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A Descriptive Analysis of Quality Online Practices as Perceived by West Virginia Higher Education Faculty

Michael H. Murphy

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**A Descriptive Analysis of Quality Online Practices as Perceived by West
Virginia Higher Education Faculty**

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Dissertation submitted to the Faculty of the
Marshall University Graduate College
in partial fulfillment of the
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Doctor of Education
in
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Huntington, West Virginia, 2008

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ABSTRACT

A Descriptive Analysis of Quality Online Practices as Perceived by West Virginia Higher Education Faculty

Michael H. Murphy

The purpose of this study was to examine the extent West Virginia higher education faculty agree their online courses reflect high quality practices, as identified by the literature, for teaching in an online educational environment. The identified high quality practices are: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. This was a non-parametric study that incorporated measures of central tendency and the Kruskal Wallace test for significance to analyze the data. The instrument used in this research was a cross-sectional, self-reporting survey, titled the *Survey of Online Educational Practices*. The participants of this study were West Virginia higher education faculty who taught in online environments during the spring, summer and fall semesters of 2006. Results of the survey yielded that overall West Virginia Higher Education faculty agreed with the statements on the *Survey of Online Educational Practices* that their courses reflected quality online practices as supported by the comprehensive literature review. However, further analysis of the survey results revealed faculty do not agree with all of the quality online practices targeted within the survey. For example, there is evidence from the survey results that indicate the areas of institutional support, collaboration and teamwork, and areas of assessment are not well utilized by faculty. These areas of disagreement with quality online practices provide valuable information that there is an ongoing need for sustainable professional development and mentoring opportunities for online faculty. There is also a need for institutions to provide policies and procedures that are reviewed and revised by faculty and other higher education stakeholders on a regular basis due to the ever-changing nature of technology and online education.

DEDICATION

This dissertation is dedicated to a few wonderful people: To my mother, Nellie Murphy, whose faith, affection and support has always provided strength to me and helped me start this journey into lifelong learning; to Dr. Edna Meisel, whose loyalty, friendship and patience have given me the hope, guidance and perseverance to complete this step in my educational journey; and finally this dissertation is dedicated to Robert Drake, who has helped me to realize that all types of journeys can be achieved and that dreams can come true.

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CHAPTER ONE

Introduction

The explosive growth of online degree programs in the past few years has fundamentally altered the practice of distance education and has provided new methods for delivering higher education online. Dennis (2003) stated that over one half of higher education institutions in the United States offer coursework online. In addition, the Sloan Consortium (2004) suggested there were over 2.6 million students enrolled in online education courses in the fall of 2004. Based on this growth rate, institutions of higher education are attempting to provide for the implementation of high-quality instruction on the Internet (Taylor, 2004; White & Weight, 2000).

As more college students turn to online educational environments, it may become necessary for higher education institutions to adjust their delivery methods. Online learning can significantly change today's higher education institutions. Educators are redefining the physical space of the classroom with the World Wide Web and with communities of learning residing within cyberspace.

Thus, instruction no longer needs to be bound by time and physical space; learning opportunities can exist anywhere, and at any time. This idea can be a cathartic revelation for institutions that are struggling for classroom space and funding. However, this "new frontier" of learning raises important questions about whether or not the Internet can provide the same quality of learning and academic standards that are prevalent in the traditional institutional setting.

Many higher education institutions have developed standards to ensure quality in online instruction. Although Roberts (1999) suggested these guidelines are often defined

utilizing the same set of rules as live instruction and do not account for any real differences in online instruction. Roberts also suggested that online learning is not only a relatively new phenomenon for students, but it is also a new phenomenon for most faculty in higher education. Many faculty members are being pressured to teach online courses because colleges and universities are attempting to find methods to expand their market via the Internet.

However, not all online educational environments that are springing up on the Internet are reliable resources for accredited degrees (Weiger, 1998). Thus, due to the onset of numerous online educational environments outside of established accredited institutions, inconsistencies in the quality of online education have compelled higher education accreditation associations to assess online teaching environments. In 1998, the report of the Council for Higher Education Accreditation (CHEA, 1998) included recommendations for online learning environments. CHEA suggested that these environments should include: (a) valid and reliable performance measurements, (b) evidentiary contact between student and faculty, (c) the promotion of systematic selection and training in the use of electronic resources, and (d) evidence of effective instructional techniques.

Twigg (2001) argued that while the higher education community had developed numerous quality and best practice indicators for traditional educational environments in the early nineties, no similar construct was available for online educational environments. Twigg lamented the fact that institutions were not standardizing their own online educational best practices. However, the Institute for Higher Education Policy (IHEP) reviewed the existing principles and guidelines for online educational environments that

were available and proposed twenty-four quality concepts of best practices for measuring Internet-based learning (IHEP, 2000). The IHEP grouped their recommendations for quality Internet-based learning into seven broad categories: (a) institutional support, (b) course development, (c) teaching and learning, (d) course structure, (e) student support, (f) faculty support, and (g) assessment and evaluation. In 2001, the Southern Regional Education Board (SREB, 2001) suggested that higher education institutions needed to assemble an instructional design team to effectively build a quality online environment. However, the SREB indicated that the core of the team had to be the instructor of the course to guarantee academic integrity. Thus the faculty member becomes the primary stakeholder in providing a quality online experience to students.

Background

The question of quality in higher education has always been a concern, regardless if it is face-to-face or online instruction. Indeed, most academic procedures, such as a thesis or a dissertation are intended to secure the quality of academic work and knowledge. Twigg (2001) suggested that quality assurance is the trade-mark of higher education and that without quality, there is no higher education.

High standards and quality have been integrated so long into academia that the concept of quality in education has often been taken for granted. However, Weiger (1998) stated that quality in higher education courses are no longer the solitary interest of academics. Today, higher education has many different stakeholders, with varying interests and perspectives, which are concerned with quality and high standards of learning. Additionally, Aragon (2003) declared that higher education is not as homogenous as it used to be, and as a direct result of its extensions and diversification,

the purposes of higher education may vary. Increasingly, new committees and positions have been created as institutions and departments become subject to additional accountability assessments and in some cases, quality and standards directly affect departmental budgets (Taylor, 2004).

Thus, as a result of diminishing finances, institutional authorities want to insure that the funding invested in higher education is well spent. Today, it is mandatory for higher education to be held accountable and to demonstrate its quality and standards to governing and accrediting bodies (Benson, 2003). Ascough (2002) stated that the bottom line is to articulate and clarify perceptions of quality and that those quality elements “fit” the purpose of the institution. Husmann and Miller (2001) stated that controversy over quality in education has not diminished, and the need for high standards is important to succeed in producing critical and reflective life-long learners.

However, Twigg (2001) suggested that higher education has developed several quality indicators for traditional education that are well accepted by many institutions. A few of these quality elements include: (a) face-to-face instruction; (b) expert content and subject matter instruction related to quality indicators; and (c) the status and the degree held by the instructor teaching the class. Certainly, many other elements of high standards apply and quality assurance applies; but Twigg suggests that many common quality indicators do not and should not apply to online education. Volery (2000) stated that institutions should not apply the exact same quality standards for online education, because the roles and responsibilities for instructors and the mode of delivery are entirely different. Berge (1998) also contends that even the meaning of online education changes the rules for quality education and that online education is still an emerging field.

In fact, Hanna, Glowacki-Dudka, and Conceicao-Runlee (2000) suggested that the concept of teaching in an online environment is still in its infancy. A careful review of the literature, presented a large number of definitions for online educational environments. For instance, McGreal and Elliot (2004) suggested that an online learning environment is dynamic, distributed, accessible, interactive, open, filtered and archival. Caplan (2004) insisted that online learning environments fall into two basic categories: courses that are text based, with computer mediated enhancements, and courses that are designed specifically for the distributed Internet setting and that may merge several multi-media components into a single course of study.

Palloff and Pratt (1999) provided their own definition of online learning by revising Keegan's (1996) five key elements in online learning environments as: (a) the separation of teacher and learner during the instructional process, (b) the provision of two-way communication between teacher, tutor or educational agency and learner, (c) the use of educational media to unite teacher and learner, (d) the separation of teacher and learner in both time and space, and (e) the volitional control of learning by students rather than by the online instruction. In other words, students create their own meaning based on the educational strategy of the instructor.

Other authors suggest that the definition of online education must encompass the broader aspects of online distance learning and be defined as the ability of higher education to meet the needs of a growing diverse population of distance learners (Chambers, 1997; Dabbagh & Bannan-Ritland, 2005; Gibson, O'Reilly & Hughes, 2002). In fact, in the early 1990s, Dillon and Blanchard (1991) defined online education as a

means for education to be anytime, anywhere and for anyone, and must no longer be considered “education for all” but must be considered “education for each.”

Berge and Collins (1995) also believed that online education could be anywhere and could be delivered at any time. They concluded that online education meant the liberation of instruction from the constraints of time, space and place. These researchers also defined online education as computer mediated communication and suggested that online education should be used to structure and manage the presentation of information and any possible response available from the student.

Defining Online Education in the 21st Century

As online learning moved into the 21st century and new authors began writing about online education, there has been a change in the depth and diversity of online education definitions. Technological changes in hardware and software have significantly evolved in the past five years rendering possibly different conclusions for defining online teaching. For instance, Swan (2002) divided the definition of online education into synchronous and asynchronous online learning environments. Swan identified synchronous online education as that in which students are online at the same time but may be in a different place or space. Swan defined asynchronous as interactions in online educational environments that do not take place in real time, space or place. In other words, asynchronous interactions allow the learner to join in course assignments or activities wherever they are physically and at an hour that is convenient for them to participate.

In another interpretation, Garrison, Cleveland-Innes, and Fung (2004) suggested that social definitions must be part of the defining role of online education. For example,

Galusha (1997) indicated the social definition of an online teaching environment as solely student-centered learning; thus it is essential for the instructor to know the characteristics and demographics of the distance learner in order to understand the potential barriers the learner might experience. Galusha further suggested that this social aspect of online education provides institutions knowledge about student characteristics and motivators. This in turn helps faculty to understand students who are likely to participate in distance education and, conversely, why other students choose not to take an online course. Edwards, Webb, and Murphy (2000) also supported a broad social definition of online educational environments. They stated that online educational environments are defined as open learning, flexible and student-centered and must rely on the use of Internet-based communication technologies.

To further add to the dilemma of arriving at a cohesive definition of online environments, Hanna, Glowacki-Dudka, and Conceicao-Runlee (2000) suggested that online education can be both formal and informal. Formal online education provides students with suggested objectives, learning rationale and proposed outcomes based on a predetermined structure. Informal online education provides students with unstructured objectives that are not well defined and learning outcomes are not proposed.

In contrast to these complex ideas for online education definitions, other authors provide simple ones. For example, Clark (2002) suggested that the only definition of an online educational environment is one that supplies any educational material on a computer. Another simple definition of an online educational environment, provided by Volery (2000), is that online education and delivery is nothing more than a form of distributed learning enabled by the Internet. Volery adds that because online education

environments constantly have technology present, online education must continuously incorporate technology creatively by both the teacher and the learner.

More recently, Ascough (2002) provided an even simpler definition, stating that online educational environments must be delivered via a computer and the World Wide Web. However, Allen and Seaman (2003) suggested that in order for a course to be considered an online educational environment, it must have at least 80% of the course content delivered online.

Further evidence of expanded interpretations of online educational environments might be attributed to the proliferation of online courses in recent years and the growing need to establish standards for online education. Additionally, new standards within global telecommunications and higher bandwidth potential within data-lines provide a greater capacity to use video, audio and other multimedia to enrich and provide content. For example, Anderson and Elloumi (2004) suggest that the definition of online education must incorporate not only the learner, but must also include the educational process. They further defined online educational environments as the use of the Internet to access educational materials along with interaction between learners, teachers and content to acquire knowledge, construct personal meaning and to have support during the learning process.

Chambers (1997) recommended six components to define online educational environments. These are: (a) time shifted instruction, (b) dynamic instruction, (c) unbounded (distance, space and time) instruction, (d) decentralized instruction, (e) continuously evolving technology, and (f) unfiltered search-ability. Time shifted instruction and decentralized instruction are directly related to unbounded instruction.

Chambers suggested online courses are not bound within the confines of an institution's physical location, thus online education can be expanded globally. Chambers further suggested an educator's awareness of time differentials may be a pertinent consideration when developing an online educational environment. For instance, distance and time delay can play an integral part in determining if a course is going to be synchronous or asynchronous. In other words, it may be physically impossible for instructors to have synchronous classes with people in different global time zones. In addition, although bandwidth for telecommunications has expanded in recent years, synchronous online instruction may not be possible for large numbers of students to access a single course simultaneously without overtaxing the existing hardware infrastructure.

Another expanded interpretation of online educational environments is provided by Dabbagh and Bannan-Ritland (2005). These authors state that online educational environments should be interactive, open, distributed learning and should utilize constructivist instructional strategies. Dabbagh and Bannan-Ritland also affirm that online learning environments must use pedagogical tools, enabled by the Internet and Web-based technologies, to help students gain knowledge and learn through meaningful interactions and activities. In fact, Anderson and Elloumi (2004) asserted that until recently there was no standard, globally accepted definition of what constitutes an online course or online learning environment.

As a result, the massive phenomenon of online educational opportunities has forced higher education institutions to create their own set of policies, procedures and best practices in online education, to meet the growing demand for online courses. This movement to create best practices and procedures at the institutional level has guided

regional accrediting commissions to set standards for online education to ensure high quality in distance education (Benson, 2003). Benson further pointed out that eight accrediting commissions joined together to create guidelines for best practices in online education and identified benchmarks which could be utilized in the evaluation process for institution accreditation. These best practices set forth by literature and the eight accrediting commissions are examined and discussed in chapter two.

Levels of Internet Interactivity

Considering the many definitions of online learning environments, the literature appears to base the definition of online education on the levels of use of the Internet for instructional purposes. Egbert and Thomas (2001) clearly indicate this paradigm by suggesting that in the development of an online course an instructor must consider the level of Web interactivity.

These levels of Web interactivity are well defined by Sunal, Sunal, Odell, and Sundberg (2003), and are listed as follows: (a) Level 1: traditional courses - these are courses in which no Internet presence is used and are considered standard face-to-face, regular lecture campus courses; (b) Level 2: web-presence - this is a course that has a modicum of information about the course on a web site. The idea is that this is more of a marketing tool for the course; (c) Level 3: web-enhanced - this is a course that makes use of the web to provide course material to learners and will often provide student-to-professor, or student-to-student communication. Multimedia tools, such as audio or video enhancements, might also be used in the course; (d) Level 4: web centric - this indicates that the course is primarily moved from the physical classroom to the web. Course content, communications, interaction, and resources are on the web. Fewer

classes are held on the physical campus than a traditional course and there is greater time flexibility. Also geographic potential exists to include students who may not be able to physically attend a traditional class as often; and (e) Level 5: web-course - this is a course that is completely accessed via the Internet. Time may be asynchronous or synchronous. All materials, content, interactivity, and communications are provided through the web. The course does not require attendance at a physical site. Sunal et al. further breakdown the Web-course into three distinct parts that deal with theoretical views of course delivery. These are: (a) web traditional approach, (b) web cognitive approach, and (c) web constructivist approach.

In addition to levels of Internet interactivity, the Sloan Consortium (2005) suggests that “best practices” help to improve the quality, scale and breadth of online education. However, these “best practices” as described in the literature must not only include the faculty member but must flow through the institution’s infrastructure as well.

This study will focus on best practices utilized by faculty in West Virginia, in an online educational environment. These best practices are supported by literature and are delineated by the Council of Regional Accrediting Commissions [C-RAC] (2003) to provide quality online instruction. This study will examine: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. These domains are listed in an order that can be reviewed from the importance of the institutional involvement to the practicing higher education faculty member’s involvement in online learning. Operational definitions for these best practices will be provided within chapter one. In addition, literature which supports these “best practices” will be fully reviewed in chapter two. These “best practices” will describe the

institutional support, faculty support, technological support and practitioner tools that might create a more meaningful experience for the instructor and the student.

Best practices and quality online education do not occur in a vacuum and by itself the use of technology will not provide quality online courses. Cuban (2001) suggested that the transformation of teaching in online environments has not achieved the expected results. Simply buying the hardware and software for educators to use is fruitless if faculty do not use it effectively. Nevertheless, Jonassen (1995) suggested that if an online educational environment is aligned with instructional intentions that utilize best practices for online instruction, then the technology tool becomes an effective element in the teaching process. If faculty members understand that teaching online can provide a sound educational opportunity and can enhance the learning experience in higher education, then they will value it as a teaching instrument.

However, McCullen (2002) agreed with Cuban and suggested simply teaching online will not provide an effective learning environment if the utilization of best practices is left out. For example, if faculty who teach online cannot connect adult learning techniques, critical thinking and classroom management skills to course content, then students may be less satisfied with their online courses and opportunities for learning may be missed. Without a focus on sound educational principles or best practices that are transferred to the online environment, learning online can induce a kind of cut and dried educational experience for learners that can actually undermine their ability to think on their own (McKenzie, 2000).

Furthermore, it has been suggested that teaching abilities and instructor preparation in the online teaching environment have been identified as contributing to

dropout rates and students' frustrations with online courses (Carr-Chellman & Duchastel, 2000). Thus, a careful literature review and the recommendations for online learning from regional accrediting bodies, indicate a need for instructors to adapt their teaching methods to include certain best practices in the online teaching format. More precisely, the literature has come to represent the shift from teacher-centered instruction to learner-centered instruction in online education.

Statement of the Problem

For the past decade, West Virginia higher education institutions have been delivering online education utilizing their own standards for quality online instruction. However, in recent years there has been an increase in the literature that focuses on the need for institutions to adopt a common set of best practice guidelines and standards.

It is important to note that faculty members are central players in this shift of instructional strategies and higher education must still be rigorous in providing quality educational opportunities to students. Highly effective instructional practices are and will continue to be faculty roles. Unfortunately, an extensive review of relevant literature indicates that modest research has been conducted in the realm of faculty experiences in quality online education, although much support and research has been gathered on student experiences in online instruction. Nevertheless, the effective use of technology requires collaboration between higher education stakeholders to provide quality practices and to produce quality online experiences (Anderson & Elloumim, 2004; CHEA, 1998; IHEP, 2000; McCullen, 2002).

Thus, it is necessary for universities to set the bar for quality online instruction and face the challenges within the realm of online education. West Virginia higher

education needs to meet the rigorous guidelines of best practices set forth by the literature and the Council of Regional Accrediting Commissions.

Purpose of the Study

The purpose of this study is to examine the extent to which West Virginia higher education faculty agree their online courses reflect best practices, as identified by the literature, for teaching in an online educational environment. The identified best practices are: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. As previously stated the operational definitions for these best practices will be provided within this chapter.

Research Question

Based on these themes of best practices revealed by the literature review, the following research question will be addressed:

To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques?

Operational Definitions

After a review of the literature pertaining to best practices in online education, a blending of concepts emerged that are indicative of quality online educational environments. For the purpose of this study, the following definitions represent a merger of these concepts as delineated by the literature. This merger of concepts includes best practice guidelines set forth by the Council for Higher Education Accreditation (Benson,

2003), Chickering and Ehrmann's (1996) study and multiple other researchers that have suggested and studied best practices in online education.

1. Online course environment: any course of study that is Internet based, utilizes tools that include content-based online instruction, provides meaningful online interactivity, and facilitates access in either an asynchronous or synchronous environment. This definition will also refer to online teaching environments as online environments, online education, virtual education, or virtual classroom as equivalent statements throughout the body of this paper.
2. Faculty: West Virginia Higher Education Faculty, from 4 year institutions who teach online courses and participated in this study.
3. Support (Appendix A): refers to a blending of the following concepts from the literature review: (a) institutional support: The provision of policies and procedures, provided by the institution offering online education as represented by a score on the Survey of Online Educational Practices, (b) faculty support: The provision of rewards, resources, and professional development training provided to faculty at an institution offering online education as represented by a score on the Survey of Online Educational Practices, (c) technological support: The provision of stable hardware, software support and timely responses to technical issues provided by staff and faculty at an institution offering online education as represented by a score on the Survey of Online Educational Practices.
4. Collaboration and Teamwork (Appendix A): The collaborative efforts made by small or large faculty groups for the development and delivery of courses

online as represented by a score on the Survey of Online Educational Practices.

5. High Quality Online Teaching Practices (Appendix A): refers to a blending of the following concepts from the literature review: (a) flexibility: The ability of a faculty member to accept change and allow students to play a more significant role in their own learning. In addition, the ability of a faculty member to embrace the technology utilized to teach in an online environment and deal with sudden changes that often occur in an online environment as represented by a score on the Survey of Online Educational Practices; (b) feedback: Clearly defined response time parameters set by faculty members and informational and acknowledgement responses that are constructive, flexible, reflective and supportive as represented by a score on the Survey of Online Educational Practices; (c) assessment: The types of tools, rubrics, formative and summative guides that faculty utilize to grade or assess student learning in an online environment as represented by a score on the Survey of Online Educational Practices.
6. Adult learning techniques (Appendix A): The andragogical concepts that faculty utilize in order to teach in an online environment as represented by a score on the Survey of Online Educational Practices.

Significance of the Study

At the present time there is a lack of research that determines whether or not “best practices” are evident in the virtual classroom. Most studies of online courses demonstrate or focus on one or two possible approaches to successfully implement a set

of best practices. Sunal, Sunal, Odell, and Sundberg (2003) suggest that only a handful of research studies on best practices in asynchronous or synchronous online instruction exist.

