculative results that emerged from the analysis presented in Chapter 5 and 6. The chapter concludes with research and practice implications as well as a critique of the study.

7.2 INSIGHTS GLEANED FROM STUDY

This dissertation sought to investigate gender-related differences in the integration of student-centered pedagogy in the use of a course management system. In light of that purpose, the research question for this study as presented in Chapter 1 is: *What happens when male and female faculty use a course management system to present all or part of their instructional programs to students?* The speculative results of a comparative case analysis along three dimensions of an analytical framework derived from the theoretical underpinnings of the study produced the insights included in this section that serve to address the research question. Cases were selected so as to consider the contextual factors to glean a more comprehensive

understanding of the topic and commonalities among cases were considered and compared along thematic lines.

Overall, insights gained from this study may suggest that female faculty participants were more likely to engage students in dialogue about the course and invite feedback. In addition, contextual factors such as level of instruction (graduate versus undergraduate) and particularly, type of presentation (hybrid versus online) may influence gendered student-centered pedagogical approaches to the use of Blackboard.

7.2.1 Engagement of students in discourse about course structure and content

I observed that female faculty participants may be more likely to engage students in dialogue about the course and invite feedback after observation of the courses in my study. Specifically, all four of the courses taught by female faculty in this study encouraged a democratic construction of knowledge through engaging students in discourse about course structure or content. For example, in the hybrid graduate female course, the faculty member distributed a midterm questionnaire by making it available for download from the course navigation menu. The questionnaire asked students for their suggestions and input into the structure of the course. She was also the only faculty of the four hybrid courses to use the discussion board. While the hybrid undergraduate female faculty member purported that she did not engage in dialogue with students as to the structure of the course, I found support in course observation of knowledge construction through contribution of students with the teacher. For example, students were invited to write their own test questions. As part of an extra credit assignment, they were invited to choose the topic of their interest from the literature in which to complete their work.

In the online graduate female course, I again observed an effort to elicit student feedback with discussion of student feedback in the form of a mid-term chat session. She first asked for feedback on the inclusion of the mid-term chat session in an announcement posted in the first week of the course. She also invited feedback from me in the interview on use of instructional technology at the conclusion of the interview schedule. For the online undergraduate female, there were three separate evaluations included in the course. Two were written and distributed by the faculty member and one by the University. Conversely, in the courses taught by male faculty, I did not see any questionnaires or surveys that directly invited student feedback in the same manner that was described and observed by the courses taught by female faculty. This notion was supported by literature suggesting that females were found to prefer collaboration in the classroom (Weber & Custer, 2005; Chapman, 2000; Fiore, 1999).

7.2.2 Formation of an online community

In my study of the each of the eight courses, there seemed to be a notable emphasis on student-student and student-instructor interaction within the Blackboard CMS in the courses taught by female faculty. However, it became apparent to me that the formation of online community was also affected by contextual factors, particularly type of presentation (online versus hybrid). I considered that the use of the discussion board in Blackboard suggested an effort to build community as students interacted with each other and with the instructor through the use of this tool. This notion was echoed in an article I discussed earlier by Chick & Hassel, 2009. The discussion board was used in all four of the online courses and one of the four hybrid courses. The only hybrid course to include a discussion board was the hybrid graduate female course. In addition, she added a course blog during the semester as a result of student feedback to have

more interaction with classmates online. The instructor of the hybrid graduate female course described how she used the discussion board posts to enhance face-to-face class meetings. She relayed in the interview to me that students may take on certain personas in class that may affect their contribution to face-to-face discussion, suggesting that community building within the class is strengthened by online discussion, where students may feel more comfortable sharing their ideas. This phenomenon echoed Campbell's (2003) observations from designing social learning communities. In her study, Campbell found that female faculty reported that their use of the online discussion forums resulted in conversations that were more in-depth than face-to-face classroom discussions as a result of students' increased willingness to share their personal experiences.

Several hybrid course instructors reported that they encouraged discussion and student interactions in their face-to-face classroom, but only the hybrid graduate female course exhibited an effort to enhance discussion with online interaction. On the opposite end of the spectrum, the hybrid undergraduate male suggested that he did not initiate dialogue between students or consider students' personal experiences either face-to-face or online. I believe that this may suggest that female faculty prefer course design that encourages interaction between students and students with the faculty member. The contrast between the pedagogical preference of the hybrid undergraduate male and the hybrid graduate female was also reflected in the literature that female instructors may have a stronger proclivity for student-centered approaches such as discussion as opposed to lecturing (Wigfall, 2010; Zhou and Xu, 2007).

I also observed that the discussion board was used in all of the online courses. Each online course also included an introductory discussion board where students could "meet" each other. However, instructor involvement varied from course to course. In some cases, it was used

for community building, in others it was used for assignments. In the online graduate male course, the teaching assistant for the course posted information to students in discussion boards, I believe this added even more distance between faculty and student. Particularly in a forum called "Course Q & A," a forum that was set up for students to ask questions about the course in regard to the "technical, organizational or in clarification of points raised in class or in other forums," the teaching assistant, not the instructor, interacted with students online. The teaching assistant reported information from the instructor, even stating as much in one post. The online undergraduate male instructor offered five different ways for students to contact him. In the discussion board, there is some evidence of direct interaction with students. He responded to posts but not as frequently as the online graduate and undergraduate female courses. In the online female courses, each faculty member responded to each student response, often addressing the students by name. While the online undergraduate male faculty member participated in the discussion board, he did not respond to each student post.

Both online female courses also included an effort to welcome students with a welcome banner in the online graduate female course and a welcome message in the online undergraduate female course. In the online graduate female course, the instructor frequently posted announcements that are signed off with her first name. In the discussion forums, she responded to students through addressing them by first name. She also used summary posts where she reflected on the posts of several students and included questions on their response or content that challenged them to think more deeply about the given topic. In the online undergraduate female course, the instructor frequently interacted with students providing them with feedback. She not only responded frequently in the discussion board but to assignments as well. The faculty instructor mentioned her use of copious feedback in the interview. It is my contention that all of

these instances taken together, as observed in the online female courses may suggest the development of community because they demonstrate interaction between students and students with the instructor.

The notion that female faculty may be more likely to build community through use of the course management system technology for community building was supported in the literature. In their study, Woods, Baker and Hopper (2004) found that female faculty were more likely to use Blackboard for community building than male faculty. This study also provided support of the manner in which the hybrid course faculty instructors were incorporating the technology as they found that faculty used the technology in this type of instructional format, primarily to post course documents and materials (Woods, Baker, & Hopper, 2004).

7.2.3 Integration of student experiences with online course content

After reflection on the interviews, syllabi and observations, it seemed to me that the use of technology to integrate student experiences in assignments in the course may be more likely to occur in online courses taught by female faculty. The following examples show that there was a concerted effort on the part of the instructor to integrate student experiences through the intentional design of assignments. Specifically, in the online graduate female course, many of the assignments required students to reflect upon their own professional experiences. The online undergraduate female course required a semester long project where the students develop as a virtual client and apply what they have learned each week in the context of treating the client. In reference to this particular assignment, the course instructor relayed in the interview that students personalized this assignment by referring to or including situations from their personal life. The

use of this type of assignment was discussed by Chick & Hassel, 2009 as one way to apply feminist pedagogy to an online course.

In the online male case, students were frequently asked for their opinion on various course concepts, but were not typically invited to include their experience in the manner that was integrated in the online courses taught by female faculty. For example, in the online graduate male course, discussion questions were posed on Blackboard for students to consider course concepts and synthesize the topic with their own research. In the online undergraduate male course, students were often asked about their opinions and reactions to popular media (in this case, television shows). I believe that this only further supports the speculative result that online female faculty were more likely to use technology to integrate student experiences as the online male faculty invited student opinion in online assignments, not student backgrounds and contexts.

Conversely, in the hybrid courses, faculty distinguished between online and seated class in that their inclusion of student experience is integrated in face-to-face meetings, not online. In the hybrid graduate male and female courses, the faculty instructors discussed the inclusion of student discussion in class as the manner in which student experience was incorporated in the class. The hybrid undergraduate female instructor reported that she does not incorporate student experiences in her online teaching. In the hybrid undergraduate male case, the instructor stated that he did not include student experiences at all as part of his instructional program either online or face-to-face. I propose that possible explanations might be a reluctance to use the media for this purpose or differences in pedagogical preferences as a result of the differences in type of course and specific aims of each.