This study provides higher education institutions insight into the extent to which faculty are utilizing quality online practices in their online learning environments as defined by a comprehensive literature review. It will also provide information regarding gaps in faculty utilization of adult learning techniques in the development and delivery stages of online courses. This knowledge can provide faculty with focused opportunities to improve their collaborative skills, motivation to embrace online education, and strategies to improve their online courses.

This study also provides institutes of higher education benchmarks for high quality online instruction blended into online instruction. This can provide valuable information in the decision making process for institutional policies and procedures regarding the implementation of quality online education. Furthermore, this study can provide useful information to the faculty and the institution regarding the importance of the infrastructure, practices and continued support for the development and delivery of online education.

Additionally, the practical application of high quality online instructional strategies, as presented in this study, may improve practices and online learning experiences. This focus on improving the quality of the online experience for the student can achieve a dual goal: First, to distribute knowledge that educators can study and conceivably emulate, and second, to corroborate that online education can have a common set of best practices applicable across a myriad of disciplines. Finally, an

extensive review of relevant literature indicates modest research has been conducted in the realm of faculty experiences in quality online education, although much support and research has been gathered on student experiences in online instruction. This study adds to the body of knowledge by providing additional research in the area of faculty experiences in online education.

Limitations of the Study

It is within reason to assume that limitations are present in this study. Assumptions are based on an extensive review of the literature that there are six general themes of quality online practices in online education, and these quality online practices may have a positive impact on meaning making for students. Furthermore, there is an assumption that participants are aware of these best practices through faculty development opportunities at their institutions. There is an assumption that participants will respond truthfully and without a prejudiced pre-disposition on the survey of best practices in online education.

One limitation of the study may be in the reliability and the validity of the survey. The survey instrument has been developed by the researcher based on a comprehensive literature review and adapted from Chickering and Ehrmann's (1996) "Implementing the Seven Principles: Technology as a Lever". The instrument may have potential limitations because self-analysis of teaching in an online environment may include bias on the part of the population participating in the survey. In other words, some respondents may adjust their responses to depict their institutions and themselves in a superior vein (Smith & Glass, 1987).

Another limitation of the study may be in the method of data collection. York (2003) suggested the inability to collect responses from the entire sample population and to verify the responses from the participants can represent a defect of the survey. Thus the number of surveys received must be 50% plus one or more to garner an effective statistical outcome from the sample population (Babbie, 1973). Additionally, Babbie stated that a return rate of 50% plus one provided an excellent rough view of the data with no statistical bias. In fact, Babbie found that a lack of response bias was far more important than a higher return rate.

Finally, another limitation of this study may be in its overall generalizability (Campbell & Stanley, 1963). Data will be collected from higher education faculty members who teach online courses in West Virginia. Data from this study should not be used to generalize to higher education faculty or other educators teaching in an online environment outside of West Virginia.

CHAPTER TWO

Literature Review

The purpose of this chapter is to investigate existing literature that discusses best practices that are utilized for teaching in an online environment within the framework of distance education. Online learning environments are multifaceted, diverse and rapidly developing into the mainstream delivery vehicle for distance education (Taylor, 2004). Anderson and Elloumi (2004) suggested that higher education faculty members must be familiar with the collective pedagogical, economic, cultural and political characteristics of the online educational systems within which they participate. Accordingly, there is an abundance of literature that is related to teaching online, much of which points out the importance of preparing faculty in providing quality online education through best practices (Anderson & Kanuka, 2002; Clay, 1999; Palloff & Pratt, 2001; Schulte, 2002; Sherry & Morse, 1995; Simon, 2000; Sullivan, 1999; Taylor, 2004; White & Weight, 2000).

This chapter examines conflicting views of best practices in online teaching, followed by an aggregated review of best practices as described in the literature and a review of best practices as supported by the Council of Regional Accrediting Commissions (C-RAC, 2003). This review will provide a foundation for the analysis of the roles of the academic institution and instructor in an online environment. This chapter also provides an overview of literature pertaining to the emerging application of andragogy in online learning. Finally, this chapter reviews the development of the conceptual and useful best practices related to the online classroom and online instructor roles.

In early 2001 a statement of commitment by eight Regional Accrediting Commissions for the Evaluation of Electronically Offered Degree and Certificate Programs was adopted and aimed at the growing number of colleges and universities that were providing online course degree and certification programs (Benson, 2003). It is worth noting that as self-regulatory entities, these eight commissions worked collaboratively to produce broadly defined domains for best practices. The eight regional accrediting commissions referred to in this document are: (1) Commission on Higher Education, Middle States Association of Colleges and Schools; (2) Commission on Institutions of Higher Education, New England Association of Schools and Colleges; (3) Commission on Technical and Career Institutions, New England Association of Schools and Colleges; (4) Commission on Institutions of Higher Education, North Central Association of Colleges and Schools; (5) Commission on Colleges, The Northwest Association of Schools and Colleges; (6) Commission on Colleges, Southern Association of Colleges and Schools; (7) Accrediting Commission of Community and Junior Colleges, Western Association of Schools and Colleges; and (8) Accrediting Commission of Senior Colleges and Universities, Western Association of Schools and Colleges.

These eight regional commissions utilized mission-driven standards to define institutional quality and created a list of five domains in the evaluation of online learning. These domains included: (a) institutional context and commitment; (b) curriculum and instruction; (c) faculty support; (d) student support; and (e) evaluation and assessment. All eight accrediting commissions consider the domains of best practices for online

education as “works in progress”, due to the very nature of technological changes and institutions meeting and adapting to change. This flexible paradigm is appropriate because the Council of Regional Accrediting Commissions (C-RAC) stated that it would be neither desirable nor possible for higher education institutions to develop settled definitions of best practices in online education (Benson, 2003).

The Online Learning Environment

Husmann and Miller (2001) suggested that controversies abound concerning the quality of online education. These researchers implied that many people are distrustful of online education because courses are often taught by adjunct instructors and are offered by continuing education programs or educational institutions which are not accredited. Therefore, it is often found that online learning and online programs are outside of formal faculty structure and review for instructional quality (Gaud, 1999). Various opponents of online education have even recommended that online courses should be highly criticized because they lower the value of academic principles (Buck, 2001). Brown and Green (2003) have suggested that online education provides a “cash cow” to some universities. These institutions see online learning as a means to deliver instruction to a large number of paying customers without the overhead expenses of providing a physical space.

However, proponents of online education assert that offering online programs and courses may help schools expand their curricula offerings and develop graduates’ technology skills and marketability (Donlevy, 2003). Furthermore, Rosie (2000) stated that online education can promote students’ critical thinking skills, deep learning and collaborative learning. Donlevy also argued that online education helps students develop their problem-solving skills. In addition to the controversies surrounding quality online

teaching, Sunal et al. (2003) suggested that only a handful of research studies on best practices in asynchronous or synchronous online instruction exist, and many research based best practice studies had flaws in their research design.

For instance, Muirhead (2000) examined a few online courses offered in his academic institution of employment. From this he inferred there are several areas that must be revised when a course is committed to an online environment in higher education. Primarily, Muirhead supported a prerequisite of emotional support and instructional support for the student. Muirhead also suggested that faculty should not only author their own online courses, but they should maintain a full course load when teaching online classes. Finally, he stated that ongoing technological support must be available to students in order to support best practices in online teaching

Conflicting views of Best Practices

The literature reveals a plethora of ideas of “best practices” in online teaching. Chickering and Ehrmann (1996) suggested that any given instructional strategy can be supported by a multitude of divergent technologies and many technologies have numerous capabilities. Thus, they advised it would be misleading to consider there is only one set of best practices to utilize in an online teaching environment. Chickering and Ehrmann also stated that for any given instructional strategy, some technologies are better than others. For example, a course that is entirely text-based on the web may not work well in a counseling course while discussing interviews with clients. Conversely, an instructor that uses two-way video to actually demonstrate a live counseling or mock session in addition to web reflections and interactive instruction may provide a clearer and more meaningful experience to learners. Furthermore, White and Weight (2000)

implied that best practices are more than just practical tips on improving online communications and instructional skills. Best practices are used by reflective educators who are committed to using concepts, ideas, suggestions and tools to improve the quality of their own unique courses.

Indeed, Palmer (2000) in his forward to “One Hundred Forty Seven Practical Tips for Teaching Online Groups,” suggested that the key to effective practices in online environments is to engage the learners actively. Palmer further suggested that best practices must use technology to engage the learner with the teacher, with the space, with each other and with the subject. However, Palmer advises that online learning is so new, there are no established effective practices developed through empirical studies.

Sunal et al. (2003) concurred with Palmer’s view of the lack of established research studies on online best practices, and proposed a method to sample an overview of research supporting best practices for online learning. From this meta analysis of the research, one of their research questions was to determine whether legitimate guidelines could be developed for best practices in online environments. The researchers’ findings concluded that despite the large volume of articles published, there was little summative evaluation of the methods used in the literature to support any single set of best practices. Sunal et al. also indicated, based on their research, no conclusion could be drawn to indicate one action was better than another. In addition, the Western Interstate Commission for Higher Education (WICHE, 2001) suggested that because of the rapidly changing pace of online education, faculty should consider that all “best practices” are “works in progress” and should be flexible with the changing needs of online environments.

However, Sunal et al. (2003) supported the view that suspected and potential variables should be considered as viable strategies or “best practices” in the consideration of online teaching. Furthermore, Sunal et al. concluded these potential best practices could be considered in creating a hypothesis-testing instrument to help determine more useful knowledge about best practices in online learning.

Another view of best practices in online education was presented by White and Bridwell (1998) who recommended the primary objective of all online educational providers should be effective planning and implementing of educational activities that promote learning and retention. White and Bridwell further suggested that within the realm of online courses, faculty must adopt methods and strategies which will engage the learner. White and Bridwell also discussed the need to enhance the techniques for online instruction, but provided little more than broad descriptions of how to engage a learner.

Further evidence of conflicting views of “best practices” in online teaching was provided by Deubel (2003) who considered best practices as the instructor’s attitude, motivation, and true commitment to online course development and delivery. However, Deubel did not provide evidence that student achievement would take place if an instructor was motivated to teach an online course.

To discuss another aspect of the best practices in online teaching, Blum (1999) conducted an interpretive qualitative study that researched a traditional face-to-face course versus an asynchronous web course. Blum concluded that instructors needed to be aware of learning styles and gender differences within a web based course. For example, Blum indicated that females tended to communicate in a more personal manner and were more apt to help one another than their male counterparts.

In another view of best practices in online education, Boyer (2001) concluded that cooperative learning, student centered approaches, and active learning experiences are often the goal of higher education faculty, but due to factors such as technological phobias and inadequate training in the online experience, many online faculty members choose to return to their face-to-face teaching styles within an online environment. Boyer indicated that faculty members are providing greater specificity, stricter accountability measures and less student flexibility/personalization of learning in their online courses. Boyer lamented that due to students' appeal for clarity in online courses, faculty had created a more rigid structure within online teaching environments that virtually eliminated the benefits of online instruction.

Knowles, Holton, and Swanson (1998) suggested that utilizing a traditional approach that includes lecturing, testing and readings does not effectively accommodate any "best practices" of higher education or adult education which should promote engaged, active, and authentic learning experiences. Thus, Harvey (2002) recommended that best practices are important regardless of the delivery method of education. In addition, Harvey asserted that with the advent of online environments, faculty have the opportunity to explore innovative teaching strategies and "best practices" of online teaching to change the roles of the instructor and student.

Despite the fact that Chickering and Ehrmann (1996) indicated no one set of best practices existed for online education, these researchers stressed that if new technologies for teaching online are to be entirely appreciated, they advocated that the utilization of best practice principles would lead to a more effective online experience. In fact, this assertion is supported by the Council of Regional Accrediting Commissions that has

adopted a list of collaboratively developed best practices for online degree and certificate programs. The Council for Higher Education Accreditation (1998) suggested that online degree and certification programs demand a comprehensive and expansive expression of what is considered current best practices in online education. However, Benson (2003) stated that stakeholders in online education will always disagree on what constitutes best practices in online learning, but supported the need for standards of quality in online learning.

Domains of Best Practices for Online Education

Although there are many views of best practices and different methods to organize best practices into categories, there has been an important effort to articulate some common domains of best practices that the literature and eight regional accrediting bodies have recommended for reflection, discussion and implementation in online courses. These best practices have been aggregated, adapted, and advanced from stakeholders in the field of online teaching.

For example, Graham, Cagiltay, Craner, Lim and Duffy (2000) at Indiana University accepted and adapted Chickering and Gamson's (1987) "*Seven Principles for Good Practice in Undergraduate Education*" and applied them specifically to online education. Chickering and Gamson supported the view, based on their research that best practices in teaching online must have the following elements: (a) student-faculty feedback; (b) cooperation among students; (c) active learning; (d) prompt feedback; (e) time on task; (f) high expectations; and (g) respect for diverse talents and ways of learning. Therefore, Graham et al. utilized these seven principles and suggested specific expectations for faculty and applied their suggestions to the evaluation of four online

courses. These researchers concluded that those four courses had key strengths in encouraging active and diverse ways of learning. These key strengths were faculty and student interaction, faculty's knowledge of the subject, clearly articulated course goals, and overall availability of the online course. However, Graham et. al.'s study also concluded improvement was required in cooperative learning among students and additional attention was required for prompt feedback from faculty.

The Western Cooperative for Educational Telecommunications (WCET) in conjunction with the Council of Regional Accrediting Commissions (C-RAC) also developed a list of quality online practices that is supported by eight regional accrediting commissions (Benson, 2003). These accrediting agencies had responded to the growing need for standards by adopting and providing higher educational institutions with five separate components deemed as quality online practices in online education. According to C-RAC (2003), these quality online practices constitute a common perception of elements which reflect quality distance education programs. These standards included institutional commitment, student support, faculty support, curriculum and instruction, and evaluation and assessment. As the literature suggests none of these quality online practices are new, but they are now being accepted, supported and standardized by many regional accrediting bodies.

For the purpose of this study, the following quality online practices have been extracted from the literature review for discussion and reflection: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. These quality online practices are ordered to move along a continuum from institutional support to faculty practices. The following reviews each of

these quality online practices in detail addressing characteristics and the research that supports their use in this study.

Best Practices in Online Education

After a review of the literature pertaining to high quality practices in online education, a blending of concepts emerged that are indicative of quality online educational environments. For the purpose of this study, the following practices represent a merger of these concepts as delineated by the literature.

Support

In reference to online learning, an examination of support reveals a grouping of three distinct but interrelated concepts from the literature review, these are: (a) institutional support: the provision of policies and procedures provided by the institution offering online education; (b) faculty support: the provision of rewards, resources, and professional development provided to faculty at an institution offering online education; (c) technological support: the provision of stable hardware, software support and timely responses to technical issues provided by staff and faculty at an institution offering online education.

Thus, for the purposes of this research, the term support refers to the combination of institutional, faculty and technological support systems considered necessary to provide high quality online practices in online education. In addition, collaboration within teams will be folded into the initial discussion of the domain of support, because institutional, faculty and technological support systems are key elements necessary in the development and delivery of online course material. Thus, collaboration within teams

refers to the collaborative efforts made by small or large groups of faculty for the development and delivery of courses online.

Institutional Support. In 2000 the IHEP asserted that higher education institutions needed to undergo a change in order to achieve higher standards. This included revisions of policies, procedures, rewards, resources, and training provided by the institution offering online education. In addition, the IHEP (2000) recommended that technological support must be provided, including stable hardware, software support and timely responses to technical issues. Prior to the recommendations by the IHEP, in 1998 Henderson, in his paper *The Components of Online Education: Higher Education on the Internet*, pointed out that higher education is not alone in the world of online learning.

Henderson (1998) asserted that driven by demand and the vast power of the Internet, high stakes and competition for online educational presence are forcing higher education institutes to rethink their presence in online education and begin to provide tools, best practice standards and methods for online course delivery. Henderson further asserted that even though private industry had their hands deep in the pockets of online education, higher education had the long-term energy and adaptability to build an infrastructure of distributed online education. Henderson also stated that unlike private industry, higher education has the inherent commitment to the advancement of knowledge.

In 2005 the Sloan Consortium indicated that approximately one-half of public institutions rated online education as important in their long-term strategies for growth. This statistic grew from 49% in 2003 to 56% in 2005. In addition, the Sloan Consortium reported that online courses have become more pervasive within higher education. The

Sloan Consortium (2005), argued that over 62% of all undergraduate courses now have an equivalent online course. These statistics are more dramatic among doctoral granting institutions and schools with smaller enrollments, where up to 79% of all courses are being offered online. Thus, institutions once dubious about the growth of online education observe there is a greater penetration of online courses into degree programs as well as non-degree course offerings.

Anderson and Elloumi (2004) suggested that online education is more akin to distributed education, not simply distance education. This implies that institutions should rethink the strict traditional model of learners in online learning. Distributed education can signify not only learners taking online courses at any place, or at any time, but it also implies that a learner can receive an education at any point in their lifetime. This could impel institutions to rethink the idea of life-long learning as one of the driving forces of online course delivery. Anderson and Elloumi further proposed that if online education is to be thought of as distributed education, then one of the best practices that can improve the quality of online learning is to consider that the delivery methods be a center for collaboration and support.

One institution that agrees with the domain of support is the University of Illinois at Urbana-Champaign (UIUC). In fact, Huber and Lowry (2003) contend that it was visibly apparent during their contact with the online learning environment of UIUC, that the university utilized a set of policies and guidelines that provided a high standard of communication, cooperation and teambuilding with technical staff and faculty of the university. Their online programs were organized around learning cohorts and appeared to work within an environment where learning professionals, both faculty and staff, were

actively and cooperatively involved with the creation and delivery of instructional programs.

The Western Cooperative for Educational Telecommunications (WCET) in conjunction with the Council of Regional Accrediting Commissions (C-RAC) suggested that institutions needed to look at several items within the context of institutional, faculty, and student support in online education. They asserted that an institution needed to ensure that online education met the needs of its stated mission and objectives and that an institution's budgets and policy statements reflected its commitment to its online programs (Benson, 2003).

Law, Hawkes and Murphy (2003) asserted that beyond budgetary considerations, institutions must have the internal organizational structure in place to provide for the oversight, including academic oversight, of quality in online delivery and instruction. Law, Hawkes and Murphy further stressed that quality curriculum and delivery, rather than cost concerns for technology implementation, should drive the implementation of online educational programs.

Furthermore, C-RAC and the WCET suggested all involved parties including faculty, technological staff and the institution, need to consider the issues of workload, compensation, ownership of intellectual property and all parties must come to a mutual understanding and adoption of these policies. One method to ensure proper understanding of institutional policies is to embed them in internal professional developmental workshops and provide faculty support (Rumble, 1999).

Regarding the issue of workload, one institution assessed the impact of online courses on faculty workload and found no significant difference between the limited

number of online courses they offered and the face-to-face courses they reviewed (Gaud, 1999). However, in 2005 new evidence suggested that little more than 50% of higher education faculty deemed that workload remains the same from those institutions which have online offerings. It appears that over one third of online faculty today consider teaching online requires additional time and effort in their workload (Sloan Consortium, 2005).

In fact, faculty time and compensation issues were rated as the greatest barriers for teaching online in a survey conducted by Schifter in 2000. Schifter (2000) suggested that there is evidence to support the relationship between an organizations level of support in compensation and time and the lack of clearly defined polices in relation to the desire for faculty to teach online.

Faculty Support. Benson (2003) stated that faculty roles that are associated with online education called for special attention in order to provide quality online instruction. Benson suggested that best practices, regarding faculty support, are the straightforward ones, such as the institution's provisions for orientation and training in technologies, and training and mentoring programs for strategies for effective interactions in online delivery. In fact, Garrett and Vogt (2003) asserted that higher education organizations can increase participation and satisfaction in online learning by providing faculty and instructors release time during working hours to train in the use of new hardware and to work with others in the development of course materials. Garrett & Vogt further suggested that if institutions supported faculty in professional development opportunities, and supported greater compensation and incentives for teaching online, then faculty would be further satisfied with online education.

The Higher Learning Commission of the North Central Association of Colleges and Schools (HLC, 2000) also suggested that institutions must understand the regulatory and legal requirements to participate in online education. For instance, institutions should provide appropriate copyright laws and training to faculty and staff. Academic organizations should also comply with federal and state requirements to provide services to online students with disabilities. In addition, Law, Hawkes, and Murphy (2003) stress that intellectual property of faculty who create online courses must now conform to new guidelines set forth by their institutions and some institutions may require faculty to sign agreements related to their rights to the content and or development of their online courses.

In regard to other elements of faculty support, Lorenzo (2004) recommended that institutions must foster the idea of collaboration between faculty in their course delivery. Lorenzo stated that the process of online education must allow for faculty to become creators of online curriculum as well as consumers of knowledge. Lorenzo further indicated that faculty must be given the opportunities for ongoing professional development in order to become proficient in the uses of online technologies. In fact, because faculty are often accustomed to being the experts in their courses, the fear of appearing incompetent may cause faculty to resist teaching online. Faculty may feel that they have not been provided with adequate training or experience to competently teach online. Thus, Lorenzo indicated that if institutions supported the experiences of faculty mentoring programs with veteran online faculty or created supportive user groups to foster online learning between faculty, then faculty would have a greater desire to teach and develop online courses.

Benson (2003) stated that the Western Cooperative for Educational Telecommunications (WCET) and the Council of Regional Accrediting Commissions (C-RAC) further argued the need for ongoing professional development, and supported opportunities for faculty to discuss and discover new strategies for the delivery of online courses. Furthermore, Henderson (1998) quickly pointed out that institutions should provide ongoing professional development opportunities to learn new technologies and insisted that the use of online technologies should not become barriers to the learning process.