The differences that I observed in this study between online and hybrid courses in terms of interaction between students and students and faculty is explained by the online course faculty member's reliance upon the CMS as the primary medium through which they interact with their students. In terms of integration of student experience with course content online, the online faculty do not have other opportunities to interact with students as do the hybrid faculty so must make an effort to do so within the CMS. As Picciano (2002) states, "the success of many online courses is dependent upon the nature of student to student and student to faculty interaction" (p. 33). While all online classes did use interactive functionalities of the technology, I believe that it was only the online female faculty that showed a proclivity to integrate student experiences with course content online through design of assignments and interactions in the discussion board in this study.

7.2.4 Integration of diversity and social, political and economic factors online

All eight participants commented that the inclusion of multiple perspectives and consideration of social, economic and political factors was incorporated through the content of their courses. However, I noticed that only the online female faculty found their ability to integrate current events online and in "real time" challenging. They explained to me that this is because content is uploaded in advance of the start of the term. It became apparent to me that the contextual factors that I considered - particularly presentation type (online versus hybrid) – may be important in a consideration of gendered differences in faculty perception of the ability to incorporate this dimension in their class. Specifically, online female faculty reported that it was difficult to incorporate events that "have evolved into their content," relaying that it was more challenging to incorporate current external influences because content was uploaded prior to the start of the

semester. The online graduate female faculty member captured this notion, stating: “I have not found it easy to bring that day-to-day [information] into the course because [content] is already established [in advance of student enrollment in the course] and students are working at different paces.” The online undergraduate female faculty instructor similarly talked about how she will better include external current factors including social, political and economic influences, in the future through incorporating new and relevant literature in the field in course materials.

It is my belief that the online female faculty participants’ reaction and response to integrating current context online suggests that they were continually reflective of their online instructional program. In each interview, there was reference and comparison to face-to-face class as well as a discussion of how they will move forward in future courses. The speculative result that female faculty may be more critically reflective is also supported, in my observation, by previously discussed findings in this study, especially that female faculty were more likely to invite student feedback and contribution to their course. These findings supported a study done by Campbell (2002). After having uncovered trends that demonstrated a difference between male and female faculty member’s approach to teaching online, she comments that in the interviews with female faculty, they were “always critically reflective” of their instructional programs (p.36). I also surmise that a continued reflection of the course may lead to a more student-centered approach to online instruction.

Among the hybrid cases, there seemed to be a distinction between the online and seated class in regard to the faculty participant’s perceived inclusion of multiple perspectives and consideration of social, political and economic influences. For example, the hybrid graduate male stated: “I don’t use Blackboard for that [incorporation of multiple perspectives]; that’s not the Blackboard component.” The hybrid undergraduate female faculty member stated: “during

class discussion, I encourage questions and comments." I believe that this observation reflects a difference between online and hybrid presentations and a distinction between the online course component and face-to-face class meetings for hybrid cases. Although online female faculty appeared to be more critically reflective as a result of their discussion of the manner that they include diversity in their instructional program, context was an important influence across cases.

7.2.5 Student-centeredness and the use of technologic functionalities

I found that the online undergraduate faculty used the most features in Blackboard as compared to the faculty of the online graduate and hybrid cases. Specifically, the faculty of the online undergraduate case used graphics, video, and audio in addition to Blackboard tools such as discussion board, wikis, and blogs. A consideration of interface design- the presentation of the course on the web including the use of graphics and color is important in the discussion of student-centered approaches to online teaching (Gillani, 2000). The online undergraduate female used the most functions of all the faculty members participating in the study. She used graphics frequently throughout the multiple levels of her course to highlight discussion concepts. For example, in the introduction to unit 1, she included in the discussion of behavior an example of a teenager yelling at her parents. Beside the text, there is a picture of a young girl who is obviously yelling. In another example, next to the posting of the "quest" assignment, she included a picture of a knight riding a horse holding a flag. These types of graphics were used throughout the course. She also incorporated the use of audio and video in the presentation sections of each unit. In the unit 5 presentation, she used a series of short video segments to introduce behavioral interventions, the major concepts of that particular section of the course. In summary, she used the most technological capabilities within Blackboard of any in this study, suggesting that she

used as many tools as possible to achieve a student-centered course so as to appeal to many types of learners.

I observed that the online undergraduate male faculty participant also used graphics in his course, including an old-fashioned recording device embedded as a course banner as you enter the Blackboard site. He used audio and video in the lecture sections of each module. The use of audio and video as part of the visual communication presentation integrated into the interface design is considered student-centered because it "appeals" to students and is considered "responsive" (Gillani, 2000, p 174). In addition, the online undergraduate courses in this study served traditional aged college students who have grown up with technology. The faculty member's use of the more sophisticated capabilities of Blackboard may provide this type of student with a sense of familiarity. This speculative result or insight might also be the result of the idea that those faculty selected for those particularly cases were more skilled in the use of technology for teaching. Interestingly, the faculty of the online undergraduate case were the lowest ranked of the study (part-time faculty and instructor).

7.2.6 Student-centeredness and online course communications

After careful consideration of all the data, I found that the online undergraduate female faculty of this study had the most interaction with students online. For example, she not only frequently posted responses in the discussion board, and provided regular feedback to assignments, but also regularly used electronic mail. She sent 51 e-mails to her students over the course of the term, more than any other faculty member of this study. In terms of e-mail usage as a means to communicate with students, the hybrid graduate female participant sent 24 e-mails to students over the semester. Exactly four e-mails each were sent by the faculty of the hybrid undergraduate

case. The online graduate female sent 3 e-mails over the course of the term. One e-mail was sent by the hybrid graduate male faculty participant. No e-mails were sent by the online graduate male faculty member, though 2 e-mails were sent to his students by the teaching assistant for the course. No e-mails were sent by the male faculty participant of the online undergraduate case. It is worth noting that I was not able to access e-mails sent to individual students, only those e-mails sent to the class by the instructor. Therefore, it is possible that those faculty who did not send any group e-mails were communicating with students on a one-on-one basis.

Overall, the varied use of e-mail that I found in this study may provide insight into not only the wide-ranging uses of CMS technology to interact and present instruction to students, but also the use of student-centered approaches to instructional technology. In terms of community development and supporting students, Haythornthwaite et al. (2004) describe the use of "multiple means of communication" in the context of an online course so as to "sustain group interaction" and support a student-centered approach to teaching and learning through the engagement of students in "class, task, social, support, emotional and intellectual exchanges" (p.53). In this regard, the online female faculty participant in this study used multiple tools to communicate with her students including e-mail as well as discussion and blog tools as previously noted.

7.3 INTERPRETIVE INSIGHTS

After considering the narratives of the eight faculty participants of this study as well as course observation and document analysis, it seemed to me that the female faculty participants of this study were more likely to invite student feedback on their course. I believe that this notion of

engaging students in the construction of the online component of the course may suggest that female faculty are more critically reflective of their instructional program online and may be more responsive to the needs of students. In addition, female faculty of this study were more likely to encourage the formation of an online community. The encouragement of student-student, student-content and student-faculty interaction is considered to be more student-centered because it encourages a democratic construction of knowledge. While there were differences based on the context of each course, female faculty were found to be more likely to use multiple ways to interact with students and offer their feedback and support. The integration of student experiences with course content and use of technologic functions resulted in intentional personalization of the course for students.

Type of presentation (online versus hybrid) and level of instruction (graduate versus undergraduate) may affect student-centered instructional approaches to the Blackboard CMS as I observed in this study. The online faculty used the technology more heavily than did the faculty teaching face-to-face, this is likely a function of the goals of the respective types of instructional programs. Perhaps this speculative result is a direct function of the fact that the online faculty are presenting their entire instructional program online while the faculty of the hybrid courses are able to do much of the work face-to-face. The graduate courses in general, were more likely to include student discussion leading to a more democratic construction of knowledge, a testament to a spirit of that type of course. This idea was discussed in the interview by the hybrid graduate female who shared that students in a graduate course are typically academically successful and not as sensitive to various issues that may have to be considered in an undergraduate course that enable deeper discussion of content.

7.4 RESEARCH AND PRACTICE IMPLICATIONS

This section presents both future research and proposed practice implications. Research implications stemming from this work can be organized into the following streams of inquiry: gendered differences in approach to instructional technology and student-centered pedagogy as applied to instructional technology. Practice implications include suggestions on how this work translates to faculty training programs. It also suggests changes to the structuring of the Blackboard course software.

This dissertation elicits future study in both gendered and student-centered approaches to instructional technology. Future research in this area might include a consideration of the extent that discipline affects gendered approaches to the use of instructional technology. This work included a variety of courses from multiple disciplines but did not focus on it as a contextual factor. In addition, this study yielded data that suggested that type of presentation may influence the manner in which a faculty member approached their instructional program, a notion that warrants deeper study. Future research may also be considered on the effect of faculty rank on the use of and approach to instructional technology. Outcomes from this study suggested that more junior faculty are using more of the available features within the technology. In terms of student-centered approaches to technology, more research is needed in terms of the manner in which online learning is developed to encourage student participation in the learning process.