Bower (2001) also recommended that institutions need to review faculty workload, salary, promotion, and tenure issues when reflecting on faculty support. For example, even though faculty may require a greater investment of time and energy to create an engaging virtual course, traditionally faculty are compensated for their online development and delivery as if it were a normal course.

Furthermore, tenure is awarded by accomplishing an approved balance of research, service work, and teaching. If time is not allotted for faculty to develop their online courses and training to use the online learning delivery software, then faculty may not have the time to spend on other professional activities needed to be successful in the tenure process (Betts, 1998). This issue is acutely important for faculty at research universities that face a higher degree of expectations in research and publication. Thus, the added time pressure becomes a barrier to teaching online (Bower, 2001).

Anderson and Kanuka (2002) also stated that institutions that utilized the incentive of workload adjustments, or release time for faculty to prepare their online courses, improved the quality of their online experience. Bower (2001) lamented that the

challenge to give significant time to deliver and develop online courses and still provide an equal experience to a face to face class was daunting. Thus Anderson (1998) asserted that faculty must have the full support of their institution when teaching online.

Technological Support. Although professors can utilize the support from the viewpoint of the institution, many professors find it extremely difficult to navigate the myriad of technological hardware and software to effectively teach in an online environment. Brown and Green (2003) suggested that faculty continued to question if the money and time invested in technology is spent on adequate ongoing training for all those involved in the creation and delivery of online educational environments. The WCET also affirmed that an institution needed to address the adequacy of technical and physical facilities, which included the appropriate staffing and technical support to assist with online programs. The New England Association of Schools and Colleges (HLC, 2000) further pointed out the need for consistent and coherent technical framework for students and faculty to utilize and that an institution needed to provide students and faculty with reasonable technical support for every educational technology hardware, software and delivery system that it used in online education.

The Southern Association of Colleges and Schools (HLC, 2000) in conjunction with the WCET stated that institutions need to be aware of the limitations regarding differing technologies. For example, many students may not have up-to-date software or hardware capabilities required to successfully navigate through any given online course. In addition, rising costs may prohibit faculty and students from keeping up with new delivery platforms such as server hardware, video tools, and current software programs.

Caplan (2004) also recommended that technological support should always be available, and that technological hardware should be standardized, interoperable, and simple to use for faculty and students. Caplan (2004) regarded these concepts of technology support as the provision of best practices that will allow the users of online learning to have meaningful positive experiences. Twigg (2001) further discussed that technological support must be on-going because technology is always in flux and that online educational support should always be aware of, and plan for new modes and methods of online course delivery. Twigg stated that professional development was a critical component in technological support in order to provide meaningful dialogue between the creators, supporters and course delivery users.

Taylor (2004) insisted that although online education is not new, the seriousness of issues related to technological support and institutional support must be fully addressed before an online environment is started. Taylor maintained that best practice standards in technological and institutional support, could provide positive learning experiences for both the student and faculty members.

However, Hanna et al. (2000) declared that although an institution needed to provide technological support, it was also up to the faculty member or anyone else responsible for the implementation and delivery of online courses to become familiar with the technology resources available within their institution. Hanna et al. further suggested that many universities and organizations provide twenty-four hour a day support, and provide professional development opportunities for educators. Thus, it is also up to the faculty member to take advantage of professional developmental opportunities.

Collaboration and Teamwork

Another critical element in the realm of support systems that will create a successful online learning experience is collaboration and teamwork (Anderson & Elloumi, 2004). Collaboration and teamwork can be manifested in different forms depending on the goals and objectives for any given online course. However, for the purpose of this study, collaboration is defined as the efforts made by small or large groups for the development and delivery of courses online.

For example, initial collaborative efforts can be among faculty within the same discipline working together to develop online content. In another instance, collaboration could be partnerships and teamwork between faculty and students, in the creation and development of online course content. Another form of collaboration may occur when faculty members from different disciplines participate in the development of a course or course modules by contributing their individual expertise in a specialized area. For example, faculty can collaborate on the evaluation of online resources or Web design within a Learning Management System (LMS – i.e. WebCT, Sakai, Desire to Learn) for a best fit in an online course, or the design and development of online course content (Anderson & Elloumi, 2004).

Faculty Mentoring in Online Education. Lorenzo (2004) suggested that one of the best methods to increase faculty satisfaction for online teaching is the allowance of faculty collaborative efforts for course development. Lorenzo argued that it was critical for veteran online faculty to share their online teaching experiences with faculty who are just entering the realm of online teaching to increase quality online teaching practices. Caplan (2004) also argued that researchers often voice the fact that if online faculty are

mentored by veteran online instructors, then faculty can create a valuable partnership that will help to avert mere replication of face to face instruction in online education. Caplan further suggested that all online faculty mentoring should instill a supportive culture of values, beliefs and processes that facilitate open dialogue.

In fact, Kidney and Puckett (2003) stated that if faculty designed their work in a vacuum and without collaboration, then from an instructional design perspective, there would be a poor match between the available features of online course development tools used to engage learners with content. Kidney and Puckett also suggested that with collaborative investment in a course the activities and appropriate instructional strategies could be realized to match the intended learning expectations. Thus, through a collaborative process a deeper understanding of design and delivery could be grasped to help further create, analyze and revise a course to better meet the instructional and online learner needs.

Brown, Myers and Roy (2003) argued that without a team or mentored approach to online course development an institution may run the risk of creating text-based online courses that are often artificial and offer sub-standard online instruction. Unfortunately, there are numerous examples of poor andragogical application of online teaching out on the Web. The multitude of such poor examples of online text-based courses is partially due to the fact that faculty still consider online teaching a novelty, and that online instruction is inferior to face to face instruction (Caplan, 2004). However, one method to address concerns about inferior online andragogy is to create standards that will apply to the development of instruction that will include reciprocity and cooperation among faculty in the development and planning for teaching an online course. In fact, Harvey

(2002) recommended that faculty who worked together in the implementation and delivery of online courses were far more likely to have a successful experience and feel more satisfied with the framework of their course.

Collaborative Development. To further support the idea of cooperation, the Western Interstate Commission for Higher Education (WICHE, 2001) suggested that one of the best practices an institution must provide to its staff is appropriate support and training required to teach in an online environment. If faculty can agree that online course development requires training, and if they are willing to admit that the development process can be a complex endeavor, then it may be reasonable to believe that a high quality online course can be created through a collaborative effort (Caplan, 2004).

In addition, Hanna et al. (2000) argued that the concept of collaboration and team membership was important because it helped online faculty to plan, design, and implement online courses. In reality, according to Hanna et al., the very nature of online learning should embrace collaborative preparation and delivery, because the instructional design should be constructivist in its formation.

In fact, Benson (2003) asserted that collaborative development between stakeholders in the development and delivery of online educational programs is strongly supported by the Council on Higher Education Accreditation. Additionally, the Council on Higher Education Accreditation stated that building on a well established tradition of cooperation among faculty, staff and other stakeholders will help to achieve commonly held goals of assuring the quality of academic offerings regardless of the medium of their delivery (Benson).

Caplan (2004) further suggested that the core of an online course development team may consist of as few as five key roles: (a) the content expert, (b) the graphic designer, (c) the Web developer, (d) the programmer, and (e) the instructional designer. However, with many universities using off the shelf online teaching applications and tight budget constraints, it is reasonable to assume that some of these roles may not be necessary, and only a few people will fulfill most of the roles. Thus a mentoring program or small group collaborative effort to produce and instruct an online course may be appropriate.

However, Fein and Logan (2003) cautioned that without the benefit of collaboration and mentoring after a course has been developed and delivered, many faculty members allow their online courses to decay into the “in-the-can” syndrome. Fein and Logan defined this “in-the-can” syndrome as a faculty member allowing a course to remain unchanged over a long period of time. They suggested this is a major challenge for online faculty and stated that it is effortless for an online instructor to fail to revisit their online content and materials. Fein and Logan also declared that as assignment responses and entries are stored and recorded over time, it is simple for instructors to simply change assignment due dates and teach the online course over again without revision or retooling.

However, if co-authoring of a course, team teaching, mentoring or collaboration are consistently used over time in the deployment of online courses, then faculty can avoid the pitfalls of “in-the can” syndrome. Collaborative efforts will provide faculty with the ability to evaluate their online courses often and make adjustments to the learning content each time it is taught, thus reducing the negative impact of “in-the-can”

syndrome (Fein & Logan, 2003). In fact Johnson and Aragon (2003) claimed that in order to create quality content and assessments it is often a best practice for faculty to be flexible enough to allow other online stakeholders to review and help retool online content in order to keep content from growing stale.

Quality Online Teaching Practices

Another collection of recurring themes gained from a review of the literature of online education are specific online teaching practices which are as follows: (a) flexibility: the ability of a faculty member to accept change and allow students to play a more significant role in their own learning and embrace technology utilized to teach in an online environment and deal with sudden changes that often occur in an online environment; (b) feedback: clearly defined response time parameters set by faculty members and informational and acknowledgement responses that are constructive, flexible, reflective and supportive; and (c) assessment: the types of tools, rubrics, formative and summative guides that faculty utilize to grade or assess student learning in an online environment.

Flexibility

For the purpose of this study, flexibility will be described as the ability of a faculty member to accept change and allow students to play a significant role in their own learning. In addition, the ability of a faculty member to embrace the technology utilized to teach in an online environment and deal with the sudden changes that often occur in an online environment. Hoostein (2002) suggested when unforeseen interruptions were handled correctly by a faculty member; the flow of information from faculty to student will not be hindered.

Consistent Flow of Information. If the flow of information is smooth, the online course becomes more transparent to the student and the real purpose of course delivery and learning can take place. Hoostein (2002) further indicated that often unforeseeable events can occur with technology ranging from down servers and inability to connect to the Internet to incompatible software. Thus, Hoostein declared that faculty should prepare in advance, during the design phase of a course, to contend with technological problems, if needed, when the content is delivered.

In addition, Fein and Logan (2003) suggested that being a flexible instructor, allowed students to foster a greater trusting relationship with their faculty member. For instance, faculty who allow students to submit assignments in different software or allow students different delivery methods when the “requested” method is not functioning might make students feel less anxious (Fein & Logan).

Hanna et al. (2000) also affirmed that in order to gain trust and leverage in an online learning environment, faculty should continually assess their course effectiveness and be willing to change their selected instructional methods, media and materials in order to help students learn and be less anxious about their online learning experiences. Furthermore, Hanna et al. concluded if faculty had an appropriate amount of interactions built into an online course in the design phase of the course, then faculty would have a greater opportunity to deal with unforeseen problems if they should arise. In fact, Benson (2003) stated that the Council on Higher Education Accreditation insisted that an important best practice in online education is for the inclusion of appropriate amounts of interaction (synchronous or asynchronous) in the design of an online program, prior to its delivery.

Flexibility with student involvement. Huber and Lowry (2003) had recommended that faculty members must be open and flexible toward online learners. In other words, Huber and Lowry suggested that working professionals often make coursework second place to the demands of their jobs and family. Therefore, an understanding online faculty member needed to make the most of these difficult situations and provide greater flexibility with deadlines for assignments and coursework. They also supported the need to allow students to bring their own practical real world experiences into online discussions and formative assessments, thus allowing students to become a valuable resource and a greater participant in the online experience.

Allowing students to become more involved is seen by many faculty as a shift in education from a transmission model of education towards a constructivist model that exploits computer mediated communication (Rumble, 1999). This change creates a new domain for collaborative learning (Harasim, 1989). As Harasim asserted, with the advent of online education, lecture bound instructors should become more flexible to instructional delivery. Rumble (2001) further suggested that with the use of new technologies, online learners have the capacity for greater independence with powerful computing tools for independent learning.

In other words, Rumble (2001) suggested that online learners could bring their own real world experiences into online learning and gain from the powerful examples derived from those interactions. Furthermore, Hiss (2000) stated that students can often be more informed about a particular subject matter than the faculty member who is teaching a course and as a “best practice” faculty should not feel threatened, and be

flexible enough to allow the student to bring their wealth of knowledge and experiences to the online class.

Hanna et al. (2000) also suggested creating a flexible framework for an online course and utilizing topic-driven assignments that feature exploration and interactivity of content. Hanna et al. further stated that providing flexibility in a syllabus will likely induce students to become more involved in their own understanding of the online learning outcomes. In actuality, the ability to create a flexible online framework and syllabus and the ability to “revise” an online course as necessary, can motivate faculty to move away from a linear module design of a course to a more engaged model (Kidney & Puckett, 2003). Furthermore, Kidney and Puckett state that the ability to be flexible and retool a course will allow online learners to ultimately share new challenges, interactivities and opportunities for success.

In addition, Huber and Lowry (2003) suggested that faculty should be flexible enough to accept feedback from students in order to help retool or refine their online course. Huber and Lowry stated that enabling students to give their own experiences and prompt them for feedback related to the design and implementation of a course could help to set up a positive co-learning experience with online students and make them feel more connected to their course.

Feedback

Teaching online can be extremely complex and challenging. Thus, studies of quality online practices can provide an appropriate perspective that can assist faculty members with providing effective methods of instruction. In 2002 the Sloan Consortium addressed feedback and interaction between faculty and students as one of the important

factors in quality online teaching. For the purpose of this study, feedback refers to clearly defined response time parameters set by faculty members and informational and acknowledgement responses that are constructive, flexible, reflective and supportive.

The Sloan Consortium (2002) insisted that feedback, at the onset, had to be timely and adaptable to change. The Sloan Consortium also concluded that feedback and interaction in an online environment can provide students with the opportunity to build on previous knowledge, to negotiate meaning, and to act as a measure of social presence. Indeed, Swan et al. (2000) suggested that the more course assessment was focused on discussion and feedback from the instructor, the greater students and faculty were satisfied with their online courses.

Clarity of Feedback. Collison, Elbaum, Haavind, and Tinker (2000) suggested that addressing feedback was one of the keys to faculty/student satisfaction and learning online. Salmon (2000) recommended that faculty needed to provide clear organization, guidelines and appropriate etiquette in the use of online feedback. In fact, to support the need for clarity in feedback, Achtemeier, Morris and Finnegan (2003) elaborated on the theme of feedback by emphasizing the need for faculty members to clearly establish and communicate their email response policy to students. Achtemerier et. al. proposed that since students have the capability to email faculty anytime from anywhere, students will begin to feel overlooked if they do not receive responses immediately. Therefore, the researchers concluded that it is critical in quality online instruction for faculty to clarify expectations for responses and these should be established at the onset of an online course and within the syllabus.

Reflective and Flexible Feedback. Conway (2003) suggested that without clarity and prompt feedback there is no real interaction, and without it, students do not sense they exist in an online course. However, Fein and Logan (2003) stated that if faculty utilized reflection and waited to think about a response to a student's inquiry prior to making an immediate response, perhaps a more meaningful dialogue might open up between faculty and the student. In fact, Berge (2000) suggested that if faculty provided clear online feedback, there may be real advantages of online synchronous and asynchronous communication over face to face communication. For example, with clear feedback students who normally may not speak up in class will find it more comfortable to honestly share their thoughts and questions in an online environment.

Initially, Berge (2000) suggested that feedback should be flexible and that students should be able to access the course at anytime. Hoostein (2002) defined flexible feedback as the ability for an instructor to make changes quickly and to make feedback adaptable to change, based on new information related to the purposes and tasks to which instruction is applied. Furthermore, Berge also indicated that feedback should be reflective and that students and faculty required time to digest and think about what had been written. Berge insisted that feedback should be student-centered and proposed that students related more directly with an instructor who discussed, reflected and posed questions.

Promptness of Feedback. In addition to Berge's (2000) suggestions, Chickering and Ehrmann (1996) found that without prompt feedback students tended to feel isolated and disconnected from their class. Therefore, Chickering and Ehrmann indicated that clearly defined feedback at appropriate times results in a high degree of student

satisfaction. Indeed, one of the best practices as stated by the Western Interstate Commission for Higher Education (WICHE, 2001), which has been adopted by eight regional accrediting bodies, insisted that response to students must be timely and interaction must be assured between faculty and students.

Bransford, Brown, and Cocking (1999) suggested that within the realm of online feedback, students needed to know when, where and how to use the knowledge that they are gaining. In addition, Newberry (2001) insisted that feedback must be timely, because timely feedback is valuable for the establishment of social presence in an online environment. Thus, Aragon (2003) argued that online feedback should follow within twenty-four hours after a student had requested a response, unless otherwise stated in the syllabus. Aragon asserted that online learners needed to feel that their messages are valued by the instructor of the course and that their messages should have the same amount of priority as any other message.

Balance of Feedback. Consequently, in setting the expectations for feedback in an online course, it may be possible to keep from over-communicating with students. Hacker and Niederhauser (2000) have argued that too much feedback can actually hamper online learning. For example, if online students are overly coddled, Hacker and Niederhauser implied that students may just wait for the “correct answers” or “prompts” rather than maximizing their own individual efforts. Hacker and Niederhauser further advocated that, along with the effective use of communication, if response time parameters were set for online feedback at the beginning of an online course and within the syllabus, students may not become overzealous in their communication and still receive the encouragement and satisfaction they required for real meaning to occur.

Feedback and Redundancy. White and Weight (2000) suggested that beyond setting guidelines and deadlines for communication, it is often important to consider some amount of redundancy. For instance, the occasional reminder to students when assignments are due can be effective when students are attending an online class and do not have the “perfect” memory when due dates occur. In addition, Bransford et al. (1999) suggested that repetition of elements within the content area should be included in dialogue with students in order to promote clarity and understanding. To further promote understanding, Swan et al. (2000) stated that if learning objectives are repeated to students often and faculty clearly remind students of these objectives, then students will be more satisfied with their online courses.

Constructive and Supportive Feedback. Depree (1998) suggested that feedback needs not only clarity, reasonable time parameters and redundancy, but it needs to be constructive and supportive. Constructive online feedback encourages students to actively identify their strengths and weaknesses while providing a climate that encourages growth. Depree further suggested that carefully crafting responses to students’ assignments allows the student to consider alternative solutions and enhances their critical thinking.

Summative and Formative Feedback. Schwartz and White (2000) further defined feedback and made a distinction between various types of feedback. They suggested that feedback should be both summative and formative. Summative feedback can provide students with information about their course, or provide information or responses on accomplished tasks. Summative feedback often provides students guidance concerning where they are in the course and how they are progressing. Schwartz and White contend

that formative feedback may influence behavior or thoughts and can best be defined as primarily motivational. This type of feedback is ongoing and creates an atmosphere of participation. Formative feedback can help students stay on task and modify their approach or direction when necessary on an assignment or task.

Furthermore, Schwartz and White (2000) argued that utilizing both summative and formative feedback allows the instructor to provide a bidirectional flow of communication that helps students shape their own learning and fulfill the expectations or outcomes of the course. Regardless if feedback is summative or formative, the Council for Higher Education Accreditation (CHEA, 1998) stated that institutions should recognize that a sense of community is important to the success of many students and that an ongoing dialogue is beneficial to students. Thus, CHEA strongly urged as a best practice in online learning, that faculty provide realistic and appropriate interaction, either synchronous or asynchronous, between instructor and students and among students. CHEA further stated that feedback and interaction should be reflected in the design of the course or program as well (Benson, 2003).

Collison et al. (2000) suggested that faculty who use the characteristics of formative and summative feedback should consider the types of online dialogue that may occur. For example, online feedback may have argumentative, pragmatic or social components. Argumentative online feedback does not necessarily have to be negative; it can allow or challenge students to move beyond a discussion, to honor multiple perspectives on a specific idea or topic, and to reexamine their own ideas to seek deeper meaning and outcomes.

Social Feedback. According to Swan (2002), online social feedback does not necessarily have to be benign in nature. In fact, according to Collison et al. (2000), social feedback allowed students to get to know their faculty and fellow students. Social feedback also fosters a more personal dimension to online classes. Swan stated that creating some form of social presence is critical in an online environment and helps students feel less isolated. Additionally, Swan suggested that another form of social feedback is pragmatic feedback, which often requires a specific goal and is limited in scope and time. The goal of pragmatic feedback is not to persuade but to spark inquiry and to inform collective participants or individuals of various approaches to whatever subject matter is being discussed.

These various forms or characteristics of online feedback can distinguish themselves to help sculpt the learning process. Certainly the argument can be made that any kind of feedback in online education is not the same as verbal communication. However, it is important to remember that faculty who are teaching in an online environment should strive to provide an equivalent experience, not an equal experience to face to face instruction (Berge, 1998). Berge stated that online feedback can contribute to a positive experience in online teaching. If feedback is both formative and summative and provides both constructive and supportive processes along with clearly defined response times, the literature indicates that feedback can be one form of quality online best practices that can be a catalyst for learning in online education.

Assessment

It cannot be overstated that online education has had a profound effect on the way that faculty present their courses to students. Higher education faculty consistently need

answers in the methods to grade students' work online. Furthermore, higher education faculty need to understand the different techniques in which assessment can be delivered. For the purpose of this study the term assessment will be utilized to discuss the types of tools, rubrics, formative and summative guides that faculty utilize to grade or assess student learning in an online environment. This section will also address how learning theory can be bound to online assessment.

Online Assessment and Theoretical Underpinnings. Proponents of online education assert that faculty already include educational theory into online learning experiences by assuming the interaction among students and with faculty promote active learning or deep learning (Marchese, 1997). However, Green (1999) stated that online learning has yet to transform classroom instruction and that while online education does change the learning experience, there is little evidence that academic achievement has been enhanced. Thus, in considering assessment, Speck (2002) concluded that whatever educational theory was applied to any given online course, assessment must not become a separate entity of the theoretical underpinnings. Simply stated, the theory of assessment presumes and informs a theory of learning.

Traditional and Alternative Paradigms. According to Speck (2002), professors who teach in online environments face the same dilemma, regarding how to assess students online that face-to-face professors encounter regarding assessment in a traditional classroom. Speck suggested that all classrooms, virtual or otherwise, should approach assessment with a "coherent theory of learning." Speck, challenged the notion that good teaching and assessment is based on "craft knowledge." Speck asserted that "craft knowledge" is the expertise that faculty bring to their course regarding a particular

subject matter. He supported the idea that professors should consider the approach to online assessment in a cohesive learning-teaching-assessment paradigm.

Speck (2002) regretted the fact that the complicated disagreements among experts about the nature of learning and how learning should be assessed fuels many professors' loyalty to "craft knowledge" of assessment in an online environment. Speck suggested professors rely on their face-to-face teaching success and often overestimate their abilities to teach online. Speck postulated this is often due to restrictions in time requirements; and faculty simply rely on what they "know" that works in the face-to-face classroom.

In 1998 Anderson suggested two major competing paradigms of learning, regarding teaching and assessment. The paradigms were compared on nine different points of reference, based on their theoretical underpinnings and their philosophical ideals. Anderson (1998) referred to them as the traditional and the alternative paradigm. In her critique of these different paradigms, Anderson asserted professors who used the traditional paradigm, could assume that the purpose of evaluation is to document learning. Anderson implied that within the traditional paradigm, students were seen as *tabula rasa*, or blank slates that need to be filled with information and students could then demonstrate their retention of information by answering test questions correctly. Bloom (1956), labeled the concept that students are solely recipients of knowledge as surface learning and does not reach the active or deep levels of learning. Thus, a criticism has evolved in assessment of online courses that only engage in predominantly surface learning and "test" taking, which is promoted by traditional assessment methods.

Anderson (1998) proposed that the alternative paradigm promotes the use of writing skills and active learning to engage students in higher order thinking skills, such as synthesis, analysis and evaluation. However, Anderson also suggested that such forms of assessment often do not give uniform results and therefore can be more difficult to prepare and evaluate. For example, in the traditional approach, assessment can take the form of standardized norm-based tests that define learning in terms of “right” and “wrong” answers. Learning is assumed to be objective. If tests can be deemed reliable and valid, then the test “score” indicates an online student has learned the material.

On the other hand, Anderson (1998) stated that the alternative model can put a heavy emphasis on the context of learning within a class. In this model learning is linked to multiple learning situations, real world scenarios, and can have a preference to criterion-referenced assessments. The alternative model perceives students as inquirers of knowledge, not receptacles of information.

Elements of Quality Online Assessments. Johnson and Aragon (2003) insisted that in order to meet the challenge for properly assessing students in an online environment, faculty and instructional designers must match the philosophy of teaching and learning that is applicable to the goals and objectives being taught online. Thus, Johnson and Aragon implied the traditional paradigm should not always be thrown out in favor of the alternative model. They argued that assessment should always be based on the desired learning goals and instructional methods matching the appropriate learning theory.

For example, social learning theory could be incorporated in assessment by utilizing group interaction, peer review and personal feedback. In addition behavioral

learning theory could be used in assessment methods by creating positive reinforcement and using repetitive tools to further expand the desired learning goal.

Rule-of-Seven and Chunking. Johnson (1997) also suggested that when reflecting on assessing students in an online environment, that a best practice could be using cognitive and constructivist learning theories and employing assessments that address multiple senses, “chunking” information and building on previous lessons in motivating ways. Clement (1985) stated that most adults can manage about seven “portions” of information at one time and that any more information overloads short-term memory. Thus, Clement suggested that the “rule of seven” should apply to instructional design. This “rule of seven” applied to creating instructional content into small groups, or no more than seven pieces of content at one assignment. Clement suggested this gives students the opportunity to learn each “chunk” of information thoroughly before being presented with new information.

Reflective and Collaborative. Johnson and Aragon (2003) claimed that in order to create quality assessments, the following elements should be included: hands-on activities, address individual differences, reflection, interaction, repetition, collaboration, positive feedback and the avoidance of information overload. Johnson and Aragon stated that all of these components were critical in providing positive online learning experiences.

Clark (1999) also suggested that assessment online should be reflective, such as the use of journaling, online diaries, and reflective writing assignments. Clark recommended journaling as a continuous reflection both for the student and the instructor. Johnson (1997) asserted that online courses should provide assessments that

provide active learning experiences, such as project work, small-group work, discussions, decision making and problem solving. Johnson declared that active learning assessments online provided sustained thinking over a period of time and reached higher order thinking.

Branzburg (2001) stated that if active learning assessments were used, then online course effectiveness can be monitored by the success rate of students with problem solving, discussions and group work. Branzburg concluded that if a single summative assessment is used, such as a final exam, then faculty might not have an accurate indication of how effective an online course can be. However, careful monitoring and formative assessments, such as discussions and group work, might help to pinpoint where an online course succeeds and where it fails. Nevertheless, Selfe (1999) stated that the central function of online assessment is not to prove whether or not teaching and learning have taken place, but to improve the quality of teaching and learning and to increase the likelihood that all members of society will acquire a full and critical literacy.

Mills (2002) believed that assessment, if used properly, could provide both literacy and improved learning. Mills asserted that online educational content and assessment required variation, creativity and needed to address the different learning styles of online students. In addition to creativity and variations to content, De Simone, Schmid and Lou (2000) suggested that web courses should use structured activities and group collaborations to create meaningful online assessments

Jiang and Ting (1999) further support this idea of meaningful interaction, group work and collaborations within assessments in an online course. In a study that utilized course evaluations and surveys of 287 students in web-centric courses, Jiang and Ting

also suggested that assessments that were interactive between students and that included input from the instructor, in the discussion area, were rich and meaningful. They concluded that written assignments that were collaborative, structured, and included formative feedback from the instructor correlated with student's perception of learning.

However, Muirhead (2000) also reported that quality assessment was a constant source of concern in his study of online instructors. Muirhead declared that since faculty were unable to interact in a face to face classroom; many online instructors were worried that academic honesty and integrity were more challenging in online education. In addition, McAlister, Rivera and Hallam (2001) raised another potential concern that there was difficulty in ascertaining the students' identity when communicating over the Internet. Hanson (2004) asserted that plagiarism, cheating and integrity in taking online tests are also issues in ensuring quality online instruction.

Although online education critics have suggested there is no guaranteed method to ensure students are held accountable, Heberling (2002) concluded that many strategies can be utilized to detect and prevent plagiarism and academic dishonesty. Heberling suggested using sites that reverse Internet searches and track back to original sources. He also suggested that constant contact with students and forming assessments around discussions and formative work also could be utilized to detect academic dishonesty. Hanson (2004) asserted that taking into account the challenges and barriers to online assessments will help faculty ensure that quality online instruction is available.

Rubrics. Norton and Wiburg (1998) asserted that rubrics are an excellent tool to ensure students are held accountable. Norton and Wiburg defined a rubric as a written set of measurable elements for scoring student performance such as: writing, presentations,

portfolios, tests and other performance tasks. Ford (2002) suggested that rubrics can provide an essential component of the grading process in online classes. Ford declared that if rubrics for assignments are provided to online students at the onset of the course, then students can be prepared to plan, draft and execute their online course assignments. Furthermore, Picciano (2001) concurred that online students can benefit greatly from rubrics if they are included as a link from the syllabus. Picciano endorsed the use of rubrics and suggested that a grading rubric for all assignments should be made available the first day an online course is accessible to students or as early as possible in advance to each assignment or activity.

However, Schweizer (1999) declared that a rubric could be anything from a simple checklist to a detailed analysis and should be avoided. Thus Ford (2002) stated that because there can be a vast array of possible measuring criteria, rubrics must be carefully devised to measure what they are intended to measure. Simonson (2000) also suggested that faculty should be careful in crafting rubrics because they can have a propensity to diminish creativity in students and allow some students to turn in the bare minimum to meet the requirements of a rubric.

Aligning assessment with course objectives. Nonetheless, Deubel (2003) stated that to ensure the quality of assignments in the online learning environment, the faculty member should design online courses to use rubrics in collaborative assignments, include exemplary student work, permit revisions to homework, and encourage learners to initiate course-related discussions. In addition, Deubel also suggested that assessments should be aligned with course objectives and subject aims. Deubel further asserted that

assignments constructed to build on each other help to create a formative tool for assessing online learning.

Summative and formative assessments. Serwatka (1999) stated that summative testing is another assessment tool that can be used in online learning, although Serwatka promoted that students should come to campus to take online tests to ensure academic honesty. However, Olt (2002) promoted the special use of username and password combinations to take summative online tests. Olt also asserted that the use of time limits, randomized questions from questions pools and number of permissible accesses to tests were also methods to help prevent academic dishonesty.

However, Wu and Hiltz (2004) declared that formative assessments should be employed to reach the higher order thinking, critical thinking and problem solving skills. Wu and Hiltz asserted that assessments such as ongoing online discussions and writing assignments must be integrated into an online educational course. Wu and Hiltz also suggested online discussions and writing assignments that are tied to learning outcomes provided online learners with the potential of higher-order thinking skills. Johnson (1997) asserted that formative assessments provided students with the ability to foster further growth in problem solving skills and declared that providing formative learning assessments online could promote sustained thinking over a period of time and reach higher order thinking skills.

Nevertheless, Strickland and Strickland (1998) stressed that regardless of the utilization of formative or summative methods, a facilitator should be able to accommodate student learning styles in assessment to help promote successful learning. Strickland and Strickland stated that the learning styles that are most successful in online

education are: self-directive, task-oriented, independent, interested in problem-solving, real world scenarios and are able to work in textual communication.

Evaluating online assessment. Speck (2002) insisted that while learning styles were important in assessment, the faculty member must ultimately use professorial judgment as a valid part of the evaluation process. Speck stated that assessment should not be reduced to objective criteria and that human judgment, grounded in a theoretical base will have value in an online class. Speck further pointed out that it is realistic that grades are required in the existing system of higher education and should serve to assess grades, not grade assessments. On the other hand, Palomba and Banta (1999) stated otherwise, and suggested that assessments utilized for online learning needed to be evaluated periodically.

Palomba and Banta (1999) also asserted that assessments should have strong faculty buy-in and that multiple methods should be used when formulating assessment. However, Palomba and Banta did concur with Speck (2002) and supported the binding of assessments to explicitly stated learning outcomes. Additionally, Palomba and Banta said that assessment strategies should always clearly distinguish, within the syllabus, if the assessments are formative or summative or a combination of both types of assessment.

Clearly, assessments of online courses interconnect at two key components: assessment of learners within a course and assessment of a course (Anderson & Elloumi, 2004). Any assessment of a course exists as the formative or summative evaluation of how “well” an online learner is doing with their intended learning outcomes. Assessment of an online course consists of tools to ascertain how much learning took place and how

well the course environment worked for the learners. In fact, Higher Learning Commission of the North Central Association of Colleges and Schools (HLC, 2000) also suggested that institutions must understand the need to not only use best practices in online assessment of students' work, but online courses themselves must have tools in place to demonstrate a consistent overview of how well the assessment meets the objectives of the course, the intended outcomes, and the mission of the institution.

Online assessment, as previously stated, is not without its problems. However, Clark (2002) declared that faculty should be given time to explore the marriage of effective learning theory tied to assessment to maximize the effectiveness of online education. Thus, not only helping students obtain information, but gain a clear understanding of what they know and why they know it. According to Clark, if online learning is tied to active processes, constructivism, complex ideas, autonomy and self-references and other adult learning techniques then given the advantages and disadvantages of online learning, assessment in an online course can be just as vigorous and meaningful as in a face to face classroom.

Adult Learning Techniques

Online education is largely directed to the nontraditional adult learner. Gibbons and Wentworth (2004) declared that to reach the nontraditional online learner, three key elements must be addressed. These three key elements are the technology, the curriculum and the instructor. These three elements must be integrated into one smoothly operating delivery tool and it is up to the faculty member to design, construct and deliver meaningful online course content regardless of the technology utilized (Charp, 2000).

Gibbons and Wentworth (2004) further asserted that online learners are the products of a fast moving society that value their productivity, their time, and want measurable results. Indeed, Bedore, Bedore and Bedore (1997) stated there is a clear need for substantive differences between online and face-to-face instructional methods and that technological advances have created an environment where students are not always tied to synchronous learning activities or to physical meeting places. Gibbons and Wentworth also described online learners as self-directed learners and suggested that an examination of online education might reveal a demand for difference in online instructional strategies. Thus, there is a need to evaluate the learning theory that is tied to the online educational practices.

Pedagogy and Andragogy in Adult Online Learning. In recent years, an examination of online learners and their needs has revealed the need to distinguish between pedagogical and andragogical approaches to education in an online teaching environment. For the purpose of this study, andragogical concepts will be explored as an important element of best practices in order to teach effectively in an online environment. Pedagogy refers to the traditional instructional approach to education while andragogy refers to an approach to learning that is adult centered and based on self-directed learning. The phrase andragogy was coined by an acknowledged leader in the field of adult education, Malcolm Knowles who utilized the Greek words *aner*, meaning adult and *agogus*, meaning leader or guide. He united these phrases to illustrate the science and art of assisting adults in the learning process (Knowles, 1980).

Online education has been primarily directed to nontraditional learners in the past, although people of all ages are beginning to choose nontraditional education to start and

advance their careers (Charp, 2000). Thus, universities and higher education learning facilities are launching online courses at a startling rate to answer the call of the growing number of online learners (Sloan Consortium, 2005).

Many institutional administrators, preoccupied with increasing pressures for enrollment and funding issues, presume that online teaching environments are simple to use and are inherently sufficient to ensure quality online programs. White and Weight (2000) suggested that one of the biggest mistakes that an institution can make is to assume that all faculty fully understand the differences between traditional and online delivery methods and that course materials converted or developed online can simply be transferred from lecture notes to online text. Bedore et. al. (1997) insisted that to ensure quality online teaching, faculty should utilize adult learning techniques as part of a regimen of quality practices in online learning. Bedore et.al. also suggested that faculty who teach online should understand the nature of the online learner is grounded in andragogical theory and this theory can be conceptualized in five broad categories as characterized by Knowles (1980).

Knowles (1992) described these basic andragogical categories in the following manner: (a) the concept of instruction moves from lecturer to facilitator, (b) the concept of the adult learner is increasingly self-directed, (c) the motivation of the learner in many cases moves from external rewards to internal incentives, (d) the orientation to learning for the adult becomes more problem and task centered, and (e) the adult learner can bring a wealth of information and experience to class.

Student Centered Instruction in Adult Online Learning. Merriam and Brockett (1997) suggested that in order for online faculty to effectively reach the adult learner,

faculty need to embed adult learning techniques into their online courses. Initially, this suggests moving the responsibility for learning from facilitator to the learner. Merriam and Brockett further suggested that utilizing a collaborative learning model for students that is learner-centered rather than instructor-centered and dialogue-based rather than lecture-based provides a more meaningful and satisfactory learning experience for the online adult learner.

Experience and Knowledge in Adult Online Learning. According to Hiss (2000), an adult-centered approach to online teaching assumes that students bring not only a wealth of knowledge to an online class but they bring experience to a class as well. In many instances the learner may be as knowledgeable in a given subject as the facilitator of the course. Because of this, Hiss suggested that students should be comfortable in sharing their expertise with the class without fear of reprimand from the facilitator. Hiss further offered that faculty who suppress students' expertise and who dominate a given course can potentially stifle the students' desire to learn and the adult learner will have a tendency to become inhibited with dialogue in a course.

Self-Direction in Adult Online Learning. Offir and Lev (2000) suggested that faculty needed to acknowledge the online learner's self-direction. Their research further recommended that adult learners' motivation and orientation to learning are explicitly tied to adult learning techniques. In their analysis of faculty interactions with students online, Offir and Lev promoted and encouraged adult learning techniques in the following manner: (a) social: faculty should create a positive atmosphere and support motivational affective aspects of learning; (b) procedural: faculty should provide practical and routine information regarding administrative and technical issues related to a lesson

or course; (c) expository: faculty should present content that is relevant and meaningful to students; (d) explanatory: faculty should use questions or comments initiated by the student in order to explain content; (e) cognitive: faculty should present questions or learning tasks that require students to actively engage in processing the given information and finally; (f) learning assistance: faculty should attempt to gain and maintain students' attention via clear organization of content to facilitate retention.

However, in a dissenting view, Cassidy (2003) considers Knowles' five basic tenets for andragogy as applicable to learners of all ages that have self-directed and intrinsic desires to learn. Cassidy contends that the sharp distinctions that Knowles attempted to draw between older and younger students amounted to degrees of characteristics and not different characteristics for learning. Although, Cassidy did agree that the adoption of adult learning techniques will provide a solid best practice in online teaching.

Five components of Adult Online Learning. Cassidy further defined strong support of adult learner-centered approaches as follows: (a) social: learn who the students are, their backgrounds, interests, reason for taking a course, and integrate this into information that is discussed early on in an online course. It may even be used to target content; (b) scaffolding: encourage students to discuss relevant experiences and ask questions online to support and expand on these experiences. In addition, encourage students to identify how a topic applies to matters of interest to them, how it can be built on to become clearer to all involved, and how a subject relates to the larger world; (c) critical thinking: pose questions to students online at higher levels of thinking to encourage learners to integrate what they already know with what is being presented and

have them stretch their learning to new horizons; (d) flexibility: allow students to define their own projects and applications that can demonstrate their mastery of a subject, and finally; (e) support: provide both individual and group support to students who need it. Not all online students are ready or able to be highly self-directed at all times. In addition, Cassidy stated that faculty should monitor students individually to facilitate successful learning.

Hanna, Glowacki-Dudka and Coinceicao-Runlee (2000) also suggested that utilizing adult learning techniques in online teaching is essential to the quality of an online course. These researchers indicated that adult learning techniques, when applied appropriately, can provide students with a clearer understanding of content, development of skills, and prepare students to become more reflective learners. Hanna et al. also indicated that if adult learning techniques are not utilized as a best practice in online learning, then real barriers to online learning may ensue and students may become discouraged in online class participation.

Clarity and Quality in Adult Online Learning. Hanna et al. (2000) also advised that utilizing adult learning techniques to gain agreement with students in the structure, rules, norms and procedures for discussions is necessary. This idea of clearly defining the structure and rules may help to develop trust between faculty and students in an online course. Hanna et al. further asserted that allowing students to suggest modifications to rules and procedures in an online course may give them a sense of ownership.

Along with these examples of adult learning techniques in an online teaching environment, there is a perception of suggesting constructivist activities for the student as part of the successful implementation of an online course. Conceicao-Runlee and Daley

(1998) point out that practical team-building activities, team projects, the sharing of course assignments, collaborative assignments, case studies and real-world simulations online can all encourage substantive learning in an online teaching environment. Conceicao-Runlee and Daley further suggested that a constructivist approach went hand-in-hand with adult learning and that in order for online courses to be successful a best practice would be to utilize the theory of constructivism in the creation and design of an online course.

Palloff and Pratt (2001) also agree with using adult learning techniques online. These researchers asserted that adult learning techniques provided a constructivist approach to online education and extended the critical thinking skills of students. Palloff and Pratt firmly advocate that faculty members must consider creating constructivist activities that can fully utilize the nature of asynchronous communication online.

Although there are a myriad of adult learning techniques, the literature suggests that the best practice for quality online teaching is the utilization of a student centered approach based on the underpinnings of andragogical theory and practice.

Chapter Summary

Speck (2002) asserted that the impact of the learning experiences consistently relies heavily on how online instructors interact with their students. In addition, Speck declared that institutions should begin to follow standardized best practices that involve the total participation and support from online faculty members. It is important to note that many educators are not advocates of any single set of practices or procedures because they do not believe that online instruction can help solve teaching and learning issues.

Anderson and Elloumi (2004) assert that many faculty members believe online learning environments have become far too commercialized and do not add any value to the learning experience. In fact, some faculty are certain that even with standards, protocols, and best practices in place, that somehow a university degree becomes devalued, and may reduce the overall thoroughness of a university degree if classes are held online. On the other hand, advocates of online learning suggest that education online provides enhanced learning and relieves the bounds of space and place for students that may otherwise be unable to obtain a quality education (Aragon, 2003).

Unfortunately, major for-profit organizations will continue to have an impact on how institutions respond to the infrastructure and assessment of their online educational environments. Thus, it is necessary for universities to set the bar for quality online instruction. There are clear challenges that universities face within the realm of online education. These challenges range from the demand for online courses, escalating costs of technology, legal challenges pertaining to intellectual property, training and retraining of all involved in the online process, to the methods by which programs and online environments are assessed and held accountable.

A clear direction might be to utilize current policies, procedures and best practices set forth by accrediting bodies to provide improvements in online curriculum delivery, design and implementation. The literature has revealed such an inventory of best practices that include: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. It is the intent of this study to examine the extent of use of these best practices by higher education faculty in West Virginia in online educational environments.

CHAPTER THREE

Methods

Educational research studies often involve descriptions of natural or social phenomena, their form, structure and relationship to other phenomena, thus shedding light on questions concerning their value or place in an educational setting. The descriptive function of research is heavily dependent on an exhaustive literature review, instrumentation for measurement and on observation (Gall, Borg, & Gall, 1996). This chapter describes the research procedures that were used to investigate the extent to which higher education faculty in West Virginia agree their online courses reflect the use of best practices. These best practices have been defined by a review of the literature and are supported by C-RAC (2003). The research question this study sought to answer was:

To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques?

As a follow up to the main research question, an ex post facto corollary set of questions examined the effect that years of teaching in higher education and online teaching experiences have on quality online teaching practices.