In terms of practice implications, this study suggested faculty perceptions of instructional technology- specifically the Blackboard course management system- in both hybrid and online cases that may be translated into practice in institutions of higher education. These suggestions may be included as part of faculty training programs or development of the structure of the technology. Three of the four faculty of the hybrid courses (hybrid graduate male, hybrid

undergraduate male and female) expressed that Blackboard served as merely a repository resource for materials distributed in class. One possible translation of this information to practice might be in the incorporation or emphasis on additional functionalities in the Blackboard CMS for those faculty teaching hybrid courses. For example, institutions may integrate training programs for faculty that meet their needs and technical abilities to help them to use the technology to its fullest capability to support their instructional program. This notion is supported by Wilson (2003) in that: "more should be done, however, to incorporate technology more fully into the learning process, especially the pedagogical side" (p. 61).

Faculty presenting their instructional programs entirely online also provided insight into both institutional infrastructure and potential improvements in the Blackboard CMS. The amount of time it takes to transfer course materials to an entirely online class presentation is time consuming as indicated by the online undergraduate faculty member: "I can say that developing this course and the other I teach is incredibly labor intensive, they are having trouble having faculty do online course development because it is a huge amount of work, everything you do is up front." This comment supported Wilson's (2003) suggestion that institutions of higher education should incorporate "innovative ways to recognize and reward faculty for their successful use of technology" (p.62).

In terms of changes to the infrastructure of Blackboard, multiple faculty commented on their own personal issues with the system and the way that they would improve upon it. Particularly, the online male case desired more flexibility. The online undergraduate faculty member relayed his desire to include more interactive elements and in fact, went off of the Blackboard CMS to present his entirely online instructional program to students. He speaks to

the uniqueness of the medium and inability to duplicate the in-class experience, touting the need for changes in the technology:

> Blackboard is old school, it tries to duplicate the classroom experience and I'm sorry, you can't. Online is not the same as face to face. You are crossing media and ramming a square peg into a [round] hole, teaching online requires collaboration, and freedom and the ability to get in there and get their hands dirty. They build these CMSs to restrict student access, to restrict what students can do, it's all about building restrictions and putting people and information into boxes and tying them down, restricting their ability to do things because what they are trying to do is duplicate classrooms.

Just as one participant of this study demonstrated above, faculty do have important feedback to offer in regard to improving course management system technology and its use in higher education. This statement also provides insight into the use of the CMS in preparation and design of a student-centered instructional program particularly, in his discussion of collaborative features. The willingness of many of the participants of this study to discuss their use of Blackboard and how it may be improved provides insight for institutions of higher education, particularly, the tremendous opportunity for technology to play an even more integral role in instructional programs through the involvement of faculty. Specifically, it may translate to faculty development programs and infrastructure changes in the CMS.

8.0 A REFLECTION ON THE DISSERTATION PROCESS: CRITIQUE OF RESEARCH DESIGN

This dissertation captures my transition from a positivistic to interpretivistic research tradition. My work represents movement to interpretivism, rather than complete immersion, a direct reflection of where I am in my development as a researcher. I was drawn to shift to this type of inquiry because of its ability to "understand and explain human and social reality," which I believed to be critical to the study of gendered differences in student-centered pedagogical approaches to instructional technology (Crotty, 1998, p. 66-67). The purpose of my study was to seek insight into how men and women use instructional technology, in this case Blackboard, to convey their instructional programs to their students which could not be considered appropriately in a positivistic tradition. More deeply, the transition to interpretivism was a result of an innate shift in my understanding of what it means to understand. I moved from accepting the notion that an objective reality can be known to being more open to a deeper understanding of human reality in relation to unique situational contexts. This transition has been informed by my background as well as reflection on my worldview which are considered to follow.

My education and professional endeavors thus far have been primarily focused in biology, a discipline in the natural sciences. I continue to teach biology at the collegiate level both in person and online, an important aspect of situating myself in the study, a point that was addressed in chapter 4. I have been deeply grounded in a scientific tradition through learning and

teaching in the natural sciences. The consideration of transition to a qualitative mode of inquiry for use in my dissertation came after having been introduced to this type of research during doctoral course work. An introduction and study of interpretive inquiry as part of my dissertation journey has fundamentally changed what I think and do and therefore, how I approach teaching. For example, I now begin my lecture courses in science with an introduction that relays to students that science, as we learn in my course, is just one way of knowing and understanding phenomena, a notion that I had previously not considered, let alone incorporated into my instructional program. My background and training is also reflected in my dissertation in regards to the language used throughout.

In terms of a consideration of worldview, Piantanida & Garman (2009) define this term as comprised "for research purposes the most relevant beliefs" of epistemology (what is true), ontology (what is real), and axiology (what is valuable) (p.46). One possible qualitative epistemology is feminist epistemology, which I have included as part of the theoretical frame of my study and to which I identify. Crotty (1998) explains that the definition of feminist epistemology can be problematic, but may be thought of as arising from a shared belief and valuing of equality for woman that then translates into a way of conducting research that incorporates this perspective. I believe that women and men have the tendency to do things differently as a result of the way they have been socialized. There have been several events in my own life that have drawn me to feminism as scholarly work and school of thought. Early events drawing me to this perspective took place as an undergraduate student enrolled in an elective in Women's Studies, which introduced me to the theory that seemed to explain what I was experiencing. This theory-enlightened experience was further cultivated by personal narratives of female students joining together as a group of "survivors" in the Women's Center at our

university. Ontologically, in terms of this study, I believe that the experience of each faculty member with an instructional media in the form of a course management system is based on their representation in course observation, syllabus content and narrative communication. Axiologically, their experiences are dependent upon the differences in contextual factors, which were defined in this study as type of presentation (online or hybrid) and level of instruction (graduate or undergraduate).

A challenging, yet significant part of this process was identifying and defining myself as an instrument of inquiry which at first, I could not concede because I initially lacked the confidence to do so. This echoes the process through which I selected the theoretical framework for this dissertation, that of coming to recognize myself as someone capable of sharing and contributing to the field of education through interpreting meaning and conveying that meaning through writing. This is a theme that is echoed in Women's Ways of Knowing as the knower moves among five perspectives from silence (knower is voiceless and subject to external authority) to constructed knowing (knower decides how to construct knowledge based on contexts) (Belenky, Clinchy, Goldberger, & Tarule, 1997). In reflection, I had to accept that I was capable of making a contribution through my research before I was able to complete the analysis of data. In order to come to this new definition of myself as an instrument of inquiry, I drew upon the stories of my colleagues professionally and as part of my doctoral program. These conversations can be perfunctorily captured as one peer told me: "if they can do it, then why not me?"

The research design that was used in this dissertation may be considered to be empirical in nature and more specifically considered an empirical qualitative strategy. The multiple case study design that I proposed was based on the work of Yin (2003). It was my intention to use

embedded units of analysis in each case to better understand the influence of contextual factors on potential gendered differences in the use of a course management system. The design as well as subsequent analysis was rigid and focused predominately on making truth claims as a result of data collection, rather than allowing for an exploratory study resulting in speculative insights on the topic. Additionally, the language I used to describe analysis was at times, positivistic in nature. The design and analysis were therefore remnants of my positivistic training and background. Piantanida & Garman (2009) refer to this proclivity of students such as myself, in their transition from quantitative to qualitative approaches as they state that "the pervasiveness of this view of legitimate knowledge still lingers" (p.46). Further, they add that it is not uncommon for students who are interested in more interpretive work to use more postpositivist language early in the learning process; "it is a default language for many" (Piantanida & Garman, 2009, p. 55). For me, these statements captured my journey as both researcher and scholar thus far and so represent this dissertation, a reflection of where I am now, in process.