Furthermore, incorporated into this chapter are descriptions of the research design, participants in the study, the data collection procedures, discussion of the survey instrument, and the intended statistical analysis.

Research Design

This research utilized a cross-sectional survey that was designed to investigate the extent in which West Virginia higher education faculty use quality online practices in online instruction. This research was a non-parametric descriptive study.

The *Survey of Online Educational Practices* was based on a careful and in-depth review of quality online teaching implementation and practices. Six characteristics were selected because they are supported by literature and are delineated by the Council of Regional Accrediting Commissions, to provide quality online instruction. This study examined: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. These domains were listed in order as they appeared on the survey.

Participants

The population of this study was gathered from higher education faculty members who teach online courses in West Virginia. These are faculty who teach distance education courses, that are Internet based, and who utilize tools that include content-based online instruction. Furthermore, the participants of this study were instructors who taught higher education in an online environment during the spring, summer and fall semesters of 2006. The research study included four year higher education institutions in West Virginia. The participants were identified by online coordinators, admissions departments, and information technology specialists at each of the 19 West Virginia higher education four year institutions. Four schools did not meet the criteria for the study and three schools choose not to participate in the study. The final population was 545 participants. All of the participants were sent surveys. Babbie (1973) suggests that a

return rate of 50% plus one provides an excellent review of the data without statistical bias. Additionally, the return rate of the sample was 290 at a p.05 level yielding a confidence rating level of 95%. Creswell (2005) maintains that samples of this variety can provide useful information for answering questions and hypotheses.

The sample consisted of tenured, non-tenured, full-time, and part-time staff that teach online courses. A Microsoft® Excel spreadsheet was created to categorize and organize the names, mailing addresses, job classifications and other demographic data related to the population. The participants were further divided into groups, based on employment classification. Additionally, Marshall University's Institutional Review Board (IRB) protocols were followed to protect human participants. The IRB approval was obtained prior to inviting faculty members to participate in the study.

Data Collection

A self-report survey (Appendix A) was mailed to participants in the fall of 2007. The sample population was mailed the following elements: (a) a cover letter introducing the researcher, the purpose of the study, a confidentiality statement, and contact information (Appendix B), (b) the survey itself, and (c) a self-addressed postage-paid return envelope. The cover letter also included the IRB approval number and information regarding tracking for re-mailing purposes. Surveys were coded with a unique identifying number and were tracked via a lookup table for re-mailing purposes to non-respondents only.

Within three weeks after the first mailing 53% of the respondents returned their surveys. A follow-up post-card (Appendix C) and a second packet with a follow up letter (Appendix D) were not required to increase the return rate. Literature indicated that

follow-up information could be utilized in an attempt to increase return rates (Berdie, Anderson & Niebuhr, 1986).

As previously indicated, the return rate of the surveys should be at least 50% plus one from the sample population (Babbie, 1973). Furthermore, Babbie stated that a return rate of 50% plus one provided an excellent rough view of the data with no statistical bias. In fact, Babbie found that a lack of response bias was far more important than a higher return rate. However, in order to obtain an acceptable response rate, a second and third mailing would have been made (York, 2003).

Instrumentation

According to Creswell (2005) a cross-sectional survey design is the most popular form of survey design used in education. A cross-sectional survey design allows the researcher to collect data at a single point in time. For instance, a cross-sectional design of a survey can examine the *current* practices, attitudes, and opinions of study participants. After a review of the literature pertaining to best practices in online education, a blending of concepts emerged that are indicative of quality online educational environments. No instrument was available that used this blending of concepts.

Therefore, this survey instrument was developed by the researcher and recommendations from faculty in the field of online education. The instrument that was used for this study is entitled the *Survey of Online Educational Practice* (Appendix A). Elements within the survey required the participants to report to what extent West Virginia higher education faculty agree their online courses reflect the following quality

practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques.

The survey utilized three sections: (a) the six principle quality practices, as defined in the literature review; (b) demographic data; and (c) an open-ended question for faculty to indicate additional factors that may have promoted or hindered their utilization of quality practices in online education. Babbie (1973) suggested that an open ended question provides respondent's additional room to write their own comments not found in a forced answer survey.

The demographic section of the survey asked participants to supply information such as faculty status, age, sex, years teaching in higher education, and years teaching online. In addition, an open-ended question was provided within the survey for faculty to indicate additional factors that may have promoted or hindered their utilization of quality practices in online education.

The quality online practices section of the survey explored the extent to which West Virginia faculty agree they are utilizing quality practices in their online courses. Questions were rated on a 6 point Likert scale ranging from 1 (1 = strongly disagree) to 6 (6 = strongly agree). According to Kerlinger (1964) the greater the Likert scale number (i.e. 5 point - 7 point scale), the greater the response variance.

The first nine statements of the survey explored the extent to which West Virginia higher education faculty agreed with the quality practices of institutional support, faculty support, and the technological support necessary to develop and deliver online instruction. The next 15 statements explored the extent to which West Virginia higher education faculty agree they use high quality online teaching practices. Finally, the

survey included demographic data and a comment area. As previously stated, this comment area requested additional factors that promoted or hindered the utilization of quality practices in online education; and the comment area also provided other emergent ideas that were used as ancillary data in the study.

Expert Recommendations

Following the development of the survey, input was solicited from experts in the field of online education. There was a group of six individuals that received a copy of the drafted survey for review and recommendations (Appendix E). Feedback from experts is a crucial factor in the creation of the instrument and the content validity of the survey (Creswell, 2005).

According to Lynn (1986), an expert panel should consist of at least three members. However, Rubio et al. (2003) assert that six members should be included in the pilot group that consists of content experts and lay experts. Rubio et al. also suggest that the survey review group should have content experts in the fields of instructional technology and online instruction, and members who have published in the area of instructional technology. The lay experts, which are in the survey review group, should be faculty who utilize online instruction in their own discipline.

The expert panel was selected from members outside of the doctoral research committee and was requested to indicate the appropriateness of each of the elements on the survey for measuring quality online practices in online education. Smith and Glass (1987) suggested a series of questions for the panel of experts that should be asked about items included in the study (Appendix F) to check for readability and content validity.

To review content reliability, a Cronbach's alpha test was used. The Cronbach's alpha test is utilized after the collection and recording of the data are completed.

A Cronbach's alpha coefficient examines how well a set of items measures a single bi-dimensional construct (UCLA Academic Technology Services, 2003). It is a function of the number of test items and the average inter-correlation among the items. Based on the calculations of this coefficient, a determination can be made whether or not the items on the survey are representing the elements of the study (Salkind, 2004). According to Cortina (1993), the Cronbach's alpha test is an important factor in establishing test construction and use. As previously acknowledged, after collection and recoding of the data, the Statistical Package for the Social Sciences (SPSS) program was used to calculate the coefficients (Cronbach's alpha) for section one of the survey to determine content reliability. According to Allen and Yen (2002) anything above .80 is consider an acceptable measure in establishing test construction and test coefficient reliability. The Cronbach's alpha test on the researcher based *Survey of Online Educational* yielded a coefficient of .85 for the combined quality online practices investigated.

Statistical Analysis

After the researcher received the completed self-reported surveys, data were analyzed to determine the extent in which higher education faculty utilize quality online practices in online education as defined by the six blended elements of quality online educational practices. The data was then compared to the demographic data for additional analysis. Descriptive statistics and tests of significance were conducted as needed.

Chapter Summary

The procedures that are defined in this chapter describe the method the researcher used to establish the significance of the study. The process and methods are designed to determine the extent to which higher education faculty use quality online practices in online education. Descriptive statistics and tests of significance were used to describe the results. The instrument used in this research was a cross-sectional, self-reporting survey titled the *Survey of Online Educational Practices*. The participants of this study were instructors who taught higher education in an online environment during the spring, summer and fall semesters of 2006. The participants were identified by online coordinators, admissions departments, and information technology specialists at each West Virginia higher education facility. Chapter four presents the findings from the statistical analysis.

CHAPTER FOUR

Findings

This chapter presents the data analysis of survey responses concerning the extent to which West Virginia higher education faculty agree their online courses reflect quality online practices as described in the literature review. The research question for this study along with the corresponding statistical analysis is presented in narrative and numerical form.

A comprehensive review of the literature revealed themes of best practices in online learning that are delineated by a comprehensive literature review and supported by the Council of Regional Accrediting Commissions (Benson, 2003) to provide quality online instruction. These high quality online practices are: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. These six characteristics were addressed in a single research question:

To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques?

The study utilized a researcher-designed instrument, which yielded quantitative results based on descriptive non-parametric data. The instrument used in this research was a cross-sectional, self-reporting survey titled the *Survey of Online Educational Practices*. The instrument contained 24 forced answer statements with a Likert rating scale. Participants of this study were instructors who taught in higher education, in an

online environment in West Virginia during the spring, summer and fall semesters of 2006.

Population and Sample

Nineteen West Virginia higher education institutions were asked to participate in the study, four schools did not meet the criteria for the study and three schools choose not to participate. There was no consistent method to obtain online faculty rosters among West Virginia higher education institutions. For example, one institution employed a learning management system coordinator that kept online instructor data. Another institution did not utilize an online coordinator, and provided the online instructor rosters through the academic admissions office.

The population for the study included 556 instructors from 12 higher education institutions. All 556 faculty were asked to participate in the study. However, 11 cases were dropped from the analysis due to four deaths and seven inaccurate addresses. This provided a final population size of 545 possible participants. All of the participants were sent the *Survey of Online Educational Practices* on August 23, 2007. Survey participants were asked to return the completed survey by September 7, 2007. Of the 545 faculty selected to participate in the study, 290 returned the *Survey of Online Educational Practices* in the first mailing. This represented 53% of the sample population. Babbie (1973) suggested that a return rate of 50% plus one will provide an excellent review of the data without statistical bias. Furthermore, a return rate of 290 for this sample yielded a 95% confidence level with a 4.0% margin of error. Although the mailings resulted in 290 returned surveys, the number of responses for each statement on the survey varied due to the nature of a self-report survey.

After collection and coding of the data, the Statistical Package for the Social Sciences (SPSS) version 14 software program was used to calculate the coefficients (Cronbach's alpha) for the 24 targeted statements in section one of the survey to determine test coefficient reliability. According to Allen and Yen (2002) anything above .80 is considered an acceptable measure in establishing test construction and test coefficient reliability. The *Survey of Online Educational Practices* yielded a .85 in test reliability, thus meeting an acceptable measurement in test coefficient reliability.

Major Findings

This section presents major findings for the research question structured to correspond with the six targeted domain characteristics that were identified as quality online practices in the literature review, these include: support, collaboration/teamwork, flexibility, feedback, assessment and adult learning techniques. This study is connected to perceptions which West Virginia higher education faculty have regarding their practices in online teaching. Results were collected based on self-reported responses to the *Survey of Online Educational Practices*.

The first section of the survey contained 24 forced answer statements. Each of the six identified quality online practices was represented by three statements per practice. The first nine statements explored the extent to which West Virginia higher education faculty agree with the quality practices of support. The practice of support is broken down into three statements that further describe how support is delineated as a quality online practice. These practices are: institutional support, faculty support, and technological support necessary to develop and deliver online instruction.

The next 15 questions explored the extent to which West Virginia higher education faculty agree they use high quality online teaching practices. These quality online teaching practices are collaboration and teamwork, flexibility, feedback, assessment and adult learning techniques. Table 1 provides a descriptive view of the research question illustrated through the survey statements. Table 1 also provides the targeted domain practices and the item numbers of statements related to each targeted quality online practice.

Table 1 - Research Question and Represented Survey Statements

Research Question:	
To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices?	
Domain Practices	Statements (Numbered Order)
Support:	
<i>Institutional Support</i>	Statements 1, 2, 3
<i>Faculty Support</i>	Statements 4, 5, 6
<i>Technology Support</i>	Statements 7, 8, 9
Collaboration and Teamwork	Statements 10, 11, 12
Flexibility	Statements 13, 14, 15
Feedback	Statements 16, 17, 18
Assessment	Statements 19, 20, 21
Adult learning styles	Statements 22, 23, 24

The *Survey of Online Educational Practices* asked participants to describe their perceptions on a 6 point Likert scale ranging from 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, to 6 = strongly agree. Descriptive frequencies (mode) and mean scores were calculated on each statement for ease of interpretation on the *Survey of Online Educational Practices* and were then collapsed into rankings of disagree or agree.

After the initial analysis of each individual statement, the statements were collapsed into composite group categories and analyzed within each targeted domain. All

of the data were analyzed using SPSS version 14 to obtain results and all of the results are based on non-parametric tests.

A Summary for Targeted Quality Online Practices

Table 2 provides a description of the mean, median and mode for each statement and observed differences within each targeted online practice.

Table 2 - Individual Mean Scores for Targeted Online Practices

Statement	N	M	Med	Mod	SD
S1. Institutional Support	289	2.62	2.0	2	1.410
S2. Institutional Support	290	3.02	3.0	3	1.430
S3. Institutional Support	288	3.30	3.0	2	1.558
S4. Faculty Support	290	3.81	4.0	5	1.547
S5. Faculty Support	290	3.99	4.0	4	1.419
S6. Faculty Support	289	3.17	3.0	4	1.417
S7. Technology Support	289	4.06	4.0	5	1.471
S8. Technology Support	289	3.27	3.0	2	1.576
S9. Technology Support	289	4.42	5.0	5	1.412
S10. Collaborate/Teamwork	290	2.94	3.0	3	1.465
S11. Collaborate/Teamwork	289	2.83	3.0	2	1.432
S12. Collaborate/Teamwork	289	2.90	3.0	1	1.581
S13. Flexibility	287	3.49	4.0	4	1.544
S14. Flexibility	290	4.81	5.0	5	1.198
S15. Flexibility	290	3.82	4.0	5	1.567
S16. Feedback	290	4.34	5.0	6	1.473
S17. Feedback	290	4.42	5.0	6	1.479
S18. Feedback	290	4.87	5.0	6	1.064
S19. Assessment	289	2.85	3.0	1	1.478
S20. Assessment	289	4.48	5.0	5	1.344
S21. Assessment	290	3.23	3.0	3	1.703
S22. Adult Learning Tech	290	4.41	5.0	5	1.329
S23. Adult Learning Tech	290	4.37	5.0	5	1.433
S24. Adult Learning Tech	290	4.65	5.0	5	1.155

Support: Institutional Support

The first nine statements of the survey explored the extent to which West Virginia higher education faculty agree with the quality practices of support. The first three

statements target the domain practice of institutional support. Based on the three targeted statements of institutional support Table 3 illustrates the descriptive mean, median and mode for each individual statement related to institutional support.

Table 3 - Descriptive Data for Statements Targeting Institutional Support

	N	M	Med	Mod	SD
S1. My institution provides adequate compensation for online course development and delivery.	289	2.62	2.0	2	1.410
S2. My institution monitors the development and delivery of online courses	290	3.02	3.0	3	1.430
S3. My institution has a policy for intellectual property.	288	3.30	3.0	2	1.558

Statement one had a mean of 2.62 (Median 2.0, Mode (2) “disagree”) with 289 responses; 222 of those responses (76.8%) of the participants disagreed that their institutions provide adequate compensation for online course development and delivery and 67 of the participants (22.9%) agreed their institutions provided adequate compensation. One participant (.3%) did not respond to the statement. Statement two had a mean of 3.02 (Median 3.0, Mode (3) “somewhat disagree”) with 290 responses; 197 of those responses (67.9%) disagreed their institution monitored the development and delivery of online courses and 93 (32.1%) agreed their institution provided monitoring. Statement three had a mean of 3.30 (Median 3.0, Mode (2) “disagree”) with 288 responses and 169 of those responses (58.7%) disagreed their institution had a policy for intellectual property regarding online content and 119 (40.6%) agreed their institution had a policy for intellectual property for online content. Two participants (.7%) did not respond to the statement.

The composite table for the targeted online practice of institutional support collapsed the three statements into a single mean score as illustrated in Table 4. Also included in Table 4 is the composite mode. The composite mean for the targeted quality practice of institutional support was 2.97. The composite mode for the targeted quality practice of institutional support was “somewhat disagree” (3) on the Likert scale used in the survey.

Table 4 - Descriptive Data for Composite: Institutional Support

	N	M	Mod	SD
Targeted Composite: Institutional Support	288	2.97	3	1.223

Support: Faculty Support

Table 5 illustrates the descriptive mean, median and mode for the three individual statements related to faculty support.

Table 5 - Descriptive Data for Statements Targeting Faculty Support

	N	M	Med	Mod	SD
S4. My institution provides ongoing professional development in online course creation.	290	3.81	4.0	5	1.547
S5. My institution provides training in the hardware and software technologies needed to deliver online instruction.	290	3.99	4.0	4	1.419
S6. My institution provides training in copyright laws and legal issues related to teaching online.	289	3.17	3.0	4	1.417

Statement four had a mean of 3.81 (Median 4.0, Mode (5) “agree”) with 290 responses; 178 of the participants (64.4%) agreed their institutions provided ongoing professional development and 112 of those responses, (38.6%) disagreed their institution provided ongoing professional development in online course creation. Statement five had a mean of 3.99 (Median 4.0, Mode (4) “somewhat agree”) with 290 responses; 201

(69.3%) agreed their institution provided the technical training needed to deliver online instruction and 89 of those responses (30.7%) disagreed their institution provided training in hardware and software technologies needed to deliver online instruction. Statement six had a mean of 3.17 (Median 3.0, Mode (4) “somewhat agree”) with 289 responses; 161 of those responses (55.7%) disagreed their institution provided training in copyright laws and legal issues related to teaching online and 128 (44.0%) agreed their institution provided training in copyright laws and legal issues related to teaching online. One participant (.3%) did not respond to the statement.

The composite table for the targeted online practice of faculty support collapsed the three statements into a single mean score as illustrated in Table 6. Also included in Table 6 is the composite mode. The composite mean for the targeted quality practice of faculty support was 3.65. The composite mode for the targeted quality practice of faculty support was “somewhat agree” (4) on the Likert scale used in the survey.

Table 6 - Descriptive Data for Composite: Faculty Support

	N	M	Mod	SD
Targeted Composite: Faculty Support	289	3.65	4	1.201

Support: Technology Support

Table 7 illustrates the descriptive mean, median and mode for the three individual statements related to technology support.

Table 7 - Descriptive Data for Statements Targeting Technology Support

	N	M	Med	Mod	SD
S7. My institution's online course delivery platform rarely has downtime.	289	4.06	4.0	5	1.471
S8. My institution provides technological support 24 hours a day for my online courses.	289	3.27	3.0	2	1.576
S9. My institution provides an online delivery platform that is easy to use (e.g. WebCT, Desire to Learn, Sakai).	289	4.42	5.0	5	1.412

Statement seven had a mean of 4.06 (Median 4.0, Mode (5) “agree”) with 289 responses; 194 of the participants (66.8%) agreed their institutions delivery platform rarely has downtime and 95 of those responses, (32.9%) disagreed their institutions delivery platform rarely has downtime. One participant (.3%) did not respond to the statement. Statement eight had a mean of 3.27 (Median 3.0, Mode (2) “disagree”) with 289 responses; 163 (56.4%) disagreed their institution provides technological support 24 hours a day for online courses and 126 of those responses (43.3%) agreed their institution provides technological support 24 hours a day for online courses. One participant (or .3%) did not respond to the statement. Statement nine had a mean of 4.42 (Median 5.0, Mode (5) “agree”) with 289 responses; 223 of those responses (76.9%) agreed their institution provides an online delivery platform that is easy to use and 66 (22.8%) disagreed their institution provides an online delivery platform that is easy to use. One participant (.3%) did not respond to the statement.

The composite table for the targeted online practice of technology support collapsed the three statements into a single mean score as illustrated in Table 8. Also included in Table 8 is the composite mode. The composite mean for the targeted quality

practice of technology support was 3.90. The composite mode for the targeted quality practice of technology support was “agree” (or 5) on the Likert scale used in the survey.

Table 8 - Descriptive Data for Composite: Technology Support

	N	M	Mod	SD
Targeted Composite: Technology Support	287	3.90	5	1.156

Collaboration and Teamwork

Table 9 illustrates the descriptive mean, median and mode for the three individual statements related to collaboration and teamwork.

Table 9 - Descriptive Data for Statements Targeting Collaboration & Teamwork

	N	M	Med	Mod	SD
S10. My institution provides mentoring for online instructors.	290	2.94	3.0	3	1.465
S11. My institution allows other faculty to review my online courses for clarity and consistency.	289	2.83	3.0	2	1.432
S12. I work with instructional designers from my institution to develop my online courses.	289	2.90	3.0	1	1.581

Statement 10 had a mean of 2.94 (Median 3.0, Mode (3) “somewhat disagree”) with 290 responses; 208 of the participants (71.7%) disagreed that their institutions provided mentoring for online instructors and 82 of those responses (28.3%) agreed their institutions provided mentoring for online instructors. Statement 11 had a mean of 2.83 (Median 3.0, Mode (2) “disagree”) with 289 responses; 197 (68.2%) disagreed their institution allows other faculty to review their online courses for clarity and consistency and 92 of those responses (31.5%) agreed their institution allows other faculty to review their online courses for clarity and consistency. One participant (.3%) did not respond to the statement. Statement 12 had a mean of 2.90 (Median 3.0, Mode (1) “strongly disagree”) with 289 responses; 183 of those responses (63.3%) disagreed that they

worked with instructional designers from their institution to develop their online courses and 106 (36.4%) agreed that they worked with instructional designers from their institution to develop their online courses. One participant (.3%) did not respond to the statement.