APPENDIX A

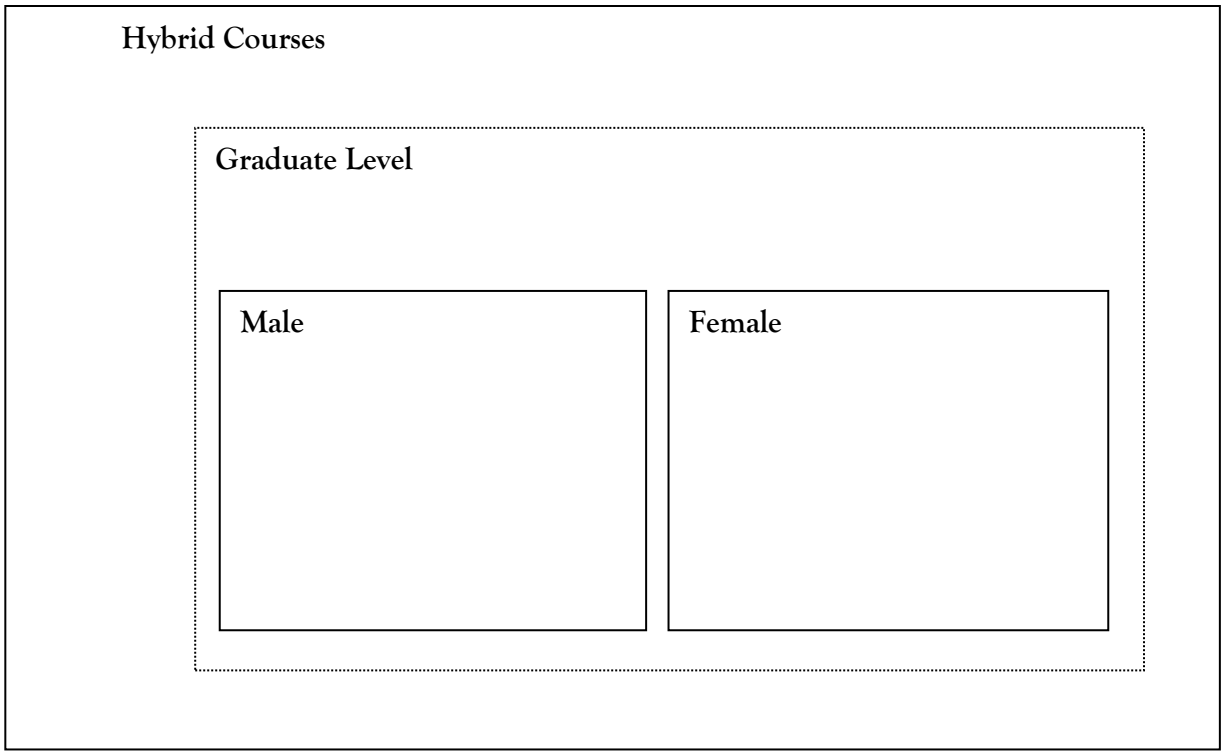
CASE DESCRIPTIONS BY COURSE NAME, NUMBER AND STUDY REFERENCE CODE

Case	Description	Course Name	Subject	Study Reference Code
Case #1	Hybrid Graduate Male	Information Systems	BMIS	1A
	Hybrid Graduate Female	Theories of Gender and Sexuality	WOMNST	1B
Case #2	Hybrid Undergraduate Male	Women and Men in the Ancient Mediterranean	HIST	2A
	Hybrid Undergraduate Female	Test and Measurement	PSY	2B
Case #3	Online Graduate Male	Information Policy Analysis and Design	LIS	3A
	Online Graduate Female	Healthcare Outcomes	NURSP	3B
Case #4	Online Undergraduate Male	Television and Society	COMMRC	4A
	Online Undergraduate Female	Principles of Behavior Modification	PSY	4B

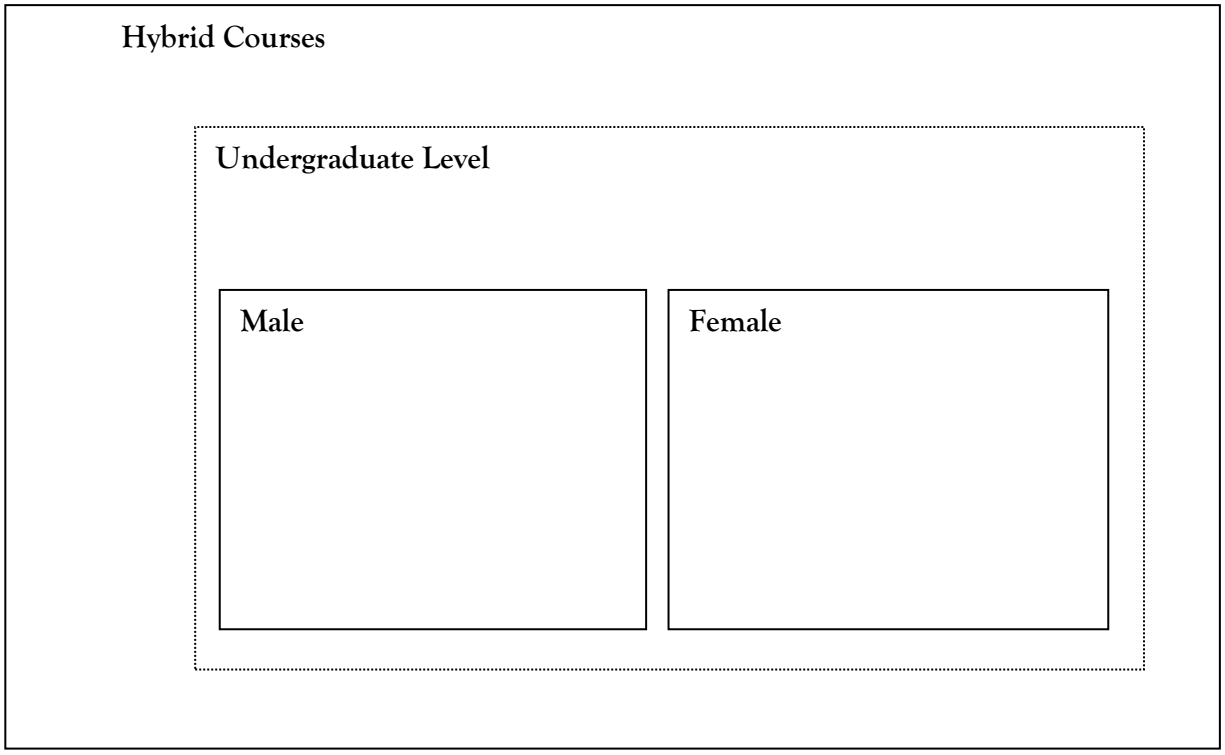
APPENDIX B

CASE DESCRIPTIONS BY CONTEXTUAL CONDITIONS

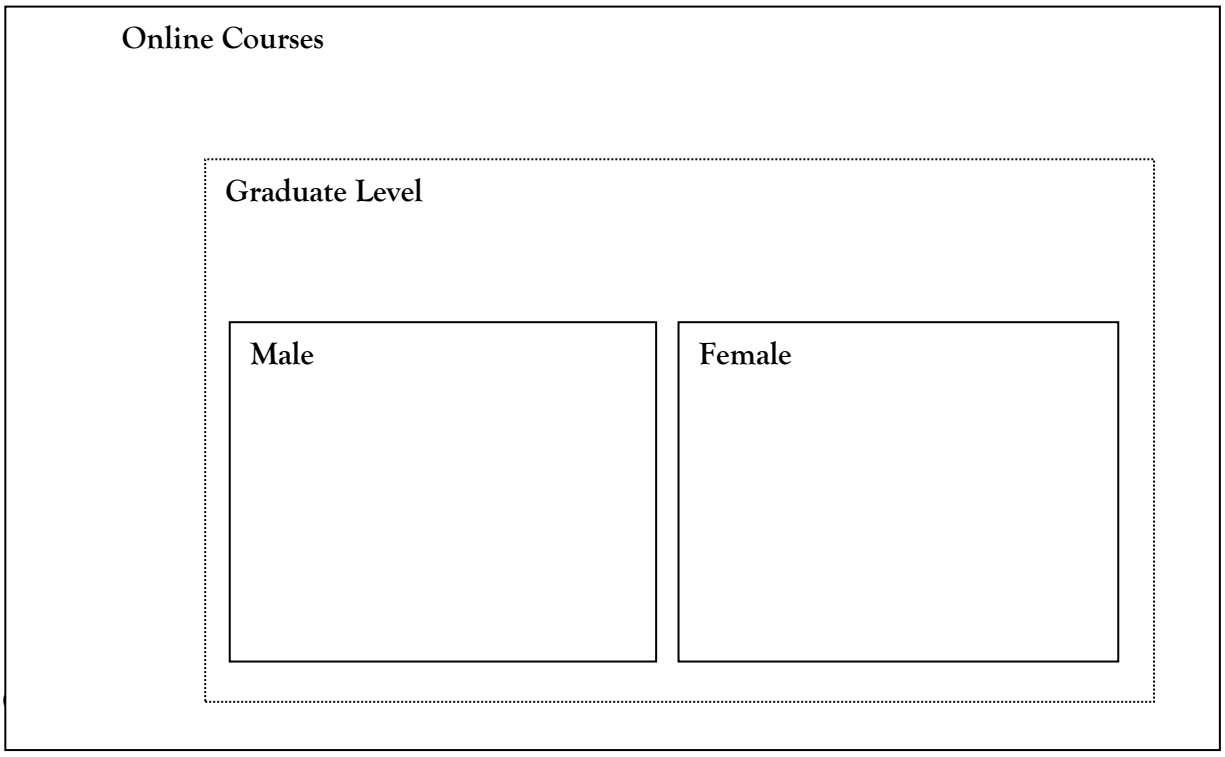
Case #1: Hybrid courses, Graduate-Level, Male and Female Faculty



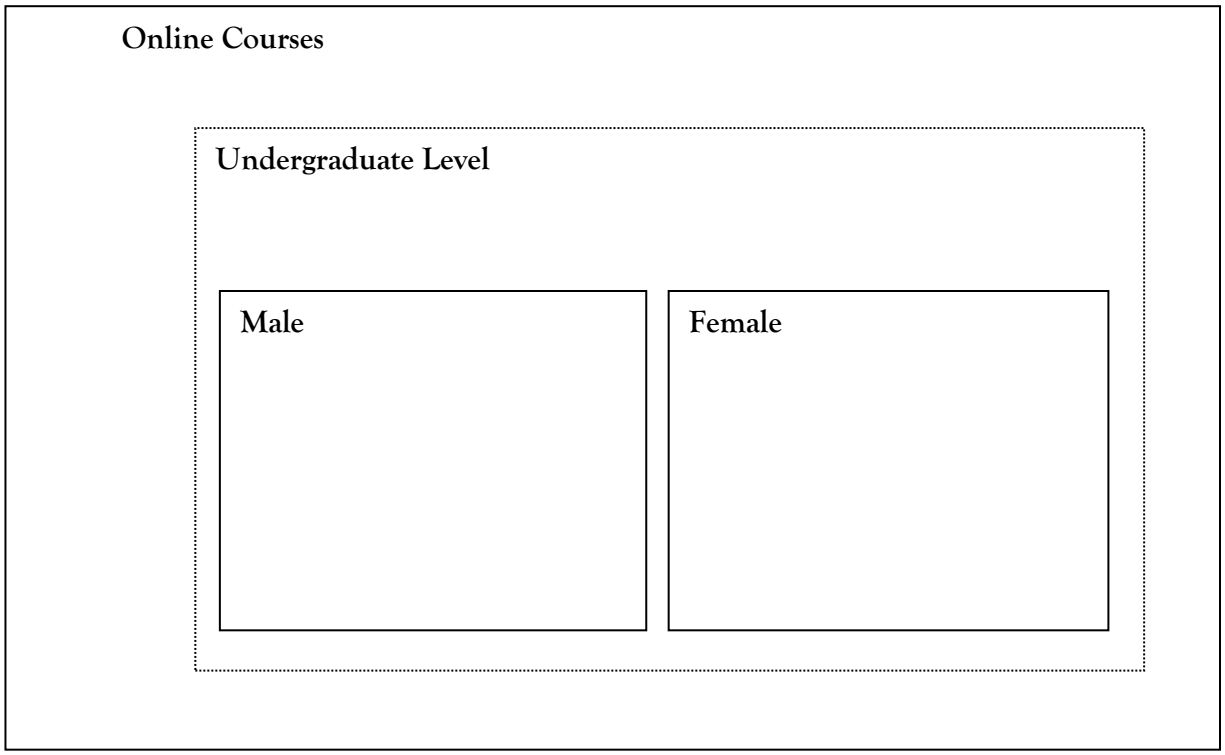
Case #2: Hybrid courses, Undergraduate-Level, Male and Female Faculty



Case #3: Online courses, Graduate-Level, Male and Female Faculty

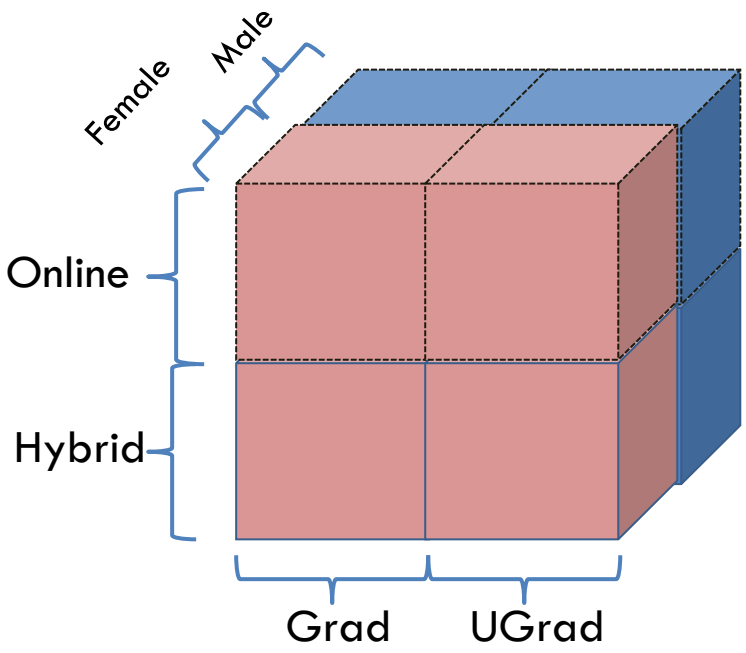


Case #4: Online courses, Undergraduate-Level, Male and Female Faculty



APPENDIX C

SUMMARY FIGURE OF CASES



APPENDIX D

PRE-TEST SEMI-STRUCTURED INTERVIEW PROTOCOL

May I ask you for the following demographic information?
What is your gender?
What is your ethnicity?
What is your highest degree obtained?
What is your department?
What is your faculty rank?

1. How do you describe your instructional goals?

2. How does Blackboard support your instructional goals in your course?

3. What do you believe about students?

4. To what extent do you incorporate student's experiences into your online teaching?
    a. How do you incorporate student experiences in your online classroom?
        i. To what extent does this play a role in the development of assignments as part of your course?

5. To what extent do students participate in your course?
    a. How do you construct your course to support student participation?

6. What do you believe about student involvement in the construction of course content?
    a. How do you include students in the construction of course content?

7. Describe how you incorporate multiple perspectives in your online classroom?
    a. To what extent do you support integration of various opinions in your course content?

8. To what extent do contextual factors (consideration of social, political, and economic factors) influence learning in your online classroom?

APPENDIX E

POST-TEST SEMI-STRUCTURED INTERVIEW PROTOCOL

May I ask you for the following demographic information?
What is your gender?
What is your ethnicity?
What is your highest degree obtained?
What is your department?
What is your faculty rank?

1. What are your instructional goals?
    a. How do you convey your instructional goals to your students?

2. How does Blackboard support your instructional goals?

3. Describe the type of student who takes your course. What is his/her career focus, level of technology skills, age, status in the program, learning style, and any other characteristics that may impact learning?
    a. To what extent do you incorporate student's experiences into your online teaching? How do you do so?
        i. To what extent does this play a role in the development of assignments as part of your course?
        ii. Which tools in Blackboard do you use to collaborate with your students?
        iii. Do you use any non-Blackboard tools and technologies as part of your course? If so, why?

4. To what extent do students participate in your course?

    a. How do you construct your course to support student-student interaction, student-instructor interaction and student- content interaction participation?

5. What do you believe about student involvement in the construction of course content?
    a. How do you include students in the construction of course content?

6. Describe how you incorporate multiple perspectives in your online classroom?
    a. To what extent do you support integration of various opinions (diversity) in your course content?

7. To what extent do contextual factors (consideration of social, political, and economic factor) influence learning in your online classroom?

APPENDIX F

CASE SELECTION: ELECTRONIC MESSAGE FOR FACULTY RECRUITMENT

Dr. xxxxx,

I am a graduate student in the Higher Education Management Program within the Department of Administrative and Policy Studies in the School of Education at the University of Pittsburgh. As part of my doctoral work, I am conducting a research study which proposes to uncover gender-related differences in faculty integration of student-centered pedagogy in instructional technology through an investigation of the manner in which course management systems are utilized on a university campus. To investigate this purpose, in-depth interviews, course observation, and syllabus analysis will be conducted. University of Pittsburgh faculty who present some or their entire instructional program in a course management system (Blackboard) will be the source of subjects in this study. If you are willing to participate, an hour interview will be scheduled. In addition, I will ask you for permission to be added to the online component of your course with the status of "guest." In this way, course observations will be conducted of the online component of your course for the first eight weeks of spring semester 20xx. As well, the syllabus, as posted in the online component of your course will be reviewed. During the interview, you will be asked about your online course presentation. While your identity will be known to the researcher at the onset of the study, confidentiality will be maintained in data analysis and final report. There are no foreseeable risks associated with this project, nor are there any direct benefits to you. No payment will be received for participation. Your participation is voluntary and you may withdraw from this project at any time. This study is being conducted by me, (Meghan Solomon). I can be reached at (724) 322-3561, or Meghan.Solomon@gmail.com, should you have any questions or concerns.