The composite table for the targeted online practice of collaboration and teamwork collapsed the three statements into a single mean score as illustrated in Table 10. Also included in Table 10 is the composite mode. The composite mean for the targeted quality practice of collaboration and teamwork was 2.88. The composite mode for the targeted quality practice of collaboration and teamwork was “disagree” (2) on the Likert scale used in the survey.

Table 10 - Descriptive Data for Composite: Collaboration and Teamwork

	N	M	Mod	SD
Targeted Composite: Collaboration and Teamwork	289	2.88	2	1.182

Flexibility

Table 11 illustrates the descriptive mean, median and mode for the three individual statements related to flexibility.

Table 11 - Descriptive Data for Statements Targeting Flexibility

	N	M	Med	Mod	SD
S13. I design my courses to allow students to play a significant role in course content and assessments.	287	3.49	4.0	4	1.544
S14. I handle unexpected technological interruptions with little hindrance to the flow of the course (e.g. If the online course is unavailable, I permit my students to submit their assignments late, or by other means: such as email, or postal mail.	290	4.81	5.0	5	1.198
S15. I am flexible with deadlines for online course work.	290	3.82	4.0	5	1.567

Statement 13 had a mean of 3.49 (Median 4.0, Mode (4) “somewhat agree”) with 287 responses; 147 of the participants (51.2%) agreed they design their courses to allow students to play a significant role in course content and assessments and 140 of those responses (48.8%) disagreed they design their courses to allow students to play a significant role in course content and assessments. Three participants (1.0%) did not respond to the statement. Statement 14 had a mean of 4.81 (Median 5.0, Mode (5) “agree”) with 290 responses; 247 (85.2%) agreed they handle unexpected technological interruptions with little hindrance to the flow of their courses and 43 of those responses (14.8%) disagreed they handled unexpected technological interruptions with little hindrance to the flow of their courses. Statement 15 had a mean of 3.82 (Median 4.0, Mode (5) “agree”) with 290 responses; 178 of those responses (61.4%) agreed they are flexible with deadlines for online course work and 112 (38.6%) disagreed they are flexible with deadlines for online course work.

The composite table for the targeted online practice of flexibility collapsed the three statements into a single mean score as illustrated in Table 12. Also included in Table 12 is the composite mode. The composite mean for the targeted quality practice of flexibility was 4.04. The composite mode for the targeted quality practice of flexibility was “agree” (or 5) on the Likert scale used in the survey.

Table 12 - Descriptive Data for Composite: Flexibility

	N	M	Mod	SD
Targeted Composite: Flexibility	287	4.04	5	0.979

Feedback

Table 13 illustrates the descriptive mean, median and mode for the three individual statements related to feedback.

Table 13 - Descriptive Data for Statements Targeting Feedback

	N	M	Med	Mod	SD
S16. I respond to students within 24 to 48 hours in my online courses.	290	4.34	5.0	6	1.473
S17. I provide my feedback policies clearly at the beginning of the online course within the syllabus. (e.g. I inform students when to expect a reply).	290	4.42	5.0	6	1.479
S18. I provide students with detailed constructive critiques of their work.	290	4.87	5.0	6	1.064

Statement 16 had a mean of 4.34 (Median 5.0, Mode (6) “strongly agree”) with 290 responses; 190 of the participants (65.5%) agreed they respond to students within 24 to 48 hours in their online courses and 100 of those responses (34.5%) disagreed they respond to students within 24 to 48 hours in their online courses. Statement 17 had a mean of 4.42 (Median 5.0, Mode (6) “strongly agree”) with 290 responses; 215 (74.1%) agreed they provide feedback policies clearly at the beginning of the online course within the syllabus and 75 of those responses (25.9%) disagreed they provide feedback policies clearly at the beginning of the online course within the syllabus. Statement 18 had a mean of 4.87 (Median 5.0, Mode (6) “strongly agree”) with 290 responses; 257 of those responses (88.6%) agreed they provide students with detailed constructive critiques of their work and 33 (11.4%) disagreed they provide students with detailed constructive critiques of their work.

The composite table for the targeted online practice of feedback collapsed the three statements into a single mean score as illustrated in Table 14. Also included in Table 14 is the composite mode. The composite mean for the targeted quality practice of feedback was 4.54. The composite mode for the targeted quality practice of feedback was “strongly agree” (6) on the Likert scale used in the survey.

Table 14 - Descriptive Data for Composite: Feedback

	N	M	Mod	SD
Targeted Composite: Feedback	290	4.54	6	1.016

Assessment

Table 15 illustrates the descriptive mean, median and mode for the three individual statements related to assessment.

Table 15 - Descriptive Data for Statements Targeting Assessment

	N	M	Med	Mod	SD
S19. I provide online assessments that address different learning styles (e.g. aural, visual, tactile).	289	2.85	3.0	1	1.478
S20. I provide assessments that are built on critical reflections of the course content (e.g. journaling, critical writing, essay).	289	4.48	5.0	5	1.344
S21. I include collaborative assessment activities in my online courses. (e.g. discussions, small group projects).	290	3.23	3.0	3	1.703

Statement 19 had a mean of 2.85 (Median 3.0, Mode (1) “strongly disagree”) with 289 responses; 188 of the participants (65.1%) disagreed that they provide online assessments that address different learning styles and 101 of those responses (34.6%) agreed they provide online assessments that address different learning styles. One participant (.3%) did not respond to the statement. Statement 20 had a mean of 4.48 (Median 5, Mode (5) “agree”) with 289 responses; 229 (78.9%) agreed they provide assessments that are built on critical reflections of the course content and 60 of those responses (20.8%) disagreed they provide assessments that are built on critical reflections of the course content. One participant (.3%) did not respond to the statement. Statement 21 had a mean of 3.23 (Median 3.0, Mode (3) “somewhat disagree”) with 290 responses; 156 of those responses (53.8%) disagreed that they include collaborative assessment

activities in their online courses and 134 (46.2 %) agreed they include collaborative assessment activities in their online courses.

The composite table for the targeted online practice of assessment collapsed the three statements into a single mean score as illustrated in Table 16. Also included in Table 16 is the composite mode. The composite mean for the targeted quality practice of assessment was 3.51. The composite mode for the targeted quality practice of assessment was “somewhat agree” (4) on the Likert scale used in the survey.

Table 16 - Descriptive Data for Composite: Assessment

	N	M	Mod	SD
Targeted Composite: Assessment	289	3.51	4	1.075

Adult Learning Techniques

Table 17 illustrates the descriptive mean, median and mode for the three individual statements related to adult learning techniques.

Table 17 - Descriptive Data for Statements Targeting Adult Learning Techniques

	N	M	Med	Mod	SD
S22. I encourage problem solving in my online courses (e.g. Students are provided with case studies to examine.)	290	4.41	5.0	5	1.329
S23. I promote social interaction in my online courses (e.g. Student biographical area, Student discussion forums.)	290	4.37	5.0	5	1.433
S24. I act as a facilitator rather than a lecturer in my online courses.	290	4.65	5.0	5	1.155

Statement 22 had a mean of 4.41 (Median 5.0, Mode (5) “agree”) with 290 responses; 230 of the participants (79.3%) agreed they encourage problem solving in their online courses and 60 of those responses (20.7%) disagreed they encourage problem solving in their online courses. Statement 23 had a mean of 4.37 (Median 5.0, Mode (5) “agree”) with 290 responses; 217 (74.8%) agreed they promote social interaction in their

online courses and 73 of those responses (25.2%) disagreed they promote social interaction in their online courses. Statement 24 had a mean of 4.65 (Median 5.0, Mode (5) “agree”) with 290 responses; 240 of those responses (82.8%) agreed they acted as a facilitator rather than a lecturer in their online courses and 50 (17.2 %) disagreed they acted as a facilitator rather than a lecturer in their online courses.

The composite table for the targeted online practice of adult learning techniques collapsed the three statements into a single mean score as illustrated in Table 18. Also included in Table 18 is the composite mode. The composite mean for the targeted quality practice of adult learning techniques was 4.47. The composite mode for the targeted quality practice of adult learning techniques was “agree” (5) on the Likert scale used in the survey.

Table 18 - Descriptive Data for Composite: Adult Learning Techniques

	N	M	Mod	SD
Targeted Composite: Adult Learning Techniques	290	4.47	5	0.973

Research Question Outcome

This study was designed to determine the extent to which higher education faculty use quality online practices. A comprehensive literature review revealed themes of quality online practices that are also delineated by the Council of Regional Accrediting Commissions. These quality online practices are also supported by the Western Interstate Commission for Higher Education (2001) to provide quality online instruction. These quality online practices are: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques. These six characteristics were addressed in the research question:

To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques?

Each practice was broken down into three individual statements for each category. After frequencies and means were analyzed and discussed for each individual statement, each practice was then collapsed into a composite mean, and the composite mode was analyzed. Table 19 provides an overview of the composite mean, and mode for each targeted online practice.

Table 19 - Descriptive Data for Targeted Composite Online Practices

	N	M	Mod	SD
Targeted Composite: Institutional Support	288	2.97	3	1.223
Targeted Composite: Faculty Support	289	3.65	4	1.201
Targeted Composite: Technology Support	287	3.90	5	1.156
Targeted Composite: Collaboration and Teamwork	289	2.88	2	1.182
Targeted Composite: Flexibility	287	4.04	5	0.979
Targeted Composite: Feedback	290	4.54	6	1.016
Targeted Composite: Assessment	289	3.51	4	1.075
Targeted Composite: Adult Learning Techniques	290	4.47	5	0.973

All of these means were then collapsed into one composite mean, median and composite mode to answer the research question. The Likert rating scale utilized in the study yielded an overall composite mean of 3.75. The median of the set of scores for the survey yielded a result of 4.0 and the mode was “agree” or (5) on the Likert rating scale used in the study. This quantitative result is based on ordinal and nominal data and revealed that overall more respondents approached agreement with the statements on the *Survey of Online Educational Practices* that their courses reflected quality online practices as supported by the comprehensive literature review.

Demographic Data

The *Survey of Online Educational Practices* was used for the compilation of demographic data that describes characteristics of the respondents. The characteristics that were collected included: sex, faculty status related to employment (full time or part-time), faculty status related to job classification (tenured or non-tenured), years of experience in higher education and years of experience in online education. In addition, at the end of section two an open-ended question was provided for participants to indicate additional factors that may have promoted or hindered their utilization of quality practices in online education. Babbie (1973) suggested that an open-ended question provides respondent's additional room to write their own comments not found in a forced answer survey. This section provides a descriptive analysis of the demographic data gathered by the survey.

Demographic: Sex

Participants of the study were asked to identify their sex in the study. Of the 290 respondents of the survey, 141 (48.6%) were male and 149 (51.4%) were female. Table 20 provides a descriptive view of respondents' sex.

Table 20 - Descriptive Data for Sex

	Male	Female
Sex	141	149

Demographic: Employment Status

Participants were also asked to indicate their faculty status related to level of employment (full-time or part-time). Out of the 290 respondents 202 or 69.7% rated their classification as full-time and 88 or 30.3% rated their classification as part-time. Table 21 provides an overview of respondents' faculty status.

Table 21 - Descriptive Data for Faculty Status of Employment

	Full Time	Part-Time
Job Status	202	88

Demographic: Tenure Status

Participants were asked to indicate their faculty status related to job classification (tenured or non-tenured). Out of the 290 respondents to the survey 119 or 41% rated their classification as tenured and 171 or 59% rated their classification as non-tenured.

Table 22 provides an overview of respondents' faculty status.

Table 22 - Descriptive Data for Faculty Status of Job Classification

	Tenured	Non-Tenured
Job Status	119	171

Demographic: Years Teaching in Higher Education

Participants were asked to indicate the number of years they had worked in higher education. The respondents' years of experience were then clustered into six categories: 1-5, 6-10, 11-15, 16-20, 21-25, and 26 or above years of experience. The number of years of experience was highest in the 6-10 range with 93 respondents or 32.1%. The remaining respondents were fairly evenly distributed among the five groups. Of the 290 responses, 52 respondents (17.9%) had 1-5 years experience in higher education; 36 respondents (12.4%) had 11-15 years experience; 41 respondents (14.1%) had 16-20 years experience; 28 respondents (9.7%) had 21-25 years experience and finally 40 respondents (13.8%) had 26 or more years experience in higher education. Table 23 provides a descriptive analysis of respondent years of higher education teaching experience.

Table 23 - Frequency Distribution of Higher Education Teaching Experience

Years of Experience	Frequency	Percentage
1-5 years	52	17.9
6-10 years	93	32.1
11-15 years	36	12.4
16-20 years	41	14.1
21-25 years	28	9.7
26 and above	40	13.8
Total Respondents	290	100.0

Demographic: Years Teaching Online

Participants were asked to indicate the number of years they had worked in online education. The respondents' years of online teaching experience were then clustered into six categories: 1-5, 6-10, 11-15, 16-20, 21-25, and 26 or above years of experience. The number of years of experience yielded results within the first three categories. The first range of 1-5 years was highest with 201 respondents (69.3%). Of the 290 responses, 78 respondents (26.9%) had 6-10 years experience in online education and 11 respondents (3.8%) had 11-15 years of online teaching experience. None of the respondents to the survey indicated that they had above 15 years of online educational experience. Table 24 provides a descriptive analysis of respondent years of online teaching experience.

Table 24 - Frequency Distribution of Online Teaching Experience

Years of Experience	Frequency	Percentage
1-5 years	201	69.3
6-10 years	78	26.9
11-15 years	11	3.8
Total Respondents	290	100.0

Ancillary Findings

The demographic data were analyzed across all collapsed groups of years of teaching in higher education. The demographic category for years teaching in higher education was collapsed into six groups as follows: 1 = 1-5 years experience, 2= 6-10

years experience, 3= 11-15 years experience, 4= 16-20 years experience, 5= 21-25 years experience, and 6= 26 or more years experience). The Kruskal-Wallis test for significance was used to determine if significance existed between years of teaching in higher education and each of the composite quality online practices. The Kruskal-Wallis test was utilized because it is often viewed as the nonparametric counterpart to the One Way Analysis of Variance or ANOVA. Each of these tests for significance is used to compare possible differences between means of groups.

Analysis of Online Practices and Years Teaching in Higher Education

Based on the Kruskal–Wallis test for significance, the data revealed that there was significance only between rankings of faculty years of teaching in higher education in the composite quality online practice of Collaboration and Teamwork. The remaining seven composite quality online practices yielded no significance at the p.05 level. Table 25 displays the results of the Kruskal-Wallis test comparing the composite quality online practices and the years of teaching in higher education.

Table 25 - Kruskal-Wallis Results Comparing Composite Quality Online Practices and Years Teaching in Higher Education Across All Groups

Composite Practices	Significance Level
Institutional Support	.385
Faculty Support	.090
Tech Support	.186
Collaboration and Teamwork	.032**
Flexibility	.778
Feedback	.099
Assessment	.699
Adult learning Techniques	.847

**Results are significant at the p.05 level.

Further analysis of means reveal faculty who taught in higher education beyond the 1-5 year category had higher mean ranks within the composite practice of Collaboration and Teamwork.

Analysis of Online Practices and Years Teaching in Online Education

The demographic data were analyzed across all collapsed groups of years of online teaching. The demographic category for years online teaching were collapsed into groups as follows: 1=1-5 years experience, 2=6-10 years experience, 3=11-15 years experience. The Kruskal-Wallis test for significance was used to determine if significance existed between years of online teaching and each of the composite quality online practices.

Based on the Kruskal–Wallis test for significance, the data revealed that there was significance in the following composite quality online practices: institutional support, faculty support, collaboration and teamwork, feedback, and assessment. There was no significance at the p.05 level in the following composite quality online practices: technology support, flexibility, and adult learning techniques. Table 26 displays the results of the Kruskal-Wallis test comparing the composite quality online practices and the years of online teaching.

Table 26 - Kruskal-Wallis Results Comparing Composite Quality Online Practices and Years Teaching Online Across All Groups

Composite Practices	Significance Obtained Level
Institutional Support	.003**
Faculty Support	.001**
Tech Support	.148
Collaboration and Teamwork	.031**
Flexibility	.414
Feedback	.003**
Assessment	.036**
Adult learning Techniques	.080

**Results are significant at the p.05 level.

Further analysis of means reveal faculty who taught online beyond the 1-5 year category had higher mean ranks within the composite categories of institutional support, faculty support, collaboration and teamwork, feedback and assessment.

Analysis of Open Ended Statements from Survey Respondents

The final area for analysis of the *Survey of Online Educational Practices* was an open-ended question for faculty to indicate additional factors that may have promoted or hindered their utilization of quality practices in online education. An analysis of the open-ended responses revealed both positive and negative experiences in the utilization of quality practices in online education.

Based on the responses to the survey, 72 faculty (24.8%) offered comments in the open-ended question area of the survey. Patterns that emerged in the responses yielded the following endorsements and criticisms of practices in online education:

- Faculty stated that online teaching is very applicable to the 21st century learner.
- Faculty enjoyed greater flexibility with their online courses.
- Faculty stated that the intrinsic rewards with more direct contact with students is rewarding.

- Faculty indicated their preference was for blended classes and not fully online courses. (e.g. A combination of face-to-face and online classes).
- Faculty are dissatisfied with their compensation for online teaching and online creation.
- Faculty are dissatisfied with the approval process for online courses.
- The orientation to basic operation tools and procedures for online learning are too great for some faculty and some students. Some faculty and some students need additional time and training to be able to successfully work in an online educational environment.
- Faculty consider online teaching is much more labor intensive than face-to-face courses.
- Faculty raised concerns that institutions are more concerned with numbers than quality online instruction.

These endorsements and criticisms appeared to be consistent with variations in individual and composite mean scores obtained in the analysis of the survey.

Chapter Summary

This chapter presented the analysis of the data that were used to investigate the extent to which higher education faculty in West Virginia agree their online courses reflect the use of best practices. This research utilized a cross-sectional survey entitled the *Survey of Online Educational Practices*. In addition this survey included a section for the collection of selected demographic data that was used for the compilation of characteristics that describe the respondents. The survey also included an open-ended question that provided respondents' additional room to write their own comments.

An analysis of the results was conducted based on the individual statements on the survey and composite groupings of the six quality online practices as defined in the literature review. Descriptive statistical analyses were focused on the statements to determine their individual means, medians and modes. Furthermore, the composite mean and mode were analyzed for the defined quality online education practices. In addition, since this research was a non-parametric descriptive study, the Kruskal-Wallis test was used to determine statistical significance in generalizing the results to the selected population. Based on analysis of the data the following research question was answered:

To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques?

The Likert rating scale utilized in the study yielded a composite mean of 3.75, a median of 4.0 and a mode of (5) “Agreement”. This quantitative result revealed that overall West Virginia higher education faculty agreed with the statements on the *Survey of Online Educational Practices* that their courses reflected quality online practices as supported by the comprehensive literature review.

Nevertheless, it is important to note not all of the data analyzed on the composite practices revealed an approach toward agreement on the Likert scale used in the survey. For example, within the individual statements that make up the composite practice of assessment, statement 19 revealed that 65.1% disagreed that they provide online assessments that address different learning styles and 34.6% of the participants agreed they provide online assessments that address different learning styles. Also, within the

individual statements that make up the composite practice of technology support, statement 8 revealed that 56.4% disagreed their institution provides technological support 24 hours a day for online courses and 43.3% agreed their institution provides technological support 24 hours a day for online courses.

Furthermore, other composite quality online practices were in disagreement with the research question. The composite mean for institutional support had a mean score of 2.97 and a mode of “disagree” on the Likert scale used in the survey. Additionally, the composite mean for collaboration and teamwork had a mean score of 2.88 and a mode of “disagree”. All of the individual mean scores and the median score for the statements related to the quality online practice of collaboration and teamwork indicated levels of disagreement on the Likert scale used in the survey. Statement 10 revealed that 71.7% disagreed that their institutions provided mentoring for online instructors and 28.3% of the participants agreed their institutions provided mentoring for online instructors. Statement 11 revealed that 68.2% disagreed their institution allowed other faculty to review their online courses for clarity and consistency and 31.5% agreed their institution allows other faculty to review their online courses for clarity and consistency. Statement 12 revealed that 63.3% disagreed that they worked with instructional designers from their institution to develop their online courses and 36.4% agreed that they worked with instructional designers from their institution to develop their online courses.

The demographic data were analyzed across all collapsed groups of years of teaching in higher education and years of teaching online. The Kruskal-Wallis test for significance was used to determine if significance existed between years of teaching in higher education and each of the composite quality online practices. The Kruskal-Wallis

test was also used to determine if significance existed between years of teaching in online education and each of the composite quality online practices had any significance.

Based on the Kruskal–Wallis test for significance in comparing composite quality online practices and years teaching in higher education, the data revealed that there was only significance between rankings of faculty years of teaching in higher education in the composite quality online practice of collaboration and teamwork. The remaining seven composite quality online practices yielded no significance at the p.05 level.

Additionally, based on the Kruskal-Wallis test in comparing composite quality online practices and years teaching online, the data revealed significance with faculty that had taught more than five years in the following composite quality online practices: institutional support, faculty support, collaboration and teamwork, feedback, and assessment. There was no significance at the p.05 level in the following composite quality online practices: technology support, flexibility, and adult learning techniques.

Furthermore, based on the Kruskal-Wallis test for significance analyzed on full time and part-time faculty and all of the individual statements on the survey and revealed no significance at the p.05 level. In addition, the Kruskal-Wallis test yielded no significance at the p.05 level for tenured and non-tenured faculty and all of the individual statements on the survey.