Thank you very much for your consideration. I look forward to hearing from you.

Sincerely,
Meghan Solomon

APPENDIX G

UNIVERSITY OF PITTSBURGH INSTITUTIONAL REVIEW BOARD APPROVAL

Memorandum

To:	Meghan Solomon
From:	Sue Beers PhD, Vice Chair
Date:	1/6/2010
IRB#:	PRO09120252
Subject:	The Influence of Faculty Gender on Student-Centered Pedagogical Approaches to Instructional Technology

The above-referenced project has been reviewed by the Institutional Review Board. Based on the information provided, this project meets all the necessary criteria for an exemption, and is hereby designated as "exempt" under section
45 CFR 46.101(b)(1)

Please note the following information:

- If any modifications are made to this project, use the " **Send Comments to IRB Staff**" process from the project workspace to request a review to ensure it continues to meet the exempt category.
- Upon completion of your project, be sure to finalize the project by submitting a "**Study Completed**" report from the project workspace.

Please be advised that your research study may be audited periodically by the University of Pittsburgh Research Conduct and Compliance Office.

BIBLIOGRAPHY

Agassiz, E.C. (1885). *Louis Agassiz: His life and correspondence*. Boston: Houghten Mifflin.

Aguirre, A., Jr. (2000). *Women and minority faculty in the academic workplace: Recruitment, retention and academic culture*. San Francisco: Jossey-Bass.

Anderson, E. (1995). Feminist epistemology: An interpretation and a defense. *Hypatia, 10* (3), 50-84.

Anderson, R.E., & Ronnkvist, A. (1999). *The presence of computers in American schools: Teaching, learning and computing: 1998 national survey* (Report #2). Irvine, CA: Center for Research on Information Technology and Organizations. (ERIC Document Reproduction Service No. ED 430 548).

Anduwa-Ogiegbaen, S.E.O., & Isah, S. (2005). Extend of faculty members' use of internet in the university of Benin, Nigera. *Journal of Instructional Psychology, 32*(4), 269-276.

Astin, H.S. (1969). *The woman doctorate in America*. New York: Russell Sage Foundation.

Astin, A.Q., Korn, W.S., & Dey, E.L. (1991). *The American college teacher: National norms for the 1989-1990 HERI faculty survey*. Los Angeles: Higher Education Research Institute, UCLA.

Axelrod, J. (1991). Didactic and evocative teaching modes. In J.L. Bess (Ed.), *Foundations of American higher education* (pp. 473-479). New York: Simon & Schuster.

Baker, M.H. (1994). Distance teaching with interactive television: Strategies that promote interaction with remote-site students (Doctoral dissertation, The University of Iowa, 1994). *Dissertation Abstracts International, 55-12,* A3818.

Barbezat, D.A., & Hughes, J.W. (2006). Salary structure effects and the gender pay gap in academia. *Research in Higher Education, 46*(6), 621-640.

Becker, H.J. (1998). Running to catch a moving train: Schools and information technologies. *Theory into Practice, 37*(1), 20-30.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., and Tarule, J. M. (1986). *Women's Ways of Knowing: The Development of self, voice and mind*. Basic Books: New York.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., and Tarule, J. M. (1997). *Women's Ways of Knowing: The development of self, voice and mind* (10th anniversary ed.). Basic Books: New York.

Bellas, M.L., and Toutkoushian, R.K. (1999). Faculty time allocations and research productivity: Gender, race and family effects. *The Review of Higher Education, 22*, 367-390.

Bentley, R.J. & Blackburn, R.T. (1993). Two decades of gains for female faculty? *Teachers College Record, 93*(4), 697-709.

Berners-Lee, T., Fischetti, M., & Dertouzos, M.L. (2000). Weaving the Web: *The original design and ultimate destiny of the world wide web* (1st ed.). San Francisco, CA: HarperBusiness

Blackboard. (2011). Blackboard to be acquired by Providence Equity Partners for $45.00 per share in cash or $1.64 billion. Retrieved August 10, 2011 from http://www.blackboard.com/About-Bb/Media-Center/Press-Releases.aspx?releaseid=1581633.

Blackburn, R.T., Pellino, G.R., Boberg, A. & O'Connell, C. (1980). Are instructional programs off target*? Current Issues in Higher Education, 1*, 32-38.

Bloom, B.S., Engelhart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook1: Cognitive Domain.* New York: David McKay.

Blum, L, Frieze, C, Hazzan, O & Dias, M.B. (2007). A cultural perspective on gender diversity in computing. In C. Burger, E. Creamer & P Meszaros (Eds.) *Reconfiguring the firewall* (pp. 109-133). Massachusetts: A.K. Peters.

Boulos, M., Maramba, I., & Wheeler, S. (2006). Wikis, blogs and podcasts : a new generation of Web-based tools for virtual collaborative clinical practice and education. *BMC Medical Education, 6*, 41.

Boshier, R., Mohapi, M., Moulton, G., Qayyam, A., Sadownik, L., & Wilson, M. (1997). Best and worst dressed Web courses: Strutting into the 21st century in comfort and style. *Distance Education, 18* (2), 327-349.

Bransford, J.D., Brown, A.L., Cocking, R.R. (Eds.). (1999). *How people learn: Brain, mind, experience and school.* Washington, DC: National Academy Press.

Campbell, K. (2003). Personal, political and pedagogical: Female faculty and values-based learning design. *Radical Pedagogy, 5*(1), 1-19.

Campbell, K. (2002). Power, voice, and democratization: Feminist pedagogy and assessment in CMC. *Educational Technology & Society 5* (3), 27-39.

Campbell, K., & Varnhagen, S. (2002). When faculty use instructional technologies: Using Clark's delivery model to understand gender differences. *The Canadian Journal of Higher Education. 32* (1), 31-56.

Caplow, J. (2006). Where do I put my course materials? *Quarterly Review of Distance Education, 7*(2), 164-174.

Carnegie Commission on Educational Television (1967). *Public television: A program for action*. New York: Harper&Row.

Chapman, A. (2000). The difference it has made: The impact of the women's movement on education. *Independent School, 60*(1), 20-30.

Chen, M. (1986). Gender and computers: The beneficial effects of experience on attitudes. *Journal of Educational Computing Research, 2*, 265-281.

Chick, N. & Hassel, H. (2009). "Don't hate me because I'm virtual": Feminist pedagogy in the online classroom. *Feminist Teacher, 19*(3), 195-215.

Chodorow, N.J. (1978). *The Reproduction of Mothering.* Berkeley: University of California Press.

Christensen, R., Knezek, G., & Overall, T. (2005). Transition points for the gender gap in computer enjoyment. *Journal of Research on Technology in Education. 38*(1), 23-37.

Cockburn, C., & Ormond, S. (1993). *Gender and technology in the making*. London: Sage.

Colin, S. & Heaney, T. (2001). Negotiating the democratic classroom. *New Directions for Adult and Continuing Education, 91*, 29-37.

Collins, L. (1998). Competition and contact: The dynamics behind resistance to affirmative action in academe. In L.H. Collins, J.C. Chrisler, and K. Quina (eds.), *Career Strategies for Women in Academe: Arming Athena*. Thousand Oaks, CA: Sage Publications.

Collis, B.A. (1985). Sex differences in secondary school students' attitudes towards computers. *Computing Teacher, 12*(7), 33-36.

Collis, B. & De Boer, W. (2004). Teachers as learners: Embedded tools for implementing a CMS. *Tech Trends, 48* (6), 7-12.

Combs, W., Arthur, D.A., Purkey, W.W. (1971). *Helping relationships: Basic concepts for the helping professions*. Boston: Allyn and Bacon.

Crabtree, R.D., Sapp, D.A. (2003). Theoretical, political and pedagogical challenges in the feminist classroom: Our struggles to walk the walk. *College Teaching, 51*(4), 131-140.

Creamer, E.G. (1995). The scholarly productivity of women academics. *Initiatives, 57* (1), 1-9.

Creamer, E.G. (1998). *Assessing faculty publication productivity: Issues of Equity*, ASHE-ERIC Higher Education Report, 26 (2), Washington, D.C.: The George Washington University, Graduate School of Education and Human Development.

Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd edition). London: Sage.

Crooks, S.M., Yang, Y., Duemer, L.S. (2003). Faculty perceptions of web-based resources in higher education. *Journal of Educational Technology Systems, 31* (2), 103-113.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process.* Thousand Oaks, CA: SAGE.

Curran, C. (1997). ODL and traditional universities: dichotomy or convergence? *European Journal of Education, 32*(4), 335-346.

Dale, E. (1953). What does it mean to communicate? *AV Communication Review, 1*, 3-5.

Davis, J.L., & Davis, H. (2007). Perceptions of career and technology and training and development students regarding basic personal computer knowledge and skills. *College Student Journal 41*(1), 69-79.

DeAngelo, L., Hurtado, S., Pryor, J.H., Kelly, K.R., Santos, J. L., Korn, W.S. (2009). *The American college teacher: National norms for the 2007-2008 faculty survey.* Los Angeles: Higher Education Research Institute, UCLA.

Drago, R., Colbeck, C., Stauffer, K.D., Pirretti, A., Burkum, K., Fazioli, J., Lazarro, G. & Habasevich, T. (2005). Bias against caregiving. *Academe, 91*(5), 22-25.

Ely, D. (1963). The changing role of the audiovisual process in education: A definition and a glossary of related terms. *AV Communication Review, 11* (1), 18-26.

Ely, D. (1996). Paul Saettler: the historian of educational technology. *Educational Media & Technology Yearbook, 21*, 166-167.

Finn, J.D. (1954). Direction in AV communication research. *AV Communication Review, 2*, 83-102.

Fiore, C. (1999). Awakening the tech bug in girls. *Learning and leading with technology, 26*(5), 10-17.

Fox, M.F. (2005). Gender, family characteristics and research productivity among scientists. *Social Studies of Science, 35* (1), 131-150.

Gagne, R.M. (1962). The acquisition of knowledge. *Psychological Review, 69*, 355-365.

Gagne, R.M. (1965). *The conditions of learning* (1st ed.). New York: Holt, Rinehart and Winston.

Gagne, R. M (1985). *The conditions of learning* (4th ed.). New York: Holt, Rinehart and Winston.

Gagne, R.M., & Briggs, L.J. (1974). *Principles of instructional design* (1st ed.). New York: Holt, Rinehart and Winston.

Gagne, R.M., & Briggs, L.J. (1979). *Principles of instructional design* (2nd ed.). New York: Holt, Rinehart and Winston.

Galbraith, J.K. (1967). *The new industrial state*. Boston, MA: Houghton Mifflin.

Gallagher, K. (2000). The everyday classroom as problematic: A feminist pedagogy. *Curriculum Inquiry, 30* (1), 71-81.

Gallos, J. (1995). Gender and silence: Implications of Women's Ways of Knowing. *College Teaching, 43* (3), 101-105.

Gappa, J.M., Austin, A.E., & Trice, A.G.(2007). *Rethinking faculty work: Higher education's strategic imperative.* San Francisco: Jossey-Bass.

Gendron, B. (1977). *Technology and the human condition*. New York, NY: St. Martin's.

Gerlich, R.N. (2002). Faculty perceptions of distance learning. *Distance Education Report, 9*(17), 8.

Gillani, B. (2000). Using the web to create student-centered curriculum. In R. Cole (Ed.), *Issues in web-based pedagogy: A critical primer* (pp. 161-181). Connecticut: Greenwood Press.

Gilligan, C. (1979). Woman's place in the man's life cycle, *Harvard Educational Review 49*(4), 431-446.

Gilligan, C. (1982). *In a different voice.* Cambridge, MA: Harvard University Press.

Goldberger, N., Tarule, J., Clinchy, B., and Belenky, M. (eds.). (1996). *Knowledge, Difference, and Power: Essays Inspired by Women's Ways of Knowing*, Basic Books, New York.

Gow, D., & Yeager, J. (1975). The design and development of individualized curriculum materials for higher education. *Journal of Higher Education, 46* (1), 41-54.

Greene, L. (1991). Serving the community: Aspiration and abyss for the law professor of color. *Saint Louis University Public Law Review, 10*, 297-303.

Gueldenzoph, L.E., Guidera, S., Whipple, D., Mertler, C., Dutton, L. (1999). *Journal of Educational Technology Systems, 28* (2), 121-135.

Gumpert, G. (1967). Closed- circuit television in training and education. In A.E. Koenig & R.B. Hill (Eds.), *The farther vision: Educational television today*. Madison, WI: University of Wisconsin Press.

Gunn, C. (2003). Dominant or different? Gender issues in computer supported learning. *Journal of Asynchronous Learning Networks, 7*(1) 14-30.

Haag, P. (2005). Is collegiality code for hating ethnic, racial, and female faculty at tenure time? *Education Digest, 71*(1), 57-62.

Hammer, D., and Elby, A. (2002). On the form of a personal epistemology. In Hofer, B. K., and Pintrich, P. R. (eds.), *Personal Epistemology: The Psychology of Beliefs About Knowledge and Knowing,* Erlbaum, Mahwah, NJ.

Hamovitch, W., & Morgenstern, R.D. (1977). Children and the productivity f academic women. *Journal of Higher Education, 47,* 633-645.

Haythornthwaite, C., Kasmer, M., Robins, J., & Shoemaker, S. (2004).Community development among distance learners: Temporal and technological dimensions. In C. Haythornthwaite & M. Kasmer (Eds). *Learning, Culture and Community in Online Education* (pp. 35-57). New York: Peter Lang.

Heshusius, L., & Ballard, K. (1996). *From Positivism to Interpretivism and Beyond: Tales of Transformation in Educational & Social Research (The Mind- Body Connection).* New York, NY: Teachers College Press.

Hoban, C.F., Sr., Hoban, C.F.Jr., & Zissman, S.B. (1937). *Visualizing the curriculum.* New York, NY: Dryden.

Hofer, B.K. & Pintrich, P.R. (1997). THe development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research 67*(1), 88-140.

Hofer, B.K. (2001). Personal epistemology research: Implications for learning and teaching. *Journal of Educational Psychology Review, 13* (4), 353-383.

Hogsett, C. (1993). Women's Ways of Knowing Bloom's Taxonomy. *Feminist Teacher. 7*(3), 27-32.

Holland, J.G. & Skinner, B.F. (1961). The analysis of behavior: A program for self-instruction. New York, NY: McGraw-Hill.

Jafari, A., McGee, P., & Carmean, C. (2006). Managing courses, defining learning: What faulty, students and administrators want. *Educause Review, 41*(4), 50-70.

Januszewski, A. (1999). Forerunners to educational technology. *Educational Media and Technology Yearbook. 24,* 31-42.

Januszewski, A., Molenda, M. (2008). *Educational technology: A definition with commentary*. New York, NY: Taylor & Francis Group.

Kahn, R.E. (1995). The role of the government in the evolution of the internet. In *Revolution in the U.S. Information Infrastructure*. Washington, DC: National Academy of Sciences.

Kane, E.E. (1995). Education and beliefs about gender inequality. *Social Problems 42*(1), 74-90.

Knowlton, D.S. (2000). A theoretical framework for the online classroom: A defense and delineation of a student-centered pedagogy. *New Directions for Teaching and Learning (84),* 5-14.

Kuhn, D. (1991). *The Skills of Argument*, Cambridge University Press, Cambridge.

Lacey, C.H., Saleh, A., & Gorman, R. (1998, October). Teaching nine to five: A study of the teaching styles of male and female professors. Paper presented at the annual meeting of the Women in Educational Leadership Conference, Lincoln, NE.

Lane, L. (2008). Toolbox or trap? Course management systems and pedagogy. *Educause Quarterly, 31*(2), 4-6.

Lammers, W.J., & Murphy, J.J. (2002). A profile of teaching techniques used in the university classroom. *Active Learning in Higher Education 3* (1), 54-67.

Leiner, B.M.,Cerf, V.G., Clark, D.D., Kahn,R., Kleinrock, L., Lynch, D.C., Postel, J., Roberts, L.G. & Wolff, S.S. (1997) The past and future history of the internet, *Communications of the ACM, 40* (2) 102-109.

Mager, R.F. (1962). *Preparing objectives for programmed instruction*. Belmont, CA: Fearon.

Matthews, D. (1999). The origins of distance education and its use in the United States. *Technology Horizons in Education Journal, 27*(2), 54-60.

Mertens, D.M. (2005). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed method*s (2nd ed.). Thousand Oaks, CA: Sage.