The final area of the *Survey of Online Educational Practices* provided an open-ended question for faculty to indicate additional factors that may have promoted or hindered their utilization of quality practices in online education. Based on responses to the survey, 72 faculty (24.8%) offered comments in the open-ended question area of the survey. There were nine areas that emerged as patterns in the responses. These

endorsements and criticisms of practices in online education appeared to be consistent with the variations in individual and composite mean scores obtained in the analysis of the survey. Chapter Five provides conclusions and recommendations based on the results yielded in chapter four.

Chapter Five

Conclusions, Implications and Recommendations

Overview

For the past decade, West Virginia higher education institutions have been delivering online education utilizing their own standards for quality online instruction. However, in recent years there has been an increase in the literature that focuses on the need for institutions to adopt a common set of best practice guidelines for online education.

It is important to note that faculty are responsible for the delivery of online instruction and higher education faculty must be rigorous in providing quality educational opportunities to students. Highly effective instructional practices are and will continue to be faculty roles. An extensive review of relevant literature indicates that a limited amount of research has been conducted examining faculty experiences in quality online education. Most support and research has been gathered on student experiences in online instruction. If faculty members understand that teaching online can provide a sound educational opportunity and can enhance the learning experience in higher education, then they will value it as a teaching instrument.

This study was conducted to examine the extent to which West Virginia higher education faculty agree their online courses reflect best practices, as identified by the literature, for teaching in an online educational environment. The identified best practices are: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques.

This research was non-parametric and descriptive in nature. Data were acquired from the survey respondents gained from the 12 West Virginia four year colleges that participated in the study. Of the 545 faculty selected to participate in the study, 290 returned the *Survey of Online Educational Practices* in the first mailing. This represented 53% of the sample population. Although the mailings resulted in 290 returned surveys, the number of responses for each statement on the survey varied due to the nature of a self-reported survey where some of the participants chose not to respond to every item.

The analyses of the data collected from the survey utilized descriptive statistics for measures of central tendency for individual statements and composite groups of statements for testing of the research question. These measurements provided an overall representation of the extent West Virginia higher education faculty agreed their online courses reflected best practices as defined by the literature review.

Furthermore, the demographic data were analyzed across all grouped years of teaching in higher education, grouped years of teaching online, job classification (tenured and non-tenured) and job status (full time and part-time). The Kruskal-Wallis test for significance was used to determine if each of these categories yielded significance between groups on the 24 individual statements and groups within the *Survey of Online Educational Practices*.

Based on the statistical findings, conclusions are stated regarding the extent West Virginia Higher Education faculty agree they are utilizing quality online practices as framed in the literature review and as supported by the Council of Regional Accrediting Commissions. In addition to the conclusions and implications, recommendations for future research are included. Furthermore, the results of this study add to the body of

knowledge by building on the limited research in perceived faculty online practices in quality online instruction.

Based on the analysis of the data the following research question was examined:

To what extent do West Virginia higher education faculty agree their online courses reflect the following quality practices: (a) support, (b) collaboration and teamwork, (c) flexibility, (d) feedback, (e) assessment, and (f) adult learning techniques?

Quantitative results revealed that overall West Virginia higher education faculty agreed with the statements on the *Survey of Online Educational Practices* that their courses reflected quality online practices as supported by the comprehensive literature review. The Likert rating scale utilized in the study yielded a composite mean of 3.75 and a mode of (5) “Agree”. However, not all targeted areas of the survey yielded agreement with the statements on the *Survey of Online Educational Practices*. Each of the composite targeted areas are discussed within the conclusions and implications of this study.

Conclusions and Implications

Based on the statistical findings from the survey, conclusions and implications are drawn regarding the extent West Virginia Higher Education faculty agree they are utilizing quality online practices as framed in the literature review and as supported by the Council of Regional Accrediting Commissions.

Conclusions: Quality Practices of Institutional Support

Although the study concluded that faculty are in agreement with their online educational practices, there are areas in online practices that call for improvement. For

example, according to the results of the *Survey of Online Educational Practices*, faculty revealed that intellectual property, compensation issues and institutional oversight were barriers for teaching online. In total, the composite mean was 2.97 and the composite mode was “somewhat disagree” (3) for Institutional Support.

Additionally, the Kruskal-Wallis test for significance revealed that faculty status and job classification have no significant effect on the practices of institutional support, as reported on the *Survey of Online Educational Practices*. Furthermore, the Kruskal-Wallis test for significance yielded no significance within the demographic of years teaching in higher education. However, the Kruskal-Wallis test did reveal that faculty who had taught online more than five years reported more satisfaction with the practices of Institutional Support than faculty who had taught less than five years in online education. One possible reason for this finding may be that faculty who have taught online greater than five years may find superior intrinsic rewards for teaching online, such as exceptional experiences with one-to-one communication with students. In fact, Swan et al. (2000) suggested that the more courses were focused on discussion and feedback with the instructor, the greater students and faculty were satisfied with their online courses.

Comments on the survey made by several respondents from the *Survey of Online Educational Practices* provide added evidence that there is a need for improvement in the quality practices of Institutional Support:

Comment: *We [faculty] now must spend twice the amount of time with our students with greater numbers [in the class] and fewer monetary incentives to work online.*

Comment: *Intellectual property is an ongoing issue at our campus, if we create a course it becomes the property of the school and we cannot control course delivery in the future.*

Comment: *Compensation from institution to institution is varied; the school I work for pays pitifully for online course instruction and development.*

Comment: *There is little oversight from our institution for online education, courses are becoming cookie cutter templates of one another and have very little to do with quality instruction.*

The results from the *Survey of Online Educational Practices* reinforce what the literature indicates as quality practices in institutional support and what faculty perceive they are getting from their institutions. In fact, Schifter (2000) revealed that faculty time, intellectual property, compensation issues and poor institutional oversight were rated as the greatest barriers for teaching online. These quality practices still appear to be a barrier to online education in West Virginia, based on the results from the *Survey of Online Educational Practices*. In fact, the IHEP (2000) asserted that higher education institutions needed to revise policies, procedures, rewards, resources, and training for online education, in order to achieve higher standards.

Thus, if higher education institutions reviewed and revised their online institutional support practices on a regular basis, then perhaps a higher standard of communication, cooperation and satisfaction from faculty could be achieved. One method to ensure and improve institutional support is to embed these institutional support practices in internal professional development workshops and target those faculty who have just started teaching online or have taught online less than five years. An additional

method to ensure improvements in institutional support is to provide faculty with greater input in online policies and procedures concerning workloads, compensation issues, and intellectual property agreements.

Conclusions: Quality Practices of Faculty Support

According to the results of the *Survey of Online Educational Practices*, West Virginia faculty agreed that their institutions provided quality faculty support in professional development training for: online course creation, hardware and software technologies, and copyright laws related to the development and delivery of online education. The composite mean was 3.65 and the composite mode was “agree” (4) for faculty support.

In addition, the Kruskal-Wallis test revealed that faculty who taught online greater than five years reported more satisfaction with the practices of faculty support than faculty who had taught less than five years in online education. An obvious argument for this finding may be that novice faculty have not experienced many online learning opportunities, adequate training or mentoring programs to competently teach online. Lorenzo (2004) stated that faculty must be given the opportunities for ongoing professional development in order to become proficient in the uses of online technologies.

It appears from the results of the *Survey of Online Educational Practices*, that faculty agree with the literature regarding the quality practices in Faculty Support. However, once again, faculty who have taught less than five years online had a greater tendency toward “disagreement” with the practices of faculty support. Garrett & Vogt (2003) suggested that if institutions supported faculty in professional development

opportunities then faculty would be further satisfied with online education. In addition, the Higher Learning Commission of the North Central Association of Colleges and Schools (HLC, 2000) also suggested that institutions should provide appropriate training in copyright and regulatory and legal requirements to faculty who participate in online education.

Comments made by respondents on the *Survey of Online Educational Practices* support a need for professional development in the practices of faculty support:

Comment: Faculty do not have the time to continue learning these new online tools. As a new faculty member, I have been tasked to create a course online and I haven't been trained in this computer application.

Comment: Copyrights and regulatory requirements are a big concern for online educators today. Our institution should provide more training opportunities related to these issues.

Benson (2003) suggested that institutions' provisions for orientation and training in technologies and other professional development areas related to online learning would create additional strategies for effective interactions in online delivery. There is always room for improvement, Garrett and Vogt (2003) asserted that higher education organizations can increase participation and faculty satisfaction in online learning by providing faculty with release time during working hours to receive professional development training. If higher education organizations target faculty with less than five years of online experience and provide greater opportunities and release time for ongoing professional development, then faculty may become more proficient in the uses and understanding of online learning.

Conclusions: Quality Practices Technological Support

Based on the results of the *Survey of Online Educational Practices*, West Virginia faculty are in overall agreement that their institutions provided quality technological support in the areas of: easy to use online delivery tools and delivery platforms that rarely have downtime. Although, there was some disagreement with institutions' ability to provide technological support 24 hours a day. However, this did not affect the overall composite analysis, but should be considered as an area of improvement. Overall the composite mean was 3.90 and the composite mode was "agree" (5) for the targeted online practice of technological support.

Brown and Green (2003) state that faculty need to question if the money and time invested in technology are well spent. For example, if we want to have online support 24 hours a day, then the institution should provide the sustainable budget and infrastructure to provide that support 24 hours a day. In fact, Caplan (2004) regards the concept of technology support as an important quality practice in online education and that technological support should always be available if an institution states that its online educational system is available 24 hours a day. Taylor (2004) maintains that technological support must be continuous and that faculty should be able to rely on systems that are ready and available 24 hours a day. Taylor further declared that best practice standards in technological support could provide positive learning experiences for both the student and faculty members.

Comments made by respondents on the *Survey of Online Educational Practices* also support a need for institutions to review their technological support practices related to online education:

Comment: *Our technological team are very helpful when you can reach them! Although, I often need their assistance in the evening or on weekends and it is very difficult to get assistance after hours.*

Comment: *I can never get through to our tech support. I have to leave messages and they often take over a day to return my calls.*

Once again, it appears based on the statistical results from the *Survey of Online Educational Practices*, faculty agree with the literature regarding the quality practices in Technological Support. It is also within reason to assume that 24 hour a day technological support is not available in some institutions due to budgetary and resource constraints. For example, resource constraints could be the institutions' Internet providers ability to handle network traffic, or lack of trained personnel for helpdesk support and budgetary constraints could be insufficient funds to sustain the support of the hardware or software necessary to run an online teaching environment. However, according to the literature review, in order to provide best practices in online education it is up to institutions to provide a consistent and coherent technical framework with reasonable technical support for every educational technology hardware, software and delivery system that it uses in online education.

Conclusions: Quality Practices of Collaboration and Teamwork

Anderson and Elloumi (2004) stated that collaboration and teamwork were critical elements in the realm of quality practices to create a successful online learning experience. According to the results of the *Survey of Online Educational Practices*, West Virginia faculty were in disagreement their institutions provided the quality practices in faculty mentoring, peer review of online courses, and instructional designer assistance

with course creation. The composite mean was 2.88 and the composite mode was “disagree” (2) for the targeted practice of collaboration and teamwork.

The Kruskal-Wallis test yielded significance within the demographics of years teaching in higher education and with years teaching online. Faculty who had taught online and who had taught in higher education greater than five years reported more satisfaction with the practices of collaboration and teamwork than faculty who had taught less than five years in online education and in higher education.

Some institutions do not provide adequate training or mentoring programs to competently teach online. Benson (2003) stated that if collaborative development were strongly supported at the institutional level, then higher education organizations would be in line with one of the requirements set forth by the Council of Higher Education Accreditation. Benson further stated that if faculty built on the well established tradition of cooperation among faculty and applied this to online education, then the quality of academic offerings would improve regardless of the medium of their delivery.

Based on the results yielded from the *Survey of Online Educational Practices*, faculty in West Virginia agree with the literature review regarding the quality practices in collaboration and teamwork. Lorenzo (2003) and Caplan (2004) both argued that if online faculty are mentored by veteran online instructors, then faculty can create valuable partnerships that will help to alleviate the mere replication of face to face instruction in online education. Lorenzo (2003) further stated that it was critical for veteran online faculty to share their online teaching experiences with faculty who are just entering the realm of online teaching to increase the quality of online teaching practices.

Collaboration and teamwork between faculty can help further create, analyze and revise a course to better meet the instructional needs of an online learner (Kidney & Puckett, 2003). Furthermore collaborative efforts and teamwork can force faculty to evaluate their online courses often and make adjustments to the learning content each time it is taught, thus reducing the negative impact of online course decay or “in-the-can” syndrome. Although, it is reasonable to assume that because some universities use off the shelf online teaching applications and have tight budget constraints, roles for online creation, such as instructional designers, may not be necessary. However, research still stresses that mentoring programs or small faculty group collaborative efforts to produce and instruct online courses are valuable and make a high quality practice in online education.

Comments on the *Survey of Online Educational Practices* also support a need for professional development in the practices of collaboration and teamwork:

Comment: The process to get a course online needs to be streamlined. I also do not want other faculty to review my online courses.

Comment: I never allow other faculty to review my online courses.

Comment: Unfortunately, our school does not have an instructional designer, at least I do not think so, when I create a course, I often feel as if I am running uphill in sand!

If higher education organizations target the practices of collaboration and teamwork with their faculty and create opportunities for teambuilding and mentoring related to online instruction then faculty may have a more successful online teaching experience and feel more satisfied with the framework of their courses. Johnson and

Aragon (2003) have claimed that in order to create quality content and assessments it is a best practice for faculty to be flexible enough to allow other online stakeholders to review and help retool online content in order to keep content from growing stale.

Conclusions: Quality Practices of Flexibility

Based on the results of the *Survey of Online Educational Practices*, West Virginia faculty are in agreement they utilize the quality practices of flexibility within their online courses. The composite mean was 4.04 and the composite mode was “agree” (5) for the targeted quality practice of flexibility. However, there was disagreement with faculty allowing students to play a significant role in course content and assessment, with a mean of 3.49. Although this particular mean did not affect the overall composite analysis, according to the literature faculty could improve their online practices by allowing students to play a greater role in course content and assessment. In fact, Rumbel (1999) suggested that allowing students to become more involved in a course is a shift from a transmission model of education toward a constructivist model that exploits the full use of computer mediated communication. Hiss (2000) further declared that students can often be more informed about a particular subject matter than the faculty member teaching an online course. As a quality online practice, faculty should not feel threatened and be flexible enough to allow students to bring their knowledge and experiences to an online course.

Although some of the comments on the *Survey of Online Educational Practices* support the acceptance of the online practices of flexibility, it is apparent from some of the responses that faculty still need to consider allowing students to play a greater role in

course content and assessments. Listed below are a few endorsements and criticisms for the practices of flexibility:

Comment: I am never flexible with course work deadlines. Students always try to take advantage of you, if you are flexible with course due dates.

Comment: I did not create this course, so I am not allowed to let students do anything other than read the material and take the test. It is such a shame, because this course could be so much more!

Comment: My students have given me many great ideas for improving the course for successful learning. I always listen to my students and I often let them decide their final projects and how they wish to be graded.

Comment: It is imperative for a successful online experience that I come to an agreement at the beginning of the course with the students how they should be graded and just how many collaborative projects they will have together.

In actuality, the ability to create a flexible online course and syllabus can motivate faculty to move away from a linear module design to a more engaged model of teaching (Kidney & Puckett, 2003). Huber and Lowry (2003) also indicated that enabling students to give their own experiences and prompt them for feedback related to the design and implementation of a course could help to set up a positive co-learning experience. Thus, if faculty target their online practices of flexibility to include greater input from students, more opportunities for the exploration of topics and interactivity, then faculty and students should have a greater capacity for positive online educational experiences.

Conclusions: Quality Practices of Feedback

According to the results of the *Survey of Online Educational Practices*, West Virginia faculty were in agreement they provided quality feedback in online teaching practices. The composite mean was 4.54 and the composite mode was “agree” (6) for the targeted online practice of feedback.

The Kruskal-Wallis test did disclose that faculty who had taught online more than five years utilized the quality practices of feedback greater than faculty who had taught less than five years in online education. One possible reason for this finding may be faculty with less than five years of online experiences have not yet established response time parameters with their students.

White and Weight (2000) stated that it is imperative that guidelines and deadlines should be set up early in the course for a positive communication experience. Chickering and Ehrmann (1996) also declared that feedback at appropriate times resulted in a higher degree of student satisfaction. Although, Hacker and Niederhauser (2000) have suggested that faculty need to be careful about not giving students too much feedback. In fact Hacker and Niederhauser suggested that too much feedback can actually hamper online learning. Thus, it is important to have a balance of feedback with students. Depree (1998) also stated that it is important that feedback be supportive and constructive. Schwarz and White (2000) stated that feedback needed to be summative and formative and that faculty should always provide detailed constructive feedback.

The respondents of the *Survey of Online Educational Practices* appear to be in concert with the practices of feedback and many faculty seemed to enjoy their ability to interact with students with greater detail as listed in the comments below:

Comment: I am delighted that so many students email me frequently with questions. I enjoy the interactions that I have with my students online.

Comment: I think that the biographical area of my online course is great, I even created a discussion area just so students could “sound off” with each other.

Online education will often allow shy students to interact more with others.

There are a multitude of online feedback characteristics that can help sculpt the learning process. One method to accomplish this is to provide ongoing feedback to students that is supportive, constructive and timely. Berge (1998) stated that faculty who are teaching in an online environment should strive to provide an equivalent experience to face-to-face teaching not an equal experience. In other words, both online courses and face to face courses can achieve course objectives; however the methods used to teach students via online can be significantly different than teaching in a face to face course. If faculty who had greater online learning experiences collaborated and mentored faculty with less online experience and shared their ideas about the quality practices of feedback then perhaps online learning experiences might be enhanced for faculty just beginning to teach online.

Conclusions: Quality Practices of Assessments

Proponents of online education have asserted that faculty already include educational theory in online learning experiences. However, Speck (2002) indicated that this assumption is not necessarily the case in online education. Speck suggested that whatever educational theory was applied to a given online course then assessment must be tied to it. In other words the approach to online learning assessment should be tied to a coherent theory of learning.

According to the results of the *Survey of Online Educational Practices*, West Virginia faculty approached agreement they provided the quality practices of authentic assessments. The composite mean was 3.51 and the composite mode was “agree” (4) for the targeted quality practice of assessment. However, there was considerable disagreement with faculty providing assessments that addressed different learning styles with a mean of 2.85. Additionally faculty had some disagreement with collaborative assessment activities with a mean of 3.23. These responses of disagreement do not concur with the literature. Johnson and Aragon (2003) claimed that in order to create quality assessments, two key elements were providing collaborative learning opportunities and addressing individual differences. Branzburg (2001) declared that discussions and group work were essential to online course effectiveness. In addition, Mills (2002) stated that in order to create a more positive learning environment, then assessment required variation, creativity and often needed to address the different learning styles of students.

The Kruskal-Wallis test did reveal that faculty who had taught online greater than five years reported more satisfaction with the practices of assessment than faculty who had taught less than five years in online education. Muirhead (2000) reported that quality assessment was a constant source of concern for online instructors. Perhaps faculty who have less experience with online education are more concerned with academic honesty and integrity and feel that timed tests provide a strategic means to detect and prevent academic dishonesty. However, Heberling (2002) concluded that with experience faculty begin to take into account the challenges and barriers to online assessment.

Comments made by respondents on the *Survey of Online Educational Practices* support a need for professional development in the practices of Assessment:

Comment: *Because online learning is so labor intensive, I fear that many faculty on my campus, simply encourage test taking in their assessment strategies.*

Comment: *Although teaching online is applicable to the student of today, I do not believe that faculty try to employ any different assessment strategies. Most of my colleagues still give multiple choice tests and short answer quizzes to their students.*

Although, these comments do not appear to represent the overall tendency based on the results from the *Survey of Online Educational Practices*; which indicate faculty have a tendency toward agreement with the literature regarding the practices in assessment. However, once again, faculty who taught less than five years online had a greater tendency toward “disagreement” with the practices of assessment. Clearly online assessment is not without its problems although, according to the literature, if online learning is tied to active processes, constructivism and adult learning techniques; then given the advantages and disadvantages of online learning, assessment in an online course can be just as vigorous and meaningful as in a face-to-face classroom.

Therefore, it is important to allow faculty the time to explore the blending of effective learning theory tied to assessment to maximize the effectiveness of online education. Faculty must also learn to bind their assessments to explicitly stated learning outcomes. This can be accomplished by providing targeted professional development opportunities that focus on online education assessment strategies and through mentoring programs that allow experienced online instructors to work with new online educators. In

fact, Paloma and Banta (1999) asserted that effective assessment strategies needed strong faculty buy-in with online learning environments and that multiple methods should be used with formulating online assessments. Thus, not only helping students to obtain information, but to gain a clear understanding of what they know and why they know it.

Conclusions: Quality Practices of Adult Learning Techniques

Based on the results of the *Survey of Online Educational Practices*, West Virginia faculty yielded agreement that they provided adult learning techniques within their online courses. The composite mean was 4.47 and the composite mode was “agree” (5) for the targeted quality practice of adult learning techniques.

It is implied from this study that West Virginia higher education faculty create and deliver courses that are directed to the non-traditional adult learner. In fact, Charp (2000) indicated that people of all ages are beginning to choose nontraditional education to start and advance their careers. The Sloan Consortium (2005) also indicated that adults are looking for new avenues to further their education and this is one of the driving forces behind the startling rate of growth of online learners. Bedore et al. (1997) insisted that to ensure quality online teaching, faculty should utilize adult learning techniques as part of a regimen of best practices in online learning.

In fact the endorsements made by respondents on the *Survey of Online Educational Practices* support the quality practices of Adult Learning Techniques:

Comment: I love teaching online, it can be such a collaborative learning adventure with adults; often my students bring so much information and real world scenarios to the class that we just could not get without their input!.