Milet, M.L. (1991). Descriptive analysis of factors affecting faculty implementation of computer-based and video-based technology in higher education (Doctoral dissertation, Lehigh University, 1991). *Dissertation Abstracts International, 52-02,* A0439.

Monroe, W.S. (1969). *History of the Pestalozzian movement in the U.S.* New York: Arno Press.

Moore, J.L., Downing, R.E., & York, D.L. (2002). Organizing instructional content for web-based courses: Does a single model exist? *Quarterly Review of Distance Education, 3*(3), 269-281.

Morgan, J.E. (1932). Introduction. In B.H. Darrow, *Radio: The assistant teacher*. Columbus, OH: RH Adams.

Morley, L. (2005). Opportunity or exploitation? Women and quality assurance in higher education. *Gender Education,* 17(4), 411-429.

Nelson, C.S. & Watson, J.A. (1995, Fall). The computer gender gap: Children's attitudes, performance, and socialization. *Montessori LIFE,* 33-35.

Office of Technology Assessment (1995). Teachers & technology: making the connection. Washington, DC: Office of Technology Assessment.

Moore, W.S. (2003). Overview of Perry Scheme. Retrieved December 7, 2011 from http://www.perrynetwork.org/schemeoverview.html.

Pagliaro, L.A. (1983). The history and development of CAI: 1926-1981, an overview. *Alberta Journal of Educational Research, 29* (1), 75-84.

Panopto, (2011). Technology that's easy to use and flexible. Retrieved June 1, 2011 from http://www.panopto.com/site/Products/technology.aspx.

Peluchette, J.V., Rust, K.A. (2005). Technology use in the classroom: Preferences of management faculty members, *Journal of Education for Business, 80*(4), 200-205

Perry, W. G. (1970). *Forms of Intellectual and Ethical Development in the College Years: A Scheme*, Holt, Rinehart andWinston, New York.

Perry, W. G. (1981). Cognitive and ethical growth: The making of meaning. In Chickering, A. (ed.), *The Modern American College*, Jossey-Bass, San Francisco, pp. 76–116.

Phillips, V. (1998). Virtual classrooms, real education. *Nation's Business, 86*(5), 41-44.

Piaget, J. (1950). *Psychology of intelligence*. New York: Harcourt, Brace and World.

Piantanida, M., & Garman, N. B. (2009). *The Qualitative Dissertation, 2nd edition: A guide for students and faculty*. Thousand Oaks, CA: Corwin.

Picciano, A.G.(2002). Beyond student perceptions: Issues of interaction, presence and performance in an online course. *Journal of Asynchronous Learning Networks. 6*(1), 21-40.

Reiser, R. (2001). A history of instructional design and technology: Part I: A history of instructional media. *Educational Technology Research and Development, 49*, 53-64.

Ruth, M.L. (1996). Faculty acceptance and resistance: Internet Technologies at Moorhead State University (Doctoral dissertation, University of Minnesota, 1996). *Dissertation Abstracts International. 57-11*, A4670.

Saettler, P. (2004). *The evolution of American educational technology*. Greenwich, CT: Information Age Publishing.

Samble, J. (2008). Female faculty: Challenges and choices in the United States and beyond. *New Directions for Higher Education, 143*, 55-62.

Sax, L.J., Astin, A.W., Korn, W.S., & Gilmartin, S.K. (1999). *The American college teacher: National norms for the 1998-1999 HERI faculty survey*. Los Angeles: Higher Education Research Institute, UCLA.

Sax, L., Hagedorn, L., Arredondo, M., & Dicrisi, F. (2002). Faculty research productivity: Exploring the role of gender and family-related factors. *Research in Higher Education, 43*(4), 423-446.

Scriven, M. (1967). The methodology of evaluation. *In Perspectives of curriculum evaluation* (American Educational Research Association Monograph Series on Curriculum Evaluation, No. 1). Chicago: Rand McNally.

Seels, B., & Richey, R. (1994). *Instructional technology: The definition and domains of the field.* Washington, DC: Association for Educational Communications and Technology.

Severiens, S. & Dam, G. T. Gender and learning: Comparing two theories. *Higher Education, 35* (3), 329-350.

Shashaani, L. (1994). Gender differences in computer experience and its influence on computer attitudes. *Journal of Educational Computing Research, 11*, 347-367.

Skinner, B.F. (1968). *The technology of teaching*. New York: Appleton-Century-Crofts.

Spotts, T.H., Bowman, M.A., & Mertz, C. (1997). Gender and use of instructional technologies: A study of university faculty. *Higher Education, 34*, 421-436.

Stake, R. E. (2005). Qualitative Case Studies. In N. K. Denzin, & Y. S. Lincoln, *The Sage Handbook of Qualitative Research* (pp. 443-466). Thousand Oaks, CA: Sage.

Statham-Macke, A., Walum-Richardson, L. & Cook, J. (1980). *Sex-typed teaching styles of university professors and student reactions.* Report for the National Institute of Education. Washington, DC: National Institute of Education.

Taylor, B.J. (1967). The development of instructional television. In A. E. Koenig & R.B. Hill (Eds.), The farther vision: Educational television today. Madison, WI: University of Wisconsin Press.

Thielens, J.W. (1987). *The disciplines and undergraduate lecturing*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Thomson, L.F., & Lynch, B.J. (2003). Web-based instruction: Who is inclined to resist it and why? *Journal of Educational Computing Research, 11*, 347-367.

University of Pittsburgh Fact Book (2011a). Retrieved August 15, 2011, from http://www.ir.pitt.edu/factbook/documents/fb11.pdf.

University of Pittsburgh. (2011b). Joseph M. Katz Graduate School of Business. Information systems concentration MBA courses. Retrieved March 2, 2011 from http://www.business.pitt.edu/katz/mba/academics/courses/information-systems.php#BMIS2411.

University of Pittsburgh. (2011c). Women's Studies Program. Theories of Gender and Sexuality. Retrieved March 3, 2011 from http://www.wstudies.pitt.edu/students/courses/theories-gender-sexuality.

University of Pittsburgh. (2011d). Center for Instructional Development and Distance Education at the University of Pittsburgh Twitter (March 1, 2011). Retrieved June 15, 2011 from http://twitter.com/#!/PittCIDDE/.

Volman, M., van Eck, E., Heemskerk, I., & Kuiper, E. (2005). New technologies, new differences: Gender and ethnic difference in pupils' use of ICT in primary and secondary education. *Computers & Education, 45*(1), 35-55.

Wallace, M.L. (1999). Beyond love and battle: Practicing feminist pedagogy. *Feminist Teacher, 12*(3), 184-197.

Weber, K. & Custer, R. (2005). Gender-based preferences toward technology education content, activities, and instructional methods. *Journal of Technology Education, 16*(2), 55-71.

Weigel, V. (2005). From course management system to curricular capabilities: A capabilities approach for the next- generation course management system. *Educause Review, 40*(3), 54-67.

West, M.S. & Curtis, J.W. (2006). Organizing around gender equity. In J.W. Curtis and M.S. West (eds.), *AAUP Faculty Gender Equity Indicators 2006*. Washington, DC.: American Association of University Professors.

Wigfall, P. M., & Hall, P. Q. (Summer 2010). A gender lens on pedagogical choice in academia: revisiting Hartlaub and Lancaster's study on teaching methodologies. *Forum on Public Policy: A Journal of the Oxford Round Table*, p.NA. Retrieved June 07, 2011, from Academic OneFile via Gale: http://find.galegroup.com/gtx/start.do?prodId=AONE&userGroupName=upitt_main.

Williams, J.C. (2006). Hitting the maternal wall. *Academe, 90*(6), 16-20.

Williams, S.W., Ogletree, S.M., Woodburn, W., Raffeld, P. (1993). Gender roles, computer attitudes, and dyadic computer interaction performance in college students. *Sex Roles. 29*(7-8), 515-526.

Wilson, F. (1992). Language, technology, gender and power, Human Relations 45, 883-904.

Wilson, W. (2003). Faculty perceptions and uses of instructional technology. *EDUCAUSE Quarterly*, November 2, 2003, 60-62.

Woods, R., Baker, J.D., Hopper, D. (2004). Hybrid structures: Faculty use and perception of web-based courseware as a supplement to face-to-face instruction. *The Internet and Higher Education*, *7*, 281-297.

Yin, R. K. (2003). *Case Study Research: Design and Methods (3rd edition).* Thousand Oaks, CA: Sage.

Zhang, Y. (2005). Distance learning receptivity: Are they ready yet? *Quarterly Review of Distance Education. 6*(1), 45-55.

Zhou, G. & Xu, J. (2007). Adoption of educational technology: How does gender matter? *International Journal of Teaching and Learning in Higher Education, 19*(2), 140-153.