Comment: Teaching adults is far different online than I expected. First of all, most of my students are highly motivated to learn, so it is critical that I act as a facilitator rather than a lecturer in my online course.

However, Cassidy (2003) suggested that not all learners are ready or able to be highly self-directed at all time. In fact faculty should continually monitor their online students individually to facilitate successful learning. Cassidy (2003) further stated that social interaction and individual support should be given to students who need it. Bedore et al. (1997) also suggest that to ensure quality online teaching faculty should not only utilize adult learning techniques for online assignments, but they must flow through assessment as well. For instance, if a structured behaviorist teaching strategy in an online course is used, then the method of assessment should be behaviorist as well. Yet literature suggests that providing a constructivist approach goes hand-in-hand with adult learning and that in order for online courses to be successful a best practice would be to utilize the theory of constructivism in the creation of an online course.

Although there are a myriad of adult learning techniques, the literature suggests that collaborative learning and a student centered approach can create a positive online experience and should be considered a quality practice in online education. Higher education faculty should continue to target their online development and delivery practices. This can be accomplished with the utilization of adult learning techniques that continue to explore the use of flexibility, team projects, collaborative assignments, case studies and real-world simulations within their online courses. Palloff and Pratt (2001) also asserted that in order to provide positive learning experiences with students then

faculty must interact with their students and use adult learning techniques within a constructivist approach to extend students critical thinking skills.

Summary and Recommendations for Further Study

High quality in online teaching requires more than supplying a set of assignments to students and testing their ability to retain information. Quality online practices require practical virtual classroom skills and a deep understanding of various instructional methods and techniques to help students learn. Although there is overall agreement that West Virginia higher education faculty adhere to quality online practices as delineated in the literature; participants in the study indicated a number of disagreements with the literature concerning their use of quality online educational practices. There was also disagreement that institutions provide the infrastructure and policies needed to have a quality online education. Throughout the data, the respondents to the study appeared to utilize the quality online practices of feedback, flexibility, assessment, faculty support, technological support, and adult learning techniques. Nonetheless, there is evidence from the survey results that indicate the areas of institutional support, collaboration and teamwork and even areas of assessment that are not well utilized by faculty. Therefore, although not statistically conclusive, it is implied from this study that these areas of quality online educational practices are not being fully integrated in West Virginia online educational opportunities.

It is recommended by this study that all of these quality online teaching strategies as detailed in this study be used to meet the needs of quality online instruction. In addition, institutions must provide the infrastructure for a sustainable quality online teaching environment. Although it is true that no solitary online instructional practice or

strategy is superior to any other online practice; there are quality online practices that are supported by the Council of Regional Accrediting Commissions and supported by educational literature. This research provided insight into the extent to which faculty agreed they utilized quality online practices. However, as with any social science study further questions developed from this study might be answered through additional research. Recommendations for further study are as follows:

- A study should be conducted at the institutional level regarding faculty satisfaction with online education. This could include comparisons with the guidelines set forth by Regional Accrediting Commissions and faculty experiences. Additionally, studies could include a review of the funding and budgetary models and policies related to online learning across the state that may provide a framework for a sustainable model for other states to follow.
- An important characteristic of quality online practice is an ongoing self evaluation system of high quality online practices. This research indicates that institutions do not provide adequate oversight in online education. Further studies, should investigate an effective experimental model of oversight and self-evaluation systems for quality online practices.
- As more institutions are under scrutiny for accreditation purposes related to online learning and in view of the fact that online learning is a dynamic model; a reinvestigation of future “quality online practices” and “online learning models” should be examined including faculty and students.

- Further studies should be conducted in the area of professional development and mentoring programs offered by institutions related to online education. Additionally, sex differences were not analyzed as part of this study, thus studies could be conducted to examine differences in teaching strategies related to sex in quality online teaching practices.
- One of the goals of quality online education is to increase the amount of collaboration and teamwork that faculty have related to their online educational experiences. Further studies should be conducted in the area of faculty collaboration and teamwork to determine the areas of weakness and examine factors that contribute to greater efforts made in the area of faculty collaboration development.
- Findings from this study suggest that additional research into the actual online teaching practices of faculty in a qualitative research study may reveal additional quality online practices or a greater disconnect between what faculty self-report in a survey and what they are actually facilitating in an online environment.
- A study over an extended period of time could be conducted between students in an online course and faculty members in an online course to determine from the students point of view, if the faculty members are utilizing quality online practices.

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Appendices

Appendix A: Survey of Online Educational Practices

Survey of Online Educational Practices

Section 1: Please specify the extent that you agree your online courses reflect the following practices by circling the number that best matches your opinion.	Strongly Disagree	Disagree	Disagree Somewhat	Agree Somewhat	Agree	Strongly Agree
1. My institution provides adequate compensation for online course development and delivery.	1	2	3	4	5	6
2. My institution monitors the development and delivery of online courses.	1	2	3	4	5	6
3. My institution has a policy for intellectual property regarding online content.	1	2	3	4	5	6
4. My institution provides ongoing professional development in online course creation.	1	2	3	4	5	6
5. My institution provides training in the hardware and software technologies needed to deliver online instruction.	1	2	3	4	5	6
6. My institution provides training in copyright laws and legal issues related to teaching online.	1	2	3	4	5	6
7. My institution's online course delivery platform rarely has downtime.	1	2	3	4	5	6
8. My institution provides technological support 24 hours a day for my online courses.	1	2	3	4	5	6
9. My institution provides an online delivery platform that is easy to use. (e.g. WebCT, Desire to Learn, Sakai)	1	2	3	4	5	6
10. My institution provides mentoring for online instructors.	1	2	3	4	5	6
11. My institution allows other faculty to review my online courses for clarity and consistency.	1	2	3	4	5	6
12. I work with instructional designers from my institution to develop my online courses.	1	2	3	4	5	6
13. I design my courses to allow students to play a significant role in course content and assessments.	1	2	3	4	5	6
14. I handle unexpected technological interruptions with little hindrance to the flow of the course. (e.g. If the online course is unavailable, I permit my students to submit their assignments late, or by other means: such as other email, or postal mail.)	1	2	3	4	5	6
15. I am flexible with deadlines for online course work.	1	2	3	4	5	6

Please continue on the back of this page.

Section 1: Please specify the extent that you agree your online courses reflect the following practices by circling the number that best matches your opinion.	Strongly Disagree	Disagree	Disagree Somewhat	Agree Somewhat	Agree	Strongly Agree
16. I respond to students within 24 to 48 hours in my online courses.	1	2	3	4	5	6
17. I provide my feedback policies clearly at the beginning of the online course within the syllabus. (e.g. I inform students when to expect a reply.)	1	2	3	4	5	6
18. I provide students with detailed constructive critiques of their work.	1	2	3	4	5	6
19. I provide online assessments that address different learning styles. (e.g. aural, visual, tactile)	1	2	3	4	5	6
20. I provide assessments that are built on critical reflections of the course content. (e.g. journaling, critical writing, essay)	1	2	3	4	5	6
21. I include collaborative assessment activities in my online courses. (e.g. discussions, small group projects)	1	2	3	4	5	6
22. I encourage problem solving in my online courses (e.g. Students are provided with case studies to examine.)	1	2	3	4	5	6
23. I promote social interaction in my online courses. (e.g. Student biographical sections, Student open discussion forums)	1	2	3	4	5	6
24. I act as a facilitator rather than a lecturer in my online courses.	1	2	3	4	5	6

Section 2: Please provide the following information about yourself by circling one answer for each item:

25. My sex is: Male Female

26. My Faculty Status is : Full Time Part Time

27. My Faculty Status is: Tenured Non-Tenured

27. I have worked in higher education: _____ years

28. I have worked in online education: _____ years

29. Please provide additional comments below about your online teaching experiences:

If a self-addressed return envelope is not available with this survey, please return the survey to:
Michael H. Murphy c/o Marshall University Graduate College, 100 Angus E. Peyton Drive, South Charleston, 25303

Appendix B: Survey Cover Letter

Date: August 24, 2007

MUIRB APPROVAL # 3544

Dear Faculty,

You have been selected to participate in this doctoral research study as part of a sampling of West Virginia higher education faculty. The purpose of this study is to examine the practices that West Virginia higher education faculty use for teaching in an online educational environment. Possible benefits of this research include: informing higher education administrators about the development and delivery of online education; extending educators' knowledge of online learning practices; and providing information for effective faculty development opportunities in online education.

I appreciate that your time is valuable. The attached survey will only take approximately fifteen minutes to complete. Participation is completely voluntary, and your responses are confidential. Data will be securely stored and will be reported in aggregate form only with no identification of individual faculty or institution. However, in the event that I may be required to contact non-respondents; the return envelope in your package is coded for re-mailing purposes.

Your responses are critical. Your timely participation will greatly reinforce my research. However, there is no penalty for declining to participate in this study. I only request that you please answer the questions as honestly and accurately as possible. I am requesting that all responses be returned by September 7, 2007. Enclosed you will find a stamped self-addressed envelope for your mailing convenience.

Please keep this cover letter for your records. If you have any question regarding the study, you may contact me at 304-746-1973. If you have questions concerning your rights as a research subject, you may contact Dr. Stephen Cooper, IRB#2 - Behavioral and Social Science Chair, at the Office of Research Integrity at Marshall University at 304-696-7320. Please accept my gratitude in advance for your cooperation and timely participation in this research study.

Appreciatively,

Michael H. Murphy, Ed.S
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, West Virginia 25303
Phone: 304-746-1973

Appendix C: Post Card Reminder

Dear Faculty:

Recently you received a packet requesting your participation in a study regarding practices in online education. If you have returned your survey, I would like to offer my earnest gratitude for your time and contribution to my study.

If you have not returned your survey, I respectfully request that you would consider participating in the study. The survey will take only a few minutes to complete and your input is exceedingly valuable in determining strengths and weaknesses in our online educational endeavors. Even if you are not currently teaching online, or if your course is only partially online, your input will help strengthen our understanding of quality practices in online education. Thank you again for taking a few minutes of your time to fill out and return the survey.

Appreciatively,

Michael H. Murphy, Ed.S.
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, West Virginia 25303

Appendix D: Follow Up Survey Cover Letter

Date:

Dear Faculty,

Recently you received a packet requesting your participation in a doctoral research study at Marshall University Graduate College. The cover letter accompanying the packet explained the purpose of the study is to examine the practices that West Virginia higher education faculty use for teaching in an online educational environment. **If you have misplaced your first packet, here is the information again.**

I appreciate that your time is valuable. The attached survey will take a few minutes to complete. Participation is completely voluntary, and your responses are confidential. Even if you are not currently teaching online, your input is still valuable. Data will be securely stored and will be reported in aggregate form only with no identification of individual faculty. However, in the event that I may be required to send out reminders or another package; the return envelope in your package is coded for re-mailing purposes only.

Your responses are critical. Your timely participation will greatly reinforce my research. However, there is no penalty for declining to participate in this study. I request that you please answer the questions as honestly and accurately as possible. I am requesting that all responses be returned by [date]. Enclosed you will find a stamped self-addressed envelope for your mailing convenience.

Please keep this cover letter for your records. If you have any question regarding the study, you may contact me at 304-746-1973. If you have questions concerning your rights as a research subject, you may contact Dr. Stephen Cooper, IRB#2 - Behavioral and Social Science Chair, at the Office of Research Integrity at Marshall University at 304-696-7320. Please accept my gratitude in advance for your cooperation and timely participation in this research study.

Appreciatively,

Michael H. Murphy, Ed.S
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, West Virginia 25303
Phone: 304-746-1973

Appendix E: Panel Of Experts

Panel of Experts

The following individuals served as a panel of experts to establish readability and content validity for the *Survey of Online Educational Practices*:

Nancy G. Burton, Ed.S.
Associate Professor of Education
Division of Education and Human Performance
Concord University
PO Box 1000, Campus Box 37
Athens, West Virginia 24712

Dixie Billheimer
Coordinator for School Improvement
West Virginia Center for Professional Development
208 Hale Street
Charleston, West Virginia 25301

Dr. Michael L. Cunningham
Professor and Program Director, Leadership Studies
Graduate School of Education and Professional Development
Marshall University
100 Angus E. Peyton Drive
South Charleston, West Virginia 25303

Dr. Sandra Lee Orr
Associate Professor of Education
West Virginia State University
629 Wallace Hall
PO Box 1000
Institute, West Virginia 25112

Dr. Edna M. Meisel
Assistant Professor
Graduate School of Education and Professional Development
Marshall University
100 Angus E. Peyton Drive
South Charleston, West Virginia 25303

Sherri Ritter, M.S.
Instructional Technologist
Marshall University
100 Angus E. Peyton Drive
South Charleston, West Virginia 25303

Appendix F: Questions For Panel Of Experts

Readability and Content Validity Questions for Panel of Experts

1. Are the questions written as to be uniformly understood?
2. Do the questions contain abbreviations or unconventional phrases?
3. Are the questions too vague?
4. Are the questions biased?
5. Are the questions objectionable?
6. Are the questions too demanding?
7. Do any questions embody a double question?
8. Do the questions contain a double negative?
9. Are the answer choices mutually exclusive?
10. Do the questions assume too much knowledge on the respondent's part?

(From Smith & Glass, 1987 page 248)

Please add any additional general comments about the survey below:

Thank you,

Please return this information as soon as possible to:

Michael H. Murphy
100 Angus E. Peyton Dr.
South Charleston, West Virginia, 25303
Email: mmurphy@marshall.edu
Phone: 304-746-1973

Appendix G: IRB Approval Letter

Curriculum Vitae

Curriculum Vitae

Michael H. Murphy

Associate Director of Regional Campuses for Computing Services

Adjunct Faculty- Marshall University Graduate College

Marshall University -100Angus E. Peyton Drive, South Charleston, West Virginia 25303-1600

Email: mmurphy@mashall.edu - Phone: 304.382.3062

Academic Degrees

Doctor of Education Ed.D. 2008

Marshall University--South Charleston, WV

Major: Curriculum and Instruction

Cognate: Educational Technology

Education Specialist (Ed.S.), 2004

Marshall University--South Charleston, WV

Major: Curriculum and Instruction

Master of Secondary Education (M.A.), 2002

Marshall University Graduate College--South Charleston, WV

Cognate: Educational Technology

Bachelor of Science (B.S.), 1996

Eastern Mennonite University--Harrisonburg, VA

Major: Business Administration

Professional Experience

Adjunct Faculty (1998 - present)

Elementary and Secondary Education

Graduate School of Education and Professional Development

Marshall University, South Charleston, WV

Service Related Activities:

University, College, and Division Service. (1998 -present). Technology-related committees for graduate school and search committees. Initial website development for Graduate School of Education and Professional Development and maintenance, etc. (GSEPD at Marshall University). Attended and presented at local, statewide, national, and international conferences. Responsible for providing collaborative leadership, vision, and oversight into IBM's Learning Village group development for Marshall. Provided guidance in best practices in online environment instruction to faculty. Provided face-to-face and online instruction in the follow areas:

Adjunct Faculty - Courses Taught:

CI 559: Multicultural Influences in Education

CIEC 534: Application software in the classroom curriculum.

CIEC 610: LAN and telecommunications in the classroom.

EDF 665: Sociology in American Schools.

EDF 615: History of Education in the United States

Associate Director of Regional Campuses for Computing Services (1998-present)

Marshall University - South Charleston Campus
South Charleston, West Virginia

Service Related Activities:

Responsible for the coordination of computing services activities at the following regional campus centers: South Charleston Campus, South Charleston, WV; the Beckley Center, Beckley, WV; the Mid-Ohio Valley Center, Point Pleasant, WV; the Teays Valley Center, Teays Valley, WV; the Logan Center, Logan, WV; the Larry Joe Harless Center, Gilbert, WV; the Mullens Opportunity Center, Mullens, WV.

Responsible for providing collaborative leadership, vision, oversight, planning and management in relation to Computing Services on remote campuses, as well as participation in the strategic planning efforts of the Computing Services division by ensuring the following duties are implemented personally or via professionally managed staff:

Publications

Billheimer, D, Sigman, K., Murphy, M.H., & Heaton, L. (2005). Multimedia in Education: Integration on Multiple Levels. Proceedings from the *World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005*. Retrieved, August 3, 2005 from ACE Digital Library: Volume 2005, Number 1: Keyword Search: Michael Murphy

Karassaris, K., Meyer, C., & Murphy, M. H.(2006). Brain based learning theory and its implications in the middle school. *National Social Science Journal. Vol. 27,(1)*
http://www.nssa.us/27_1/27-1%2011%20KorcsmarosBrain-Based.htm

Meyer, C., Murphy, M. H. & Karassaris, K. (2005). Brain based learning theory and its implications in the middle school. Proceedings from the *National Social Science Association*.

Schimmel, C., Orr, S. & Murphy, M. H. (2004). *Some Courses Do, Some Don't: Examining What Courses Offer Effective Online Learning in Higher Education*. Proceedings of WVSTC 2004 sponsored by the West Virginia Education Network. Retrieved, October 20, 2004 from:
<http://www.wvnet.edu/conference/proceedings/proceedings.html>.

Invited Presentations, Workshops and Consulting

Murphy, M. H. (2006, June-July). Virtual Schools, West Virginia State Department of Education. Evaluator for online educational courses in the K-12 environment for West Virginia school systems. Evaluations: June - July 2006.

Murphy, M. H., Meisel, E., Hollingsworth, S., Hundley, E., & Jones, M. (2005, April 2). *Doctoral Student Panel*. Session presented to new doctoral students: Marshall University Graduate College, South Charleston, West Virginia.

Murphy, M. H., & Heaton, L.A. (2004, April 2). *Using M.S. Word templates for Manuscripts*. Session presented for doctoral students for creating APA templates for dissertations and other manuscripts. Marshall University Graduate College, South Charleston, West Virginia.

Murphy, M. H., Hodge, J. & Meisel, E. (2004, April 17). *Putting the pieces together*. Panel session presented to new doctoral students: Marshall University Graduate College, South Charleston, West Virginia.

Murphy, M. H. & Schimmel, C. (2003, November 4). *The Integration of IBM's Learning Village (Computer Application) in the Classroom*. Class session presented for Tennerton Elementary School Teachers, Buckhannon, West Virginia.

Heaton, L. A., & Murphy, M. H. (2000, April 10). *Discussion of Computers and Technology*. Invited presentation to high school seniors: South Charleston High School. South Charleston, West Virginia.

Conference Presentations

Meyer, C., Murphy, M. H., & Meisel, E. (2007, February 20). *Authentic Assessment Online: Avoiding the Poseidon Adventure*. Session presented at the Association of Teacher Educators, National Conference in San Diego, California.

Murphy, M. H. (2006, April 28). *Using Hot Potatoes, simple, fun and free technology for online assessment*. Session presented at the West Virginia Association of Middle Learning Annual Conference, Stonewall Jackson State Resort. West Virginia.

Meyer, C., & Murphy, M. H. (2006, February 19). *Preparing and Defending a Doctoral Portfolio in Place of a Comprehensive Examination*. Session presented at the Association of Teacher Educators, National Conference in Atlanta, Georgia.

Heaton, L.A., & Murphy, M. H. (2005, December 1). *Integrating technology and simple online assessments*. Session presented at the 11th annual Virginia Educational Technology Leadership Conference. Roanoke, Virginia.

Sigman, K., Murphy, M. H., & Heaton, L. (2005, August 11). *Multimedia in Education: Integration on Multiple Levels*. Session presented at the West Virginia Statewide Technology Conference, Radisson Resort - Morgantown, West Virginia.

Billheimer, D., Sigman, K., Murphy, M. H., & Heaton, L. (2005, June 27). *Multimedia in Education: Integration on Multiple Levels*. Session presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA), 2005 in Montreal, Canada.

Heaton, L.A., Murphy, M. H. & Pauley, R. (2005, April 23). *Using PDA technology in Science related projects in the middle school*. Session presented at the West Virginia Association of Middle Learning Annual Conference, Stonewall Jackson State Resort, West Virginia.

Meyer, C., & Murphy, M. H. (2005, February 14). *So that's why kids act the way they do: Brain Based learning Theory and its Implications in the middle school*. Session presented at the Association of Teacher Educators, National Conference in Chicago, Illinois.

Heaton, L.A., Pauley, R., Eagle, T. & Murphy, M. H. (2004, December 1). *Integrating technology and Palm Pilot applications*. Session presented at the 10th annual Virginia Educational Technology Leadership Conference. Roanoke, Virginia.

Meyer, C., & Murphy, M. H. (2004, October 13). *Brain Based Learning Theory and its Implications in the Social Science Classroom*. Session presented at the National Social Science Association Annual Conference, Conference Center, Holiday Inn - Inner Harbor, Baltimore, Maryland.

Schimmel, C., Murphy, M. H., & Orr, S. (2004, August 3). *Some do, some don't - Creating effective online distance education courses*. Session presented at the West Virginia Statewide Technology Conference. Civic Center - Charleston, West Virginia.

Heaton, L. A., & Murphy, M. H. (2004, August 2). *Photoshop Elements Workshop*. A session presented at the West Virginia Statewide Technology Conference. Clay Center - Charleston, West Virginia.

Meyer, C., & Murphy, M. H. (2004, April 21). *Brain Based Learning Theory and its Implications in the classroom*. Session presented at the WV Association of Middle Learning Conference. Stonewall Jackson State Resort - West Virginia.

Professional Organizations

West Virginia Association of Middle level Educators (WVAMLE), 2004-present

National Social Science Association (NSSA), 2004-2005

Association of Teacher Educators (ATE), 2004-